6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 51

[FRL-]

[Docket No A-95-38]

Regional Haze Regulations

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Section 169A of the Clean Air Act (CAA) sets forth a national goal for visibility which is the "prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution." There are 156 Class I areas across the country, including many well-known national parks and wilderness areas, such as the Grand Canyon, Great Smokies, Shenandoah, Yellowstone, Yosemite, the Everglades, and the Boundary Waters. Regional haze is visibility impairment caused by the cumulative air pollutant emissions from numerous sources over a wide geographic area. The EPA promulgated regulations in 1980 to address visibility impairment that is "reasonably attributable" to one or a small group of sources, but EPA deferred action on regional

haze regulations until monitoring, modeling, and scientific knowledge about the relationship between pollutants and visibility effects improved. In 1993, the National Academy of Sciences (NAS) concluded that "current scientific knowledge is adequate and control technologies are available for taking regulatory action to improve and protect visibility."

On July 31, 1997 (62 FR 41138), EPA published proposed amendments to the 1980 regulations to set forth a program to address regional haze visibility impairment. The EPA also published a notice of availability of additional information on the proposed regional haze regulation on September 3, 1998. This notice took comment specifically on new implementation plan timelines set forth in the Transportation Equity Act for the 21st Century, Pub. L. 105-178, and on a proposal from the Western Governors' Association (WGA) for addressing the recommendations of the Grand Canyon Visibility Transport Commission (GCVTC) in the final rule. The EPA received more than 1300 comments overall on the proposal and notice of availability.

Today's final rule calls for States to establish goals and emission reduction strategies for improving visibility in all 156 mandatory Class I national parks and wilderness areas. Specific provisions are included in the rule allowing nine western States to implement the recommendation

of the GCVTC within the framework of the national regional haze program. In addition, EPA encourages States to work together in regional partnerships to develop and implement multistate strategies to reduce emissions of visibility-impairing fine particle pollution.

DATES: The regulatory amendments announced herein take effect on [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Docket. The public docket for this action is available for public inspection and copying between 8:00 a.m. and 5:30 p.m., Monday through Friday excluding legal holidays, at the Air and Radiation Docket and Information Center (6102), Attention: Docket A-95-38, Room M-1500, 401 M Street, SW, Washington, DC 20460, phone 202-260-7548, fax 202-260-4400, email: A-and-R-Docket@epamail.epa.gov. A reasonable fee for copying may be charged. The regional haze regulations are subject to the rulemaking procedures under section 307(d) of the CAA. The documents relied on to develop the regional haze regulations have been placed in the docket.

FOR FURTHER INFORMATION CONTACT: For general questions regarding this notice, contact Richard Damberg, U.S. EPA, MD-15, Research Triangle Park, NC 27711, telephone (919) 541-5592, email: damberg.rich@epa.gov.

SUPPLEMENTARY INFORMATION:

Electronic Availability - The official record for this rulemaking, as well as the public version, has been established under docket number A-95-38 (including comments and data submitted electronically as described below). A public version of this record, including printed, paper versions of electronic comments, which does not include any information claimed as Confidential Business Information, is available for inspection from 8:00 a.m. to 5:30 p.m., Monday through Friday, excluding legal holidays. The official rulemaking record is located at the address in ADDRESSES at the beginning of this document. World Wide Web sites have been developed for overview information on visibility issues and related programs. These web sites can be accessed from Uniform Resource Locator (URL):

http://www.epa.gov/airlinks/.

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I. Overview of Today's Notice

This preamble provides the details and rationale for the final regional haze rule. Unit II includes background information on regional haze and on the legal and scientific basis for today's action. Unit III describes the provisions of the national requirements for regional haze and includes a discussion of the comments received on the July 1997 proposal. Unit IV discusses specific regional provisions for 16 western Class I areas that were the subject of a 1996 report by the GCVTV. Unit V is a discussion of issues related to implementation of the rule by Indian tribes. Unit VI summarizes several technical amendments to existing visibility regulations in order to coordinate those requirements with the requirements of today's rule. Unit VII discusses how today's rulemaking is in compliance with the requirements of various executive orders and statutes.

II. Background Information on the Regional Haze Program

A. Regional Haze

Regional haze is visibility impairment that is produced by a multitude of sources and activities which emit fine particles and their precursors and which are located across

a broad geographic area.[1] Twenty years ago, when initially adopting the visibility protection provisions of the CAA, Congress specifically recognized that the "visibility problem is caused primarily by emission into the atmosphere of SO_2, oxides of nitrogen, and particulate matter, especially fine particulate matter, from inadequate[ly] controlled sources."[2] The fine particulate matter (PM)(e.g., sulfates, nitrates, organic and elemental carbon, and soil dust) that impairs visibility by scattering and absorbing light can cause serious health effects and mortality in humans, and contribute to environmental effects such as acid deposition and eutrophication. Data from the existing visibility monitoring network show that visibility impairment caused by air pollution occurs virtually all the time at most national park and wilderness area monitoring stations.[3] Average visual range in many Class I areas[4] in

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[1]See, e.g., U.S. EPA, Air Quality Criteria for Particulate Matter, Research Triangle Park, NC, National Center for Environmental Assessment, office of Reseach and Development, EPA/600/P-95/001bF, April 1996.

[2] H.R. Rep. No. 95-294 at 204 (1977).

[3] National Park Service, 1988, Air Quality in the National Parks: A Summary of Findings from the National Park Service Air Quality Research and Monitoring Program. Natural Resources Report 88-1. Denver CO, July 1988

[4] Areas designated as Class I areas are those national parks exceeding 6000 acres, wilderness areas and national memorial parks exceeding 5000 areas, and all international parks which were in existence on August 7, 1977. Visibility has been identified as an important value in 156 of these

the Western United States is 100-150 kilometers (13.6-9.6 deciviews)[5], 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 30 kilometers (25 deciviews or more), or about one-fifth of the visual range that would exist under estimated natural conditions. The role of regional transport of fine particles in contributing to elevated PM levels and regional haze impairment has been well documented by many researchers[6] and recognized as a significant issue by policymakers from Federal, State and local agencies, industry and environmental organizations.

B. How Today's Rule Responds to the CAA

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areas. See 40 CFR part 81, subpart D. The extent of a Class I area includes subsequent changes in boundaries, such as park expansions. CAA section 162(a)). States and tribes may designate additional areas as Class I, but the requirements of the visibility program under section 169A of the CAA apply only to "Class I areas," and do not affect these additional areas.

[5] "Deciview" is a visibility metric discussed further in unit III.B. of today's notice, and defined in section 51.301(aa) of the rule. Higher deciview values indicate greater levels of visibility impairment.

[6] Table 24-6, Long Term Visibility and Aerosol Data Bases, in "Acidic Deposition, State of Science and Technology, Volume III, Terrestrial, Materials, and Health and Visibility Effects, Report 24, Visibility Existing and Historical Conditions, Causes and Effects." p. 24-51, 1991, and Chapter 8, "Effects on Visibility and Climate" in "Air Quality Criteria for Particulate Matter", U.S. EPA, EPA 600/P-95/001bF, April 1996.

The visibility protection program under sections 169A, 169B, and 110(a)(2)(J) of the CAA is designed to protect Class I areas[7] from impairment due to manmade air pollution. Congress adopted the visibility provisions in the CAA to protect visibility in these “areas of great scenic importance.”[8] The current regulatory program addresses visibility impairment in these areas that is "reasonably attributable"[9] to a specific source or small group of sources. In adopting section 169A, the core visibility provisions adopted in the 1977 CAA Amendments, Congress also expressed its concern with visibility problems caused by pollutants that “emanate from a variety of sources.” It noted the problem of “hazes” from “regionally distributed sources,”[10] and concluded that additional provisions were needed to remedy “the growing visibility problem.” The purpose of today's rule is to revise the existing visibility

[7] For the purposes of this preamble, the term “Class I area” will have the same meaning as “Class I area” as described in footnote 3.

[8] H.R. Rep. No. 294, 95th Cong. 1st Sess. at 205 (1977).

[9] "Reasonably attributable" visibility impairment, as defined in section 51.301(s), means "attributable by visual observation or any other technique the State deems appropriate." It includes impacts to Class I areas caused by plumes or layered hazes from a single source or small group of sources.

[10] H.R. Rep. No. 95-294 at 204 (1977).

regulations[11] in order to integrate provisions addressing regional haze impairment. Today's rule establishes a comprehensive visibility protection program for Class I areas. Figure 1 is a map indicating the locations of the Class I areas.

C. The 1980 Visibility Regulation--Commitment to A Regional Haze Program

Section 169A of the CAA, established in the 1977 Amendments, sets forth a national visibility goal that calls for "the prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution." The EPA's initial visibility regulations, developed in 1980, address visibility impairment that is "reasonably attributable" to a single source or small group of sources. Under the 1980 rules, the 35 States and 1

[11] 45 FR 80084 (December 2, 1980) and section 51.300-307.

[Placeholder for Figure 1]

territory containing Class I areas[12] are required to:

1) revise their SIPs to assure reasonable progress toward the national visibility goal;

2) determine which existing stationary facilities should install the best available retrofit technology (BART) for controlling pollutants which impair visibility;

3) develop, adopt, implement, and evaluate long term strategies for making reasonable progress toward remedying any existing and preventing any future impairment in the Class I areas;

4) adopt certain measures to assess potential visibility impacts due to new or modified major stationary sources, including measures to notify Federal land managers (FLMs) of proposed new source permit applications, and to consider visibility analyses conducted by FLMs in their new source permitting decisions; and

5) conduct visibility monitoring in Class I areas.

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[12] The States and one territory having at least one Class I area are listed in section Part 51.300(b)(2). These States and one territory are as follows: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Florida, Georgia, Hawaii, Idaho, Kentucky, Louisiana, Maine, Michigan, Minnesota, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Oklahoma, Oregon, South Carolina, North Dakota, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Virgin Islands, Washington, West Virginia, and Wyoming. For a specific list of Class I areas located in each State or territory, see 40 CFR 81.401-437.

The 1980 rules addressing "reasonably attributable" visibility impairment were designed to be the first phase in EPA's overall program to protect visibility. The EPA explicitly deferred national rules addressing regional haze impairment until some future date:

> . . . when improvement in monitoring techniques provides more data on source-specific levels of visibility impairment, regional scale models become refined, and our scientific knowledge about the relationships between emitted air pollutants and visibility impairment improves.[13]

The EPA believes that the technical tools and our scientific understanding of visibility impairment are now sufficiently refined to move forward with a national program addressing regional haze in Class I areas. The EPA's position is supported by the NAS 1993 report, *Protecting Visibility in National Parks and Wilderness Areas.* One of the principal conclusions of this report is that "current scientific knowledge is adequate and control technologies are available for taking regulatory action to improve and protect visibility."[14] Section II.D. describes a number of

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[13] 45 FR 80086.

[14] National Research Council, Committee on Haze in National Parks and Wilderness Areas, *Protecting Visibility in National Parks and Wilderness Areas*, National Academy Press, 1993, p. 11.

other studies and information now available which provide the technical basis to move forward with a regional haze program.

In addition, EPA finds the visibility protection provisions of the CAA to be quite broad. Although EPA is addressing visibility protection in phases, the national visibility goal in section 169A calls for addressing visibility impairment generally, including regional haze.[15]

Further, Congress added section 169B as part of the 1990 Amendments to the CAA to focus attention on regional haze issues; it calls for EPA to issue regional haze rules within 18 months of receipt of the final report from the GCVTC. In addition, section 169B includes provisions for EPA to conduct visibility research with the National Park Service and other Federal agencies, to develop an interim findings report on the visibility research[16], to develop a Report to Congress on expected visibility improvements due

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[15] State of Maine v. Thomas, 874 F. 2d 883, 885 (1st Cir. 1989) ("EPA's mandate to control the vexing problem of regional haze emanates directly from the CAA, which 'declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution.'") (citation omitted).

[16] U.S. EPA, "Interim Findings on the Status of Visibility Research", February 1995, (EPA/600/R-95/021); see also 60 FR 8659 notice announcing the report availability and how to obtain copies (Feb. 15, 1995).

to implementation of other air pollution programs,[17] and to provide periodic reports to Congress on trends in visibility improvements. Section 169B also provides the authority to the Administrator to establish visibility transport commissions in response to a petition from two or more States, or on her and/or his own motion. To date, EPA has not received any petitions from groups of States requesting formation of a visibility transport commission.

Section 169B(f) called for EPA to establish a visibility transport commission for the region affecting visibility of the Grand Canyon National Park. The purpose of this commission was to assess scientific and technical information pertaining to adverse impacts on visibility at the Park from existing and projected growth in emissions. The statute specifically called for a report to EPA recommending measures to remedy such impacts and to address long term strategies for addressing regional haze.[18] In 1991, EPA established the GCVTC ,[19] and the GCVTC issued its final report in June 1996.[20] The recommendations of the

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[17] U.S. EPA, "Effects of the 1990 CAA Amendments on Visibility in Class I Areas; An EPA Report to Congress," October 1993 (EPA-452/R-93-014).

[18] CAA section 169B(d)(2)(C)

[19] 56 FR 57522, November 12, 1991.

[20] GCVTC, "Recommendations for Improving Western Vistas", Report to the U.S. EPA, June 10, 1996 (hereafter "GCVTC Report").

GCVTC and their incorporation as potential SIP requirements into the final rule, are discussed in greater detail in unit IV of the preamble.

Finally, section 169B(e) calls for the Administrator to consider past research and the recommendations of visibility transport commissions in carrying out the "regulatory responsibilities under section 169A, including criteria for measuring 'reasonable progress' toward the national goal."[21] The EPA is required by the CAA to meet these regulatory responsibilities within 18 months of receiving the GCVTC report. Today's final rule fulfills EPA's responsibility under section 169A, pending since 1980, to put in place a national regulatory program that addresses both reasonably attributable and regional haze visibility impairment. Today's action is also EPA's response to the GCVTC report as anticipated by section 169B.

D. Sources of Scientific Information and Policy Recommendations on Regional Haze

In developing today's revisions to the visibility regulations, EPA has taken into account a significant body of scientific information and policy recommendations on visibility issues that have been developed over more than 20

[21] CAA section 169B(e)(1).

years. This unit highlights key sources of information upon which the final regional haze rule is based.

For many years, visibility impairment has been considered the "best understood and most easily measured effect of air pollution."[22] Visibility degradation has also been recognized as an indicator of multiple human-health effects and environmental effects resulting from air pollution all over the world.[23] Visibility conditions have been monitored and evaluated for many years, using airport visibility data collected from the 1940's to the present.[24]

In October 1979, EPA published a Report to Congress describing the State of the science on visibility.[25] The report, required under section 169A(a)(3), described available methods for visibility monitoring, modeling, and assessment of strategies to make progress toward the

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[22] Council on Environmental Quality, Visibility Protection for Class I Areas: the Technical Basis Washington, DC. 1978.

[23] National Research Council, Committee on Haze in National Parks and Wilderness Areas, *Protecting Visibility in National Parks and Wilderness Areas*, National Academy Press, 1993, p. 23.

[24] National Acid Precipitation Assessment Program (NAPAP), Office of the Director, Acid Deposition: State of Science and Technology. Report 24, Visibility: Existing and Historical Conditions - Causes and Effects," Washington, DC, 1991

[25] U.S.EPA, Protecting Visibility: An EPA Report to Congress; Office of Air Quality Planning and Standards, EPA-450/5-79-008, October 1979.

national goal. This report was developed in advance of the 1980 visibility regulations. As noted above, EPA deferred action on regional haze until monitoring techniques, modeling capabilities, and the understanding of the pollutants affecting visibility were improved. In 1986, the IMPROVE (Interagency Monitoring of Protected Visual Environments) visibility monitoring program was initiated in 30 Class I areas. The IMPROVE program has been coordinated through a cooperative, multiagency approach with participation by EPA, the FLMs, and States. Through the IMPROVE program, significant progress has been made in understanding the effect of various pollutants on current visibility conditions and trends, in developing well-accepted monitoring protocols, and in developing a sound approach for calculating light extinction values from aerosol and humidity data. The IMPROVE program has issued two major reviews of the monitoring data collected to date,[26] and numerous technical papers have been developed using data collected by the network.

[26] Sisler, J. et al., "Spatial and Seasonal Patterns and Long Term Variability of the Chemical Composition of the Haze in the U.S.: An Analysis of Data from the IMPROVE Network," Fort Collins, CO, Cooperative Institute for Research in the Atmosphere, Colorado State University, 1996. Sisler, J., et al., "Spatial and Temporal Patterns and the Chemical Composition of the Haze in the United States: An Analysis of Data From the IMPROVE Network," 1988-1991, Fort Collins, CO, 1993.

In addition, in 1996 EPA began to include a chapter on visibility trends, based on data collected throughout the IMPROVE network, in the National Air Quality and Emissions Trends Report in 1996.[27] Data from 1988 to the present are analyzed for the best 20 percent, middle 20 percent, and worst 20 percent days of the annual distribution, and aggregated for eastern and western sites. Annual summary data are also presented for each individual site in an appendix.

Visibility research continued throughout the 1980's and is documented in many published articles and the proceedings of three major visibility conferences.[28] In addition, the National Acid Precipitation Assessment Program (NAPAP) completed a comprehensive review of the state of the science

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[27] U.S. EPA, National Air Quality and Emissions Trends Report, 1996, Office of Air Quality Planning and Standards, EPA 454/R-97-013, January 1998. See also U.S. EPA, National Air Quality and Emissions Trends Report, 1997, Office of Air Quality Planning and Standards, EPA 454/R-98-016, January 1999.

[28] Atmospheric Environment, Proceedings of EPA Symposium on "Plumes and Visibility - Measurements and Model Components," November 1980, Atmos. Environ., 15:1785-2646. See also Bhardwaja, P.J., ed., Visibility Protection: Research and Policy Aspects. Transactions of APCA Specialty Conference, September 1986, Grand Tetons National Park, WY. Air Pollution Control Assoc., Pittsburg, PA, 1987. See also Mathai, C.V., ed., Visibility and Fine Particles. Transactions of AWMA specialty conference, October 1989, Estes Park, CO. Air and Waste Management Assoc., Pittsburgh, PA. 1990.

of visibility in 1991.[29] This peer-reviewed report reached a number of important conclusions, including: 1) light scattering is dominated by fine particles; 2) sulfates are the dominant source of light extinction in the East, and one of several major sources of extinction in the West; 3) rural visibility varies significantly between the East and West; 4) average natural visibility conditions are 150 kilometers visual range (9.6 deciviews) in the east and 230 kilometers visual range (5.3 deciviews) in the west; and 5) haze trends in the eastern United States have been dominated by sulfur emission trends since the late 1940's.

The NAS 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. The 1993 report by this Committee contributed significantly to the state of the science regarding regional haze visibility impairment.[30] The Committee issued several important

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[29] National Acid Precipitation Assessment Program (NAPAP), Office of the Director, Acid Deposition: State of Science and Technology, Report 24, "Visibility: Existing and Historical Conditions - Causes and Effects," Washington, DC, 1991.

[30] National Research Council, NAS Committee on Haze in National Parks and Wilderness Areas, *Protecting Visibility in National Parks and Wilderness Areas*, National Academy Press, 1993.

conclusions in the report, including: 1) current scientific knowledge is adequate and control technologies are available for taking regulatory action to address regional haze; 2) progress toward the national goal will require regional programs that operate over large geographic areas and limit emissions of pollutants that can cause regional haze; 3) a program to address regional haze visibility impairment that focuses solely on determining the contributions of individual emission sources to such visibility impairment is likely to fail, and instead, strategies should be adopted to consider simultaneously the effect of many sources a regional basis; 4) visibility impairment can be attributed to emission sources on a regional scale through the use of several kinds of models; 5) visibility and control policies might need to be different in the West than the East; 6) efforts to improve visibility within Class I areas will benefit visibility outside these areas and could help alleviate other types of air quality problems as well; 7) achieving the national visibility goal will require a substantial, long term program; and 8) continued progress toward this goal will require a greater commitment toward atmospheric research, monitoring, and emissions control research and development.

Also in 1993, EPA developed its Report to Congress on the projected effects on visibility in Class I areas due to

implementation of the 1990 CAA Amendments.[31] The report concluded that conditions on the worst visibility days are expected to improve by approximately 3 deciviews by 2010 across the most impaired portions of the eastern United States Most of this improvement is expected in the 1995-2005 timeframe due to sulfur dioxide reductions under the acid rain program. In the southwestern United States, the visibility change was predicted to be less than 1 deciview in most Class I areas except San Gorgonio Wilderness (which is located downwind of Los Angeles), for which a 1-2 deciview improvement is expected.

As required by section 169B(a)(2) of the CAA, EPA issued a report in 1995 on interim findings on the status of visibility research completed since 1990.[32] This report reviewed four major visibility related reports published since 1990,[33] provided citations of published research papers, and summarized research under way by the GCVTC, four

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[31] U.S. EPA, Effects of the 1990 Clean Air Act Amendments on Visibility in Class I Areas: An EPA Report to Congress, Office of Air Quality Planning and Standards, EPA-452/R-93-014, October 1993.

[32] United States EPA, Interim Findings on the Status of Visibility Research, Office of Research and Development, February 1995.

[33]Three of these reports have already been mentioned in this section: the 1993 NAS report, the 1993 IMPROVE report (Sisler et al.), and the 1993 EPA Report to Congress. The fourth major report reviewed was the 1992 NAPAP Report to Congress.

Federal agencies, and the Electric Power Research Institute. As noted above, the GCVTC issued a report in June 1996 containing recommendations for protecting visibility at 16 Class I areas on the Colorado Plateau. Based on EPA's discretionary authority under section 169B(c), it expanded the scope of the GCVTC,

> to include additional Class I areas in the vicinity of the Grand Canyon National Park---what is sometimes referred to as the 'Golden Circle' of parks and wilderness areas. This includes most of the national parks and national wilderness areas of the Colorado Plateau.[34]

The GCVTC was charged with assessing information about visibility impacts in the region and making policy recommendations to EPA to address such impacts. The CAA called for the GCVTC to assess studies conducted under section 169B as well as other available information "pertaining to adverse impacts on visibility from potential or projected growth in emissions for sources located in the . . . Region," and to issue a report to EPA recommending what measures, if any, should be taken to protect visibility.[35] The CAA specifically provided for the GCVTC's report to address the following measures: 1) the establishment of clean air corridors,[36] in which additional

[34] 56 FR 57523.

[35] CAA Section 169B(d).

restrictions on increases in emissions may be appropriate to protect visibility in affected Class I areas; 2) the imposition of additional new source review requirements in clean air corridors; and 3) the promulgation of regulations addressing regional haze.[34]

In unit IV of the proposal, EPA discusses the major recommendations of the GCVTC. The GCVTC's recommendations have components that contemplate implementation through a combination of actions by EPA, other Federal agencies, States and tribes in the region, and voluntary measures on the part of public and private entities throughout the region. The GCVTC's recommendations also distinguish between recommended actions and policy or strategy options for consideration. Unit IV addresses how EPA took these recommendations, as well as the body of technical information developed by the GCVTC, into account in developing the final rule.

Response to Comments. Some commenters on the regional haze proposal suggested that EPA had not provided an adequate scientific or legal justification for developing a regional haze program. The commenters asserted that the science of regional haze is not understood well enough to

[34] A clean air corridor is defined as a region that generally brings clear air to a receptor region, such as the Class I areas of the Golden Circle.

develop regulations at this time. In addition, some commenters claimed that EPA has not provided adequate technical guidance for implementation of the rule, and that providing such guidance is a legal prerequisite to promulgating a regional haze rule. The EPA does not agree with these claims.

First, EPA believes it has relied upon a substantial amount of scientific evidence to support development of the regional haze program. Many of the important studies, reports, and other scientific and technical information on which the regional haze rule is based are referenced earlier in this section. In particular, the NAS Committee on Haze in National Parks and Wilderness Areas concluded that "Current scientific knowledge is adequate and control technologies are available for taking regulatory action to improve and protect visibility." Thus, EPA believes that its decision to move forward with promulgation of the regional haze program is reasonable, particularly in light of the fact that the Agency's obligation to address regional haze originated more than 20 years ago with passage of the 1977 CAA Amendments.

Second, as discussed in the response to comments, today's rule provides the States with the necessary guidelines to implement a regional haze program. The EPA believes that the supposition that all technical guidance

associated with a program be developed before a rule can be promulgated is unfounded. The EPA recognizes the importance of timely implementation guidance and is committed to providing such guidance, as appropriate, for the regional haze program.

The EPA does not interpret sections 169A and 169B as requiring all technical guidance to be issued by the Agency before the rule is finalized. The EPA is committed to working closely with the States and other interested parties in developing effective guidance documents within a reasonable period of time after promulgation of the final regional haze rule.

E. Relationship to Secondary NAAQS for PM

Today's final rule is an important element in EPA's overall approach to protecting visibility under the CAA. In July 1997, EPA established national secondary ambient air quality standards (NAAQS) for $PM_{2.5}$ as part of its final decision on revision of the existing NAAQS for particulate matter under section 109(d) of the CAA.[35] The secondary standards were based on EPA's determination that the levels selected were "requisite to protect the public welfare" against visibility impairment on a nationally uniform basis as provided in section 109(b). Consistent with the purposes

[35] 62 Fed. Reg. 38652 (July 18, 1997).

of section 169A, however, EPA recognized that such nationally uniform standards would not eliminate all visibility impairment in all parts of the country.[36] The visibility impacts remaining in Class I areas are addressed by today's rule.

Today's rule has additional benefits, as EPA expects the regional strategies implemented as part of the regional haze program to improve visibility outside of Class I areas as well. Thus, the regional haze program should contribute to the improvement of local visibility impacts outside of Class I areas that may persist after attainment of the secondary standards.

F. Regional Planning and Integration with Programs to Implement the NAAQS for Ozone and Particulate Matter

The regional haze program is being promulgated in a manner that facilitates integration of emission management strategies for regional haze with the implementation of programs for new NAAQS for ozone and PM. This is being done because of the existing scientific evidence that these air quality problems have common precursor pollutants, emission sources, atmospheric processes, spatial scales for transport, and geographic areas of concern. Because of the key role of regional pollutant transport in contributing to

[36] See section 160(1); H.R.Rep. No. 95–294 at 205 (1977).

haze at Class I areas, most of which are in remote locations, the regional haze program recognizes the value of multistate coordination for regional haze program planning and implementation. Consistent with the recommendations of the Clean Air Act Advisory Committee, Subcommittee on Ozone, Particulate Matter, and Regional Haze Implementation Programs,[37] EPA strongly encourages States to undertake multistate regional planning efforts addressing regional haze in a way that coordinates technical analyses and strategy development with the NAAQS to the maximum extent possible. Examples of ongoing coordination among States to address visibility issues include the Western Regional Air Partnership (WRAP) and the Southern Appalachian Mountain Initiative.

The EPA believes that States (and tribes, at their discretion), in partnership with other interested stakeholders, should consider conducting future regional air quality planning efforts to address the implementation of the ozone and PM NAAQS and regional haze program. We encourage States to continue to work together to establish common protocols and approaches for emissions inventory development, emissions tracking, application of regional

[37] Subcommittee for Ozone, Particulate Matter, and Regional Haze Implementation Programs, Final Report on Subcommittee Discussions," May 1998.

models, and development of effective emission reduction strategies.

The EPA plans to participate early and actively in regional planning efforts. The EPA recognizes that we must provide early input on issues and to make our views known as issues arise. The EPA has a responsibility to independently review the adequacy of implementation plans in the public rulemaking process and to consider all public comments received on a plan in determining if it meets applicable requirements. However, it is equally important that EPA be open in letting participants know of our views and concerns throughout the process.

The EPA will soon issue final guidance on such regional planning efforts for the purposes of implementing the ozone, particulate matter, and regional haze implementation programs.[38] Also, as a part EPA's 1999 fiscal year budget, Congress provided 4 million dollars to support regional planning activities, EPA is currently involved with the States in a process to define the appropriate size and composition of regional planning bodies. This guidance will provide a discussion of several important issues related to regional planning efforts. These issues include:

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[38] Draft "Implementation Guidance for the Ozone and Particulate Matter NAAQS and Regional Haze Program." EPA's internet site for an electronic version of this guidance: http://www.epa.gov/ttn/oarpg/t1pgm.html.

- taking credit for emissions reductions in other States;
- important principles for future regional planning efforts;
- the technical assessment process; and
- the strategy development process.

Some important principles discussed in the guidance for conducting regional planning efforts include the following points.

- Regional planning efforts should be a product of State (and, at the discretion of any tribe, tribal) leadership and, thus, should be led by States (and tribes), not EPA. Representatives should have the authority to speak for their organizations.
- States (and tribes at their discretion) should be prepared to make strong, early commitments to implementing the outcome of the regional process to ensure that SIP submittal dates are met.
- Participants in regional planning efforts should set up a work plan to carry out their work. The work plan should contain clearly stated products of the process, dates for completion of those products and mechanisms for funding the needed analyses.
- The technical assessment process should include steps for problem definition, development of emissions

inventories, and development of tools to evaluate strategy alternatives.

! In the strategy development process, participants should strive to develop a consensus about 1) the set of regional emissions reductions strategies needed to attain the NAAQS or make “reasonable progress” toward the national visibility goal in Class I areas, and 2) the degree to which each State and relevant source category should be required to reduce emissions to implement the recommended strategies.

III. Discussion of National Program Requirements and Response to Comments

A. Scope of Rule--Extending Coverage to All States

In the regional haze proposal, EPA proposed to amend section 51.300(b)(3) to extend coverage to all States (excluding certain territories) for the purpose of addressing regional haze visibility impairment. This approach differed from the 1980 visibility regulations for “reasonably attributable” impairment, which required the 35 States and the Virgin Islands containing Class I areas to submit SIP revisions and to revise them periodically to assure reasonable progress toward the national visibility goal. Thus, under the proposal, the following additional States and the District of Columbia would be required to

submit visibility SIPs: Nebraska, Kansas, Iowa, Wisconsin, Illinois, Indiana, Ohio, Mississippi, New York, Pennsylvania, Massachusetts, Rhode Island, Connecticut, and Maryland. The territories of Puerto Rico, Guam, American Samoa, and the Northern Mariana Islands were not included because their distance from any Class I area significantly exceed the distance that their emissions could be expected to be transported in order to contribute to visibility impairment in any Class I area. However, Hawaii, Alaska, and the Virgin Islands would be subject to the regional haze provisions because of the potential for emissions from sources within their borders to contribute to regional haze impairment in Class I areas also located within their own jurisdiction.

In the proposal, EPA also recommended that all States initially participate in regional planning efforts to more precisely characterize which States are contributing to visibility impairment in other States, as well as the magnitude of such contributions. States could then develop strategies for making reasonable progress in Class I areas throughout the region. The EPA noted that as a result of this process, all States may not have to adopt control strategies. At the same time, EPA cited the 1993 NAS report, which observed that the requirement for a State to revise its implementation plan if it “may reasonably be

anticipated" to contribute to visibility impairment indicates that Congress intended that "the philosophy of precautionary action should apply to visibility protection as it applies to other areas [such as the NAAQS]." Thus, EPA proposed that, at a minimum, all States should be required to develop visibility SIPs in order to "prevent any future impairment" as called for by the national goal in section 169A(a)(1).

The EPA received a number of comments on the proposed applicability provisions. Many commenters approved of EPA's approach to require SIPs from all States. Those who did not agree with the scope of the program provided a number of reasons for their opposition. Some commenters recognized the need for a regional haze program, but stated that EPA must first conduct or review additional scientific analyses in order to provide justification for requiring additional States to submit visibility SIPs. Other commenters felt that in the proposed applicability provisions, EPA exceeded its statutory authority by extending the regional haze program to States that have not been demonstrated to "cause or contribute" to visibility impairment. Some commenters suggested that EPA rely on States with Class I areas to engage nearby States, as appropriate, in regional planning efforts. Some commenters in States containing Class I areas suggested that, for their particular Class I areas, there

was no demonstrated visibility problem. They asserted that because visibility levels should already be deemed acceptable, there was no need for a regional haze program in their States. Other commenters felt that EPA should include specific criteria (e.g., distance, emissions, and visibility impact cutoffs) for excluding States or geographic areas from consideration as contributing to regional haze visibility impairment.

Consistent with the proposal, EPA has concluded in today's rule that all States contain sources whose emissions are reasonably anticipated to contribute to regional haze in a Class I area and, therefore, must submit regional haze SIPs. The rationale for this finding is discussed in more detail below.

In making this finding, EPA considered three factors: 1) the specific statutory language in the CAA, 2) the weight of evidence demonstrating long-range transport of fine particulate pollution that affects visibility in Class I areas, and 3) current monitored conditions in Class I areas across the country. The EPA's consideration of each of these factors is discussed below.

Two key provisions in section 169A support EPA's finding that all States must develop SIPs for regional haze. Section 169A(b)(2) requires EPA to promulgate regulations to require SIPs from those States where the emissions "may

reasonably be anticipated to cause or contribute to any impairment of visibility" in a mandatory Class I Federal area. The EPA believes that this provision does not require the Agency to provide absolute certainty regarding the effect of emissions from the State on visibility in a particular Class I area.

The Ninth Circuit has interpreted the language, "may reasonably be anticipated to cause or contribute to any impairment of visibility," in a case involving identical language in section 169A(b)(2)(A) relating to BART.[39] The EPA believes that the court's interpretation of this phrase may be appropriately used in regard to program applicability as well. In its decision, the court found that the language "may reasonably be anticipated to cause or contribute" establishes an "extremely low triggering threshold" for requiring a source to control emissions, adding that "the NAS correctly noted that Congress has not required ironclad scientific certainty establishing the precise relationship between a source's emission and resulting visibility impairment. . . . "[40] In considering whether additional States should be subject to the visibility program, EPA believes the court's reasoning supports adoption of the

[39] Central Arizona Water Conservation District v. EPA, 990 F.2d 1531 (1993).

[40] 990 F.2d at 15__.

predicate requirement that States develop the necessary provisions in their implementation plans to determine whether and to what extent control of emissions from sources is needed. That is, given that the court believed this "low triggering threshold" was sufficient to require a source to control its emissions under BART, EPA believes it is reasonable that a similarly low or even lower threshold applies to whether States should be required to engage in air quality planning and analysis as a prerequisite to determining the need for control of emissions from sources within their State. The EPA believes this is particularly appropriate since the requirement for SIPs does not mandate the actual control of emissions from any source without further technical analysis by the State. Accordingly, EPA believes the concept of an "extremely low triggering threshold" can also apply in determining which States should submit SIPs for regional haze.

Section 169A(a)(1) sets forth a national goal of "the prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution." Thus, in addition to requiring a program to reduce existing impairment, the CAA requires SIPs to be established in order to prevent future impairment. This preventative component of the national goal requires that States have the framework in place to

address future growth in emissions from new sources or other activities that could impair visibility. For this reason, the EPA does not believe that it is appropriate to establish criteria for excluding States or geographic areas from consideration as potential contributors to regional haze visibility impairment.

As noted in the proposal, EPA is not specifying in this final rule what specific control measures a State must implement in its initial SIP for regional haze. That determination can only be made by a State once it has conducted the necessary technical analyses of emissions, air quality, and the other factors that go into determining reasonable progress. As discussed in section II(F), because of the regional, multistate nature of visibility impairment in Class I areas,[41] EPA recommends that these analyses and the determination of the extent of emissions reductions needed from individual States be developed and refined through multistate planning efforts using the best available technical tools, such as regional-scale modeling. The EPA also recommends the coordination of resulting strategies for regional haze with strategies needed to attain the $PM_{2.5}$ NAAQS. The EPA anticipates that as a result of the more

[41] Refer to Unit II of this final rule for additional background on the long-range transport of pollution contributing to regional haze.

refined analyses required by this rule, some States may conclude that control strategies specifically for protection of visibility are not needed at this time because the analyses may show that existing measures are sufficient to meet reasonable progress goals. The EPA is requiring States to document their analyses, including any consultations with other States in support of their conclusions that further controls are not needed at this time. The EPA believes that there is more than sufficient evidence to support our conclusion that emissions from each of the 48 contiguous States may be reasonable anticipated to cause or contribute to visibility impairment in a Class I area.

As stated in EPA's proposal, a large body of evidence demonstrates that long-range transport of fine PM contributes to regional haze and other related effects such as acid rain. In the preamble to the proposal and in the relevant docket, EPA cited numerous studies that contribute to this body of evidence.[42] (As discussed in Unit II, Background Information on Regional Haze.) Indeed, EPA recognized the role of long-range transport in relation to

[42] *See* July 29, 1997 memorandum to regional haze docket A-95-38, "Supporting Information for Proposed Applicability of Regional Haze Regulations," by Richard Damberg, EPA Office of Air Quality Planning and Standards.

visibility impairment 20 years ago in its 1979 Report to Congress on visibility.[43]

Among the more important studies on which EPA relied are the 1990 report from the NAPAP, the 1993 (NAS) report Protecting Visibility in National Parks and Wilderness Areas, EPA studies using the regional acid deposition model (RADM), the 1996 GCVTC report Recommendations for Improving Western Vistas, and two contractor reports prepared for EPA.[44] All of these reports are available in the docket and referenced and discussed in EPA's proposal and in an additional memorandum to the docket. The NAPAP report included a comprehensive technical review of historical visibility trends.[45] The NAS report found that the range of fine particle transport is on the order of hundreds or

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[43] Protecting Visibility, an EPA Report to Congress, EPA-450/5-79-008, October 1979.

[44] Latimer and Associates, *Particulate Matter Source-Receptor Relationships Between All Point and Area Sources in the United States and PSD Class I Area Receptors*, Report prepared for EPA Office of Air Quality Planning and Standards, September 1996. ENVIRON International Corporation, *Development of Revised Federal Class I Area Groups in Support of Regional Haze Regulations*, Report prepared for EPA Office of Air Quality Planning and Standards, September 1996.

[45] National Acid Precipitation Assessment Program (NAPAP), Office of the Director. Acid Deposition: State of the Science and Technology. Report 24, Visibility: Existing and Historical Conditions - Causes and Effects, Washington, D.C, 1991

thousands of kilometers.[46] Analyses using the RADM have estimated that sulfate and nitrate deposition receptors are influenced by sources located up to 600-800 kilometers away.[47] In its deliberations and in its final report, the GCVTC acknowledged the role of long-range transport from sources and activities located across a very large geographic area, and its effect on the Class I areas on the Colorado Plateau.[48]

Finally, two contractor modeling reports prepared for EPA provided information that preliminarily demonstrated that each State not having a Class I area had emissions contributing to impairment in at least one downwind Class I area. Some State commenters asserted that the contractor reports referenced in the proposal show relatively low contributions from all or part of their States toward visibility impairment in a nearby Class I area. As a result, these commenters suggested that EPA had sufficient information to reach a conclusion that all or part of their

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[46] National Research Council, *Protecting Visibility in National Parks and Wilderness Areas*, National Academy Press, Washington, D.C., 1993.

[47] Dennis, Robin L. "Using the Regional Acid Deposition Model to Determine the Nitrogen Deposition Airshed of the Chesapeake Bay Watershed," in Atmospheric Deposition to the Great Lakes and Coastal Waters, edited by Joel Baker, 1996.

[48] GCVTC, Recommendations for Improving Western Vistas, June 1996.

States could be excluded from the regional haze program. The EPA disagrees with these comments for two reasons.

First, the EPA did not base its proposed applicability provisions only on the referenced contractor reports. The EPA based its decision on the assessments provided by these reports as well as a number of other studies and sources of information. Second, as explained above, EPA believes that all States must have a visibility SIP to prevent, at a minimum, future impairment of visibility. While EPA agrees that portions of some States may not need to implement additional measures, at this time, to improve visibility impairment in any Class I area, the EPA believes that more refined future assessments will be needed to support such a finding. Additionally, the EPA believes that a State wishing to demonstrate that it does not contribute to visibility impairment in any Class I area will need to provide information showing that it has consulted with other potentially affected States to assist EPA in assuring that the State’s demonstration is not contradicted by evidence presented by other States.

Current monitoring information for Class I areas shows that all of the monitored sites in the central and eastern parts of the country have visibility impairment levels exceeding estimated natural conditions for the 20 percent most impaired days, some by more than 20 deciviews.

Although the degree of impairment varies, the data demonstrate that no existing site has reached the goal in section 169A(a)(1) of the CAA for "remedying . . . any existing impairment of visibility."[49]

In light of this finding, EPA disagrees with the commenter who asserted that because visibility levels in its State are already "acceptable," there is no need for the State to implement a regional haze program. The section 169A national goal of the visibility program, a condition of no human-caused impairment, does not provide for judgments of acceptable visibility levels which are poorer than natural conditions in Class I areas. Through adoption of section 169A(a)(1), Congress established natural visibility conditions as the overall goal.

The data also show that in the monitored locations in the Central and eastern United States, sulfate is the key contributor to visibility impairment, responsible for between 45-90 percent of light extinction due to aerosols on the 20 percent most impaired days. This fact is significant

[49] Sisler, J. et al., Spatial and Seasonal Patterns and Long Term Variability of the Chemical Composition of the Haze in the United States: An Analysis of Data from the IMPROVE Network, Fort Collins, CO, Cooperative Institute for Research in the Atmosphere, Colorado State University, 1996. See also Sisler, J., et al., Spatial and Temporal Patterns and the Chemical Composition of the Haze in the United States: An Analysis of Data from the IMPROVE Network, 1988-1991, Fort Collins, CO, 1993.

because the broad, regional scale of long-range transport of sulfate has already been acknowledged in many studies done for the acid rain program. Based on these data, it appears that although the acid rain program is expected to improve visibility by approximately 3 deciviews in the most impaired Class I areas in the eastern United States by 2005,[50] further regional reductions in SO_2 emissions may be needed after the acid rain program is complete to assure continued visibility improvement toward the national goal. Thus, EPA finds it is reasonable to require SIPs from the States without Class I areas which are located in the central and eastern parts of the United States since many, if not all, are expected to have sources contributing to regional loadings of SO_2 emissions, even after implementation of the acid rain program is completed.

For all of the reasons stated above, EPA has concluded in today's final rule that EPA's statutory authority and scientific evidence are sufficient to require all States to develop regional haze SIPs to ensure the prevention of any future impairment of visibility, and to conduct further analyses to determine whether additional emission reduction

[50] United States EPA, "Effects of the 1990 CAA Amendments on Visibility in Class I Areas; An EPA Report to Congress," October 1993 (EPA-452/R-93-014).

measures are needed to ensure reasonable progress in remedying existing impairment in downwind Class I areas.

B. Timetable for Submitting the First Regional Haze SIP.

This final rule establishes a schedule setting forth deadlines by which the States must submit their first regional haze SIPs and subsequent revisions to that first SIP. In this unit, we discuss the deadlines for the first regional haze SIP, the concerns raised in comments regarding these deadlines, and recent legislation affecting the deadlines. The requirements for periodic revisions to this first regional haze SIP are discussed below in unit III.J.

The proposed rule, consistent with section 169B(e)(2) of the CAA, would have required States to submit revisions to their SIP to address regional haze within 12 months of the effective date of the rule. We had intended that these 12-month SIP submittals serve as program planning SIPs in which the States would review existing regulatory authorities and provide the framework for a number of future actions.

Commenters expressed the view that 12 months was an insufficient time period to meet the proposed requirements for the program planning SIP. Moreover, commenters were concerned that the 12-month SIP requirement was not well

coordinated with similar program planning for the new $PM_{2.5}$ standard.

After the close of the comment period for the July 1997 proposal, Congress passed the Transportation Equity Act for the 21st Century (TEA-21), Pub.L.105-178. The TEA-21 superseded the statutory requirement for a 12-month SIP deadline and established a specific schedule for regional haze SIP submissions. In a September 3, 1998 notice of availability, EPA provided the public with an opportunity to comment on how the regional haze rule should address the TEA-21 requirements.[51]

The TEA-21 provisions establish a timetable for the regional haze SIPs by first creating certain deadlines for $PM_{2.5}$ monitoring and area designations, and then by linking those deadlines to further deadlines for the regional haze program. The TEA-21 amendments, in section 4102(a), require EPA to fund a $PM_{2.5}$ monitoring network. In section 4102(b), EPA and States are required to put this network in place by no later than December 31, 1999.

Section 4102(c)(1) of TEA-21 establishes deadlines for States to use the data collected by the network for purposes of formally designating areas as attaining the $PM_{2.5}$ standard

[51] 63 FR 46952.

or as nonattainment or unclassifiable. Section 4102(c)(1) states:

> (1) The Governors shall be required to submit designations referred to in section 107(d)(1) of the CAA for each area following promulgation of the July 1997 $PM_{2.5}$ national ambient air quality standard within 1 year after receipt of 3 years of air quality monitoring data performed in accordance with any applicable Federal reference method for the relevant areas.

Section 4102(c)(2) of TEA-21 contains the following language which links the timing requirements for the visibility program to the $PM_{2.5}$ designation process:

> (2) For any area designated as nonattainment for the July 1997 $PM_{2.5}$ national ambient air quality standard in accordance with the schedule set forth in this section, notwithstanding the time limit prescribed in paragraph (2) of section 169B(e) of the CAA, the Administrator shall require State implementation plan revisions referred to in such paragraph (2) to be submitted at the same time as State implementation plan revisions referred to in section 172 of the CAA implementing the revised national ambient air quality standard for fine particulate matter are required to be submitted. For any area designated as attainment or unclassifiable for such standard, the Administrator shall require the State implementation plan revisions referred to in such paragraph (2) to be submitted 1 year after the area has been so designated. The preceding provisions of this paragraph shall not preclude the implementation of the agreements and recommendations set forth in the GCVTC Report dated June 1996.

To accompany the statutory changes contained in the TEA-21 law, Congress released a Conference Report. With respect to the visibility provisions of TEA-21, the Conference Report states:

> The Conferees recognize that the Regional Haze regulation has not been finalized and the Administrator of the Environmental Protection Agency (EPA) is still considering the views of various stakeholders. The Conferees agree with EPA's public statements that the schedule for the State Implementation Plan due pursuant to section 169B(e)(2) of the ...[Clean Air].. CAA should be harmonized with the Schedule for State Implementation Plan submissions required for $PM_{2.5}$. ambient air quality standard promulgated in July, 1997.[52]

This new statutory language has two effects. First, it supercedes the requirement for EPA to require States to submit SIPs within 12 months of the promulgation of today's rule. Second, it spells out a timetable for SIP revisions that is linked to the dates of attainment/nonattainment designations for $PM_{2.5}$. It is important to note that the timetable is based on the designation of **areas** within a State. Thus, under the legislation, one State could have multiple SIP submission deadlines depending on the dates of designation of each area within the State. This issue, and how EPA intends to address it, is further discussed later in this unit.

According to a Presidential memorandum dated July 16, 1997, the EPA and States must collect 3 years of monitoring data in order to have a sufficient basis for designations.

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[52] H.R. Conf. Rep. No. 550, 105th Cong., 2d. Sess. 519 (1998), *reprinted in* 1998 U.S.C.C.A.N., No. 6 at 196.

This point is reiterated in TEA-21.[53] Routine collection of monitoring data begins in 1999. Hence, we expect the requirements of TEA-21, section 4102(c)(1), to result in the following:

--Submissions of designation requests by States. States must submit designations with 1 year of the date that 3 years of $PM_{2.5}$ data are available. Because the earliest date that we expected widespread monitoring for $PM_{2.5}$ to begin is January 1999, and the latest date is December 31, 1999, we expect 3 years of data to be collected between December 31, 2001 for most areas and no later than December 31, 2002 for the remaining areas. Taking into account additional time (not more than 6 months) for quality assurance and certification of the data, we expect 3 years of data to be available for States to use for designations between July 2002 and July 2003. In the TEA-21 amendments, States have up to 1 year to submit designations. Thus, we expect that the required date for submittal of designations generally will occur between July 2003 and July 2004.[54]

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[53] See TEA-21, Section 4102(c)(1).

[54] We expect that some States will want to move expeditiously with some designations, leading to submissions and final action on some areas as early as late 2002 or early 2003. Where this is the case, this would lead to earlier regional haze SIP submittal deadlines as well.

-- EPA action on State designations: The EPA is required to act upon the designations no later than 1 year after the date States are required to submit the designations, but not later than December 31, 2005 in any case. If States submit their designations between July 2003 and 2004, EPA would be required to designate areas between July 2004 and July 2005.

For areas designated as attainment or unclassifiable, the TEA-21 amendments require that States must submit SIPs for regional haze within 1 year after EPA publishes the designations. As a result, for these areas, regional haze SIPs are likely to be due generally between July 2005 and July 2006.

For areas designated as nonattainment for fine particulate matter, the TEA-21 amendments require States to submit SIP revisions addressing regional haze "at the same time as States submit SIPs as required by section 172 of the CAA implementing the July 1997 revision to the national ambient air quality standard for fine particulate matter." Section 172(b) of the CAA requires SIPs no later than 3 years after EPA publishes the nonattainment designation. If EPA designates areas nonattainment between July 2004 and July 2005, the regional haze SIPs for areas designated as nonattainment and the $PM_{2.5}$ nonattainment SIPs would both be due no later than July 2007 and July 2008.

The date for startup of $PM_{2.5}$ monitoring may vary in different parts of a given State. Accordingly, the EPA expects that States may not be able to submit designation requests at the same time for the entire State. Rather, the EPA expects that it is possible that individual "areas" within a given State may be designated at different times. Even if areas were all designated at the same time, in many States some areas will likely be designated attainment with others designated nonattainment. In either case, the TEA-21 deadlines would require separate regional haze SIPs for each of these areas to be submitted at different times.

While the language in TEA-21 establishing the timetable for submission of regional haze SIPs is generally clear, the transportation legislation does not address the situation where States are participating in a regional planning effort that incorporates numerous areas. On its face, TEA-21 requires the submission of separate regional haze SIPs on an area-by-area basis with varying deadlines that could range over a period of several years. As noted above, however, regional haze is the result of emissions from a number of sources located over a broad geographic area. Because of the long-range transport of pollutants causing regional haze, EPA believes that well-coordinated regional planning efforts are needed to make progress toward natural visibility conditions. As EPA noted in the September 5,

1998 notice of availability, we do not believe that Congress intended to inhibit regional planning efforts by requiring area-by-area submittals. In light of this, EPA requested comment on incorporating an optional approach into the final rule to facilitate regional planning.

The optional approach EPA described in the notice of availability would allow States which commit to participating in regional planning efforts to postpone addressing certain of the requirements of the regional haze program. Under this approach, States would have the option to first submit SIPs which contain commitments to specific integrated regional planning efforts but which do not set forth control strategies. States committing to regional planning would subsequently submit SIP revisions containing control strategies for attainment, unclassifiable, and nonattainment areas at the same time. This would allow multiple areas within a single planning region to have coordinated deadlines for regional haze control strategies. In the supplemental notice, we noted that this approach could have the effect of delaying control strategy plan submittal dates for some areas, but we believe that such an option will support more effective coordination between the $PM_{2.5}$ and regional haze programs, will support coordinated regional planning for both programs, and will be consistent with the statement of congressional intent.

Some commenters argued that TEA-21 does not authorize EPA to defer implementation of the regional haze program in this way. The basis for this argument is the claim that the 1-year deadline in section 169B(e)(2) applies only to regulations promulgated pursuant to the report of a visibility transport commission. These commenters claim that EPA is obligated under section 169A to provide for more expedited implementation of measures to assure reasonable progress.

The regulations made final today are issued under the authority of CAA sections 169A *and* 169B. As discussed in unit II.E above, EPA, in 1980, explicitly deferred issuing regulations to address regional haze until our scientific and technical knowledge was better developed. Congress, in 1990, amended the CAA by adding section 169B. This section authorizes the establishment of visibility transport commissions which, among other things, must issue a report addressing "the promulgation of regulations under [section 169A] to address long range strategies for addressing regional haze." Section 169B further establishes explicit timeframes in which EPA must, taking into account any reports of visibility transport commissions, issue regulations under section 169A, and in which States must respond by submitting revised SIPs. Congress modified the

timeframe for SIP submission in TEA-21 to ensure the ability of EPA to harmonize the implementation of today's rule with the requirements for the new $PM_{2.5}$ NAAQS.[55] Today's final rule carries out EPA's obligation under sections 169A and 169B to issue regulations addressing regional haze according to the timeframe as set forth in section 169B as modified by TEA-21.

The final rule includes the deadlines for SIP submittals set forth in TEA-21 and incorporates an optional set of requirements for States which commit to participate in regional planning. Commenters generally agreed with EPA's view in the notice of availability that it is important to ensure that the $PM_{2.5}$ program and regional haze program are fully integrated. The EPA believes that the approach taken in the final rule supports effective coordination between these programs, while also facilitating regional planning.

In the final rule, the timetable for SIP submittals is set forth in section 51.308(b) and (c). Section 51.308(b) directly codifies the TEA-21 timetable. Section 51.308(c) provides States that have committed to participate with other States in a regional planning process the option of choosing to defer submittal of a SIP which addresses the

[55] See H.R. Conf. Rep. No. 550, 105th Cong., 2d. Sess. 517.

substantive requirements of the regional haze program. States are not required to exercise the option provided by section 51.308(c), but those which do, must meet the deadlines set forth in that section for submitting a SIP which addresses the distinct requirements in section 51.308(c) and a SIP revision which addresses the substantive requirements of the regional haze program.[56]

As a first step, States electing to participate in regional planning must submit a SIP demonstrating the State's ongoing participation in a regional planning process. This SIP must address all areas in the State and is due on the earliest date by which an implementation plan affecting any area within the State would be due under the TEA-21 deadlines. Unless an entire State is designated as nonattainment, this SIP will be due 1 year after EPA designates any area within the State as attainment or unclassifiable. This SIP submission must contain a number of specific elements to demonstrate the State's commitment to the regional planning process and to ensure that by the date of the SIP submittal, the States in the regional

[56] The option for regional planning provided by section 51.308(c) is not available for Alaska, Hawaii, and the Virgin Islands. Class I areas within their boundaries are not affected by emissions from any other State. As a result, regional planning will not be needed to develop regional haze SIPs for these areas.

planning body have taken the necessary steps to initiate the regional planning process.

The following briefly summarizes the required elements of the first SIP submittal called for under the optional approach for regional planning:

-- Need for Regional Planning. In the SIP, the State must demonstrate the need for regional planning. The State must make this demonstration by showing that emissions from sources within the State contribute to visibility impairment in Class I areas in another State, or by showing that other States contribute to visibility impairment in the Class I areas in the State. The EPA does not intend for this to be an overly complex analysis.

-- Description of regional planning organization. The State must also submit a detailed description of the regional planning process. In its SIP, the State must show that the participating States have a credible regional planning process in place which all parties are committed to follow. We have outlined general principles for regional planning organizations in a document entitled Implementation Guidance for the Revised Ozone and Particulate Matter (PM) National Ambient Air Quality Standards (NAAQS) and the Regional Haze Program, which discusses features of effective regional planning organizations, including a discussion

of organization and representation issues, issues related to developing workplans and schedules, and issues related to ensuring that technical efforts are consistent. This document is available on the internet at http://www.epa.gov/ttn/oarpg/t1pgm.html.

-- Enforceable Commitment to Submit Coordinated Control Strategy by 2008. The regional planning SIP must include provisions requiring the State to submit a SIP revision meeting all of the requirements of the regional haze rule. This SIP revision is due by the *latest* date an area within the planning region would be required to submit an implementation plan under TEA-21, but in no event any later than December 31, 2008. The SIP must require that the SIP revision is developed in coordination with the other States in the regional planning body and that it fully addresses the recommendations of that body.

-- List of BART-Eligible Sources. The State must identify those sources from one of 26 source categories and placed into operation between 1962 and 1977 that are potentially subject to BART. This information will enable the State and regional planning organization to begin evaluating options for meeting the BART requirement or for implementing an emissions trading

program or alternative measure that achieves greater reasonable progress.

Summary of Timetable for Submission of the First Regional Haze SIPs. The following table is a summary of the deadlines for submitting the first regional haze SIPs.

For this case...	**... States must submit the first regional haze SIPs no later than:**	**... and the SIP must meet ....**
Areas designated as attainment or unclassifiable for $PM_{2.5}$	1 year after EPA publishes the designation (generally 2004-2006)	ALL requirements of section 51.308(d) and (e)
Areas designated as nonattainment for $PM_{2.5}$	At the same time as $PM_{2.5}$ SIPs are due under section 172 of the CAA. (That is, 3 years after EPA publishes the designation, generally 2006-2008)	ALL requirements of section 51.308(d) and (e)

For this case...	**... States must submit the first regional haze SIPs no later than:**	**... and the SIP must meet ....**
States participating in multistate regional planning efforts for combined attainment and nonattainment areas	Two phases: Commitment to regional planning due 1 year after the EPA publishes the first designation for any area within the State AND Complete implementation plan due at the same time as $PM_{2.5}$ SIPs are due under section 172 of the CAA. (That is, 3 years after EPA publishes the designation)	... the regional planning requirements listed in section 51.308(c) ... the “core requirements” listed in section 51.308(d) and BART requirements in section 51.308(e)
States following the recommendations of the GCVTC, as contained in section 309 of the final rule.	December 31, 2003.	...SIPs must meet the specific provisions for Grand Canyon Transport Region States listed in section 51.309.

C. Tracking Deciviews and Emissions Reductions.

Visibility impairment is caused by particles and gases in the atmosphere. Some particles and gases scatter light, while others absorb light. The net effect is called “light extinction.” The result of these processes is a reduction

of the amount of light from a scene that is returned to the observer, creating a hazy condition.

Proposed Rule. In the proposal, EPA established a regulatory framework by which a State would establish a "reasonable progress target" for each Class I area within its borders for the purpose of improving visibility on the worst visibility days over the next 10 or 15 years. The States would implement emission management strategies to improve visibility in these Class I areas. The proposal also called for the States to monitor progress in improving visibility over time. The EPA proposed that visibility targets and tracking of visibility changes over time be expressed in terms of the "deciview" haze metric. The proposal also called for the tracking of pollutant emissions to supplement the tracking of monitored visibility changes for use in periodically reviewing State progress in achieving visibility targets. Section 301(bb) of the proposal included the definition of the deciview metric for tracking visibility. Proposed section 306(d)(4) called for a review of emissions reductions achieved as part of the long term strategy.

Deciview. The proposal explained that the deciview is an atmospheric haze index that expresses changes in visibility. This visibility metric expresses uniform

changes in haziness in terms of common increments across the entire range of visibility conditions, from pristine to extremely hazy conditions.[57] Because each unit change in deciview represents a common change in perception, the deciview scale is like the decibel scale for sound. The proposal also stated that "A one deciview change in haziness is a small but noticeable change in haziness under most circumstances when viewing scenes in Class I areas."[58]

The proposal discussed that an advantage to using the deciview over other scales is that it can be used to express changes in visibility impairment in a way that corresponds to human perception in a linear, or one for one, manner. For example, this metric is designed such that a change of 3 deciviews in a highly impaired environment would be perceived as roughly the same degree of change as a 3 deciview change in a relatively clear environment. As noted in the preamble to the proposed regulation, the deciview is mathematically related to other common metrics used to describe visibility: the light extinction coefficient and visual range. However, the deciview metric can be used to compare changes in perception in a way that the other two

[57] Pitchford, M. and Malm, W, "Development and Applications of a Standard Visual Index," Atmospheric Environment, v. 28, no. 5, March 1994.

[58] 62 FR 41145.

metrics cannot. This feature makes the deciview a more useful metric for regulatory purposes. For example, a 5-mile change in visual range can in some cases be very significant, such as from 5 to 10 miles in an impaired environment (equal to a change of 6.9 deciviews), whereas a 5-mile change may not be perceptible in a less impaired environment, such as from 95 to 100 miles (equal to a change of 0.5 deciviews).

Tracking Emissions Versus Visibility. Many commenters supported the use of the deciview metric to track changes in visibility improvement as a key aspect of the program. These commenters agreed with EPA's proposal that under a visibility-oriented program, progress in fact should be tracked in terms of a visibility-based metric. Others felt the program could be successfully implemented by tracking emissions only because this approach would not be greatly affected by meteorological variations as would an approach based on ambient monitoring.

The final rule provides for the tracking of both visibility improvement and emissions reductions.[59] The final rule presents visibility improvement and tracking of emissions as linked elements of the program. The EPA has

[59] Tracking of visibility is addressed in section 51.308(d) and 51.308(g). Tracking of emissions reductions is addressed in section 51.308(g).

retained the use of the deciview metric for tracking changes in visibility. The EPA believes the tracking of actual visibility improvements is necessary to be responsive to the goals of the CAA. Section 169A(a) of the CAA sets forth the national goal of the "prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution." The CAA also requires EPA to establish regulations to be implemented by the States to ensure that "reasonable progress" is made toward the national goal. In addition, section 169B (e) of the CAA calls for EPA to carry out its "regulatory responsibilities under section (169A), including criteria for measuring 'reasonable progress' toward the national goal."[60]

The EPA believes that tracking of emissions reductions is also an important component of the regional haze program. The mechanism for achieving improvements in visibility will be the implementation of enforceable emissions reduction measures that have been adopted as part of the SIP. Tracking emissions will provide a good indicator of whether adopted measures are reducing emissions and is thus a useful indicator of progress in reducing visibility impairment. The tracking of emissions without concurrently tracking

[60] Section 169B(e)(1).

changes in visibility, however, would be problematic because of the variable effect on visibility of each of the principal constituents of PM, the more significant light scattering efficiency of fine PM versus coarse PM, and the generally greater effect of nearby versus distant sources on visibility impairment.

Since the national goal is expressed in terms of air quality (i.e., visibility) rather than emissions, we believe that it is very important to require the quantitative tracking of visibility impairment as an integral element in measuring reasonable progress. Because ambient monitoring data are subject to meteorological fluctuations, EPA designs standards and requirements for analysis of monitoring data to limit the effects of unusual meteorological events. For regional haze, we have provided in this final rule for the tracking of visibility trends based on 5-year averages of annual deciview values for the most impaired and least impaired days. We believe that this approach responds to commenters' concerns about significant unusual fluctuations in annual average values for the best and worst days due to unusual meteorological conditions in any particular year. However, it is also important to note that EPA has long held that normal meteorological variations should be explicitly accounted for in air quality analyses and control strategy design. Air quality improvement plans should be able to

assure protection of public health and welfare under the normal and foreseeable range of meteorological conditions.

Tracking Visibility in Deciviews. Some commenters disagreed with the use of the deciview to measure changes in visibility, claiming that the deciview metric has not been adequately reviewed for use in a regulatory program. The EPA disagrees with this assertion. The EPA believes the deciview metric has been adequately reviewed for use in the regional haze program. The deciview concept was introduced in 1994 in an article appearing in the peer-reviewed journal *Atmospheric Environment*.[61] It was presented in the 1996 Criteria Document for the PM NAAQS as a valid metric for characterizing visibility impairment.[62] The EPA also recognized the deciview as an appropriate metric for regulatory purposes in chapter 8 of the 1996 Staff Paper for the PM NAAQS review.[63] Both of these documents were reviewed and accepted by the Clean Air Science Advisory Committee.

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[61] Pitchford, M. and Malm, W., "Development and Applications of a Standard Visual Index," Atmospheric Environment, V. 28, no. 5, March 1994.

[62] U.S. EPA, Air Quality Criteria for Particulate Matter, Research Triangle Park, NC, National Center for Environmental Assessment. Office of Research and Development, July 1996.

[63] U.S. Environmental Protection Agency. Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information. OAQPS Staff Paper. Office of Air Quality Planning and Standards. July 1996.

Visibility conditions at Class I areas have been characterized in terms of deciview in summary reports on the IMPROVE visibility monitoring network.[64]

The EPA also supports use of the deciview metric because it satisfies one of the recommendations of the NAS Committee on Haze in National Parks and Wilderness Areas. In its 1993 report on visibility, the NAS recommended the development of an index that takes into account both measurement of physical changes (i.e., changes in air quality) with elements of human perception.[65] Further, a report on the regional haze proposal by the Congressional Research Service found that the deciview index "conforms closely"[66] to the NAS recommendation cited above.

Some commenters stated that the final rule should not suggest that a one deciview change is the threshold of perception in all cases for all scenes. The EPA agrees with

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[64] Sisler, J., et al, Spatial and Seasonal Patterns and Long Term Variability of the Composition of the Haze in the United States: An Analysis of Data from the IMPROVE Network. Cooperative Institute for Research in the Atmosphere, Colorado State University, 1996. See also Sisler, J., et al, Spatial and Temporal Patterns and the Chemical Composition of the Haze in the United States: An Analysis of Data From the IMPROVE Network, 1988-1991, Fort Collins, CO, 1993.

[65] National Research Council, *Protecting Visibility in National Parks and Wilderness Areas*, 1993, p. 354.

[66] Congressional Research Service, Regional Haze: EPA's Proposal to Improve Visibility in National Parks and Wilderness Areas, November 17, 1997, p. 17.

the comment that a one deciview change should not be considered the threshold of perception in all cases for all scenes. The EPA believes that visibility changes of less than one deciview are likely to be perceptible in some cases, especially where the scene being viewed is highly sensitive to small amounts of pollution. The EPA also acknowledges the technical point made by some commenters that for other types of scenes with other site-specific conditions,[67] a change of more than 1 deciview might be required in order for the change to be perceptible. However, EPA wishes to emphasize that the overall goal of the regional haze program is not to track changes in visibility for only certain vistas at a specific Class I area. Rather, the program is designed to track changes in regional visibility for the range of possible views of sky and terrain found in any Class I area, and to assure progress toward the national goal. For this purpose, EPA supports the use of the deciview metric as calculated from ambient monitoring data for tracking changes in regional visibility. The monitoring network is not designed to track changes in visibility for specific views in each Class I area. Rather, the network is designed to characterize visibility conditions that, for each site, are

[67] For example, where the sight path to a scenic feature is less than the maximum visual range.

representative of a fairly broad geographic region. The EPA believes this approach is consistent with the nature of regional haze, which is defined as a uniform haze caused by numerous sources covering a broad area.

Thus, although a 1 deciview change may not be the threshold of perception in all situations, the fundamental advantage of using the deciview remains: the deciview metric expresses uniform changes in haziness in terms of common increments across the entire range of visibility conditions, from pristine to extremely hazy conditions. The metric provides a useful means of expressing changes in visibility caused by changes in air quality while also providing a scale that relates visibility to perception. The final rule maintains the deciview as the principle visibility metric used in establishing reasonable progress goals, in defining baseline, current, and natural conditions, and in tracking changes in visibility conditions over time. States may choose to express visibility changes in terms of other metrics, such as visual range or light extinction, as well as in terms of deciview. The definition in the final rule was modified slightly to provide additional clarity.

Light Extinction Calculated from Aerosol Data. Some other commenters did not support EPA's proposed approach to calculating light extinction based on monitored fine

particle data (referred to as “reconstructed light extinction” in the proposal). These commenters preferred other methods, such as direct measurement of light scattering or light extinction with an optical device. While such methods are desired in comprehensively monitoring visibility impairment, the EPA supports the use of a common approach for calculating visibility changes based on monitored fine particle data as the primary monitoring method for tracking visual air quality.

Such an approach has been established and implemented for many years by the IMPROVE Steering Committee. The IMPROVE approach uses a set of standard assumptions,[68] which have been tested and found to be reasonable, in calculating light extinction and deciviews from changes in air quality. Two important aspects of the approach are: 1) standard rates of light extinction per unit mass of visibility-impairing pollutants (e.g. sulfate, nitrate, organic carbon, elemental carbon, and crustal material); and 2) standard effects of humidity on sulfate and nitrate.

Through extensive analysis of empirical data, a value (or “dry extinction coefficient”) has been developed for

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[68] *See* Sisler, James F. Spatial and Seasonal Patterns and Long Term Variability of the Composition of the Haze in the United States: An Analysis of Data from the IMPROVE Network. Cooperative Institute for Research in the Atmosphere, Colorado State University, 1996.

each aerosol component which represents the amount of light extinction (expressed in inverse megameters) caused by each microgram/m3 of that component. Light extinction is calculated by multiplying the aerosol mass for each component by its extinction coefficient and summing the products. Because sulfates and nitrates become more efficient at scattering light as humidity increases, the values for these two components are also multiplied by a relative humidity adjustment factor. It has been shown that annual and seasonal light extinction values developed according to this method correlate well with averages of optical measurements of light extinction for the same locations.[69] The EPA plans to issue future guidance describing the details of calculating visibility changes in this manner and tracking visibility over time.

Although light extinction can be measured directly by certain optical devices (i.e., transmissometers and nephelometers), EPA supports an approach based on the mass of PM components derived from ambient monitoring for calculating light extinction for two main reasons. First, this approach provides for the tracking of actual changes in the components of air pollution, and the information obtained from analysis of the chemical composition of PM is

[69] Id.

critical to the air quality modeling and strategy development processes. By understanding the chemical composition of particulate matter, we can better define the manmade and natural components contributing to overall light extinction. Second, direct measurements of visibility from some optical instruments (e.g. transmissometer) are more frequently disrupted by precipitation events (i.e. rain or snow) than are aerosol measurements.

For all of the reasons discussed above, the final rule provides for the tracking of visibility and emissions reductions. The deciview will be the principal visibility metric for use in implementing the regional haze program. The deciview will be used for expressing reasonable progress goals, defining baseline, current, and natural conditions, and tracking changes in visibility conditions over time. The definition of the final rule in section 301(aa) was modified slightly to provide additional clarity and state that deciview values are to be derived from calculated light extinction based on aerosol measurements in accordance with EPA guidance.

D. Regional Haze Implementation Plan Principles

General Principles. Section 169A of the CAA calls for States to develop implementation plans ensuring reasonable progress toward the national goal, including emission

limits, schedules of compliance and other measures as necessary. At a minimum, the CAA calls for SIPs to include a long term strategy and provisions for BART for certain major stationary sources. We would like to emphasize several overarching themes for the specific implementation plan requirements in the final rule:

Regional haze regulations and State implementation plans must address all of the statutory requirements outlined in 169A and 169B of the CAA. Regional haze requirements must address a number of specific statutory requirements, including “criteria for reasonable progress,” long term strategies addressing all types of sources and activities, and best available retrofit technology for certain stationary sources. The implementation plan requirements in the final rule are designed to ensure that all of these statutory requirements will be met.

Tracking “reasonable progress” should involve the tracking of both emissions and visibility improvement. Regional haze implementation plans must include provisions for tracking the implementation of enforceable emission management strategies designed to make reasonable progress toward the national visibility goal. Emission control measures will be the component that will be enforceable to ensure reasonable progress. Measuring reasonable progress should involve tracking the actual emissions achieved

through implementation of such strategies, and the tracking of visibility for the most impaired and least impaired days using established monitoring and data analysis techniques.

Strategies for improving visibility should address all types of sources. Section 169A provides for State long term strategies to address **all** types of sources and activities emitting pollutants that contribute to visibility impairment in Class I areas, including stationary, mobile, and area sources. Implementation plans also must give specific attention to certain stationary sources built between 1962 and 1977 and provide for meeting the BART provisions for these sources.

Successful implementation of the regional haze program will involve long term regional coordination among States. Pollution affecting the air quality in Class I areas can be transported long distances, even hundreds of kilometers. Therefore, States will need to develop strategies in coordination with one another, taking into account the effect of emissions from one jurisdiction to air quality in another. In addition, as noted by the NAS study, "achieving the national visibility goal will require a substantial, long term program."[70] Accordingly, the regional haze program

[70] National Research Council, Committee on Haze in National Parks and Wilderness Areas, *Protecting Visibility in National Parks and Wilderness Areas*, National Academy Press, 1993, p. 11.

requires the periodic review by each State of whether "reasonable progress" is being achieved and revisions of implementation plans as needed to continue progress toward the national visibility goal.

E. Determination of "Baseline," "Natural" and "Current" Visibility.

Background. The fundamental goal of the visibility program, as provided by Congress, is the prevention of future visibility impairment and the remedying of existing impairment in Class I areas. Thus, the regional haze program must track progress toward the national goal.

In order to facilitate this tracking process, the proposed rule required each State having one or more Class I area to establish, and update as necessary, three important visibility parameters for the best and worst visibility days at each Class I area within the State. Each parameter is discussed in detail below.

- Baseline conditions - Baseline conditions represent visibility for the best and worst days at the time the regional haze program is established. Baseline conditions are calculated using multiyear averaging.
- Natural conditions - As specified in the CAA, estimated natural conditions, or the visibility conditions that would be experienced in the absence of human-caused

impairment, constitute the ultimate goal of the program. Under the regional haze program, natural conditions need to be estimated for the 20 percent best and worst days.

- Current conditions - Current conditions for the best and worst days are calculated from a multi-year average, based on the most recent years of monitored data. This value would be revised at the time of each periodic SIP revision, and would be used to illustrate 1) the amount of progress made since the last SIP revision, and 2) the amount of progress made from the baseline period of the program.

Baseline Conditions

Proposed Rule. The preamble to the proposal discussed an approach for determining baseline visibility conditions for the haziest 20 percent and clearest 20 percent days that would allow using a minimum of 3 years of monitored data, and up to a maximum of 9 years of data.

Comments Received. The EPA received some comments suggesting that it would be more equitable to use a standardized time period to establish baseline values for all Class I areas across the country. Other commenters supported the use of baseline values based on a varying number of years from site to site. Some commenters also

supported the establishment of baseline conditions based on a period of time longer than 3 years because a 3-year period could be significantly influenced by unique meteorological circumstances.

Final Rule. After considering public comments on the baseline issue, EPA has determined that the most appropriate "baseline period" would be a fixed, 5-year period extending from calendar year 2000 through calendar year 2004. The EPA concluded that a standard baseline period provides for greater national consistency in establishing this important value, and therefore, is preferable to a provision allowing the baseline period to be a variable number of years. Using a common number of years and data points to calculate the baseline value for each site is consistent with fundamental statistical principles and will provide for easy comparison of data from multiple sites as the program is implemented.

The EPA also concluded that it would be preferable to have a baseline value based on more than 3 years in order to establish a more robust baseline value. The EPA agrees with commenters that a 5-year period, rather than a 3-year period, provides for a more stable treatment of the inherent variability in emissions and meteorology. This approach decreases the probability that the baseline period will be unduly affected by unusual or nonrepresentative events.

In deciding upon the specific baseline period of 2000-2004, the Agency took into account the fact that EPA has obtained funding to provide several hundred monitors to the States for the purposes of characterizing $PM_{2.5}$ concentrations in urban and rural areas nationally. In accordance with the part 58 monitoring provision enabling IMPROVE protocol aerosol monitors to be used to characterize $PM_{2.5}$ conditions at background and transport sites, the IMPROVE network will be expanding from 30 to more than 100 sites by the end of 1999 in order to characterize both background $PM_{2.5}$ levels and visibility impairment levels in Class I areas. Thus, EPA concluded that the baseline period should begin in 2000, after monitoring coverage for Class I areas is expanded significantly.

The approach to calculating baseline values will also provide for more stable values because the frequency of monitoring samples in the IMPROVE network will increase in 1999 to one sample every 3 days. In this way, the frequency of sampling for IMPROVE will be consistent with the $PM_{2.5}$ monitoring approach. Thus, annual values should become more robust since 17 percent more samples will be collected each year. Baseline conditions must be determined in terms of deciviews for the years 2000-2004 for the “most impaired days” and the “least impaired days.” The final rule defines these values as the average of the 20 percent of monitored

days with the highest or lowest light extinction values, expressed in deciviews. The EPA will issue guidance for calculating baseline visibility conditions based on ambient monitoring data. The baseline value is determined by calculating the average deciview value for the 20 percent most (or least) impaired days for each of the 5 years (2000 through 2004), and by averaging those five values.

The final rule also calls for baseline conditions to be established by the State for any Class I area without on-site monitoring by using "representative" monitoring data for the site. In the SIP, the State will need to provide an adequate demonstration supporting the use of any "representative" data. The EPA will issue guidance to help the States address this issue. The IMPROVE Steering Committee (comprised of representatives from EPA, States, and FLMs) is working to develop acceptable criteria to configure the expanded visibility monitoring network in such a way that virtually all Class I areas will either have an aerosol monitor or will be characterized by a "representative" site. The IMPROVE Steering Committee, including State representatives, will complete the process for identifying representative sites before monitoring for the expanded network begins in the year 2000. For this reason, it is expected that most States needing to rely on representative data from another site will be able to meet

the requirement of section 51.308(d)(4) by referencing the Visibility Monitoring Guidance Document, which will be released shortly after promulgation of this rule, and other technical support materials developed by the IMPROVE Steering Committee to support the determination of representative sites.

Finally, States that submit SIPs for regional haze by 2003 under section 51.309 (further discussion in unit IV) must determine baseline conditions based on the most recent five year period for which monitoring data are available for the Class I area. For an area without monitoring data, the State may use data from another representative Class I area.

Natural Visibility Conditions

Proposal. The proposed rule called for each State having a Class I area, in consultation with the appropriate FLMs, to: 1) develop a procedure to estimate natural conditions for the 20 percent most impaired and least impaired days at each Class I area within the State, and 2) provide this estimate with the State's first SIP revision for regional haze (in the 2003-2005 timeframe as stated in the proposal). The estimates for natural conditions would be expressed in deciviews. The preamble cited as a default annual average, estimates of natural visibility that were included in the 1991 NAPAP chapter on visibility. When

converted to deciview values, these annual average estimates are 9.6 deciviews in the eastern United States and 5.3 deciviews in the western United States.

Comments Received. A number of commenters noted that there are several factors which can make the determination of natural conditions difficult. For example, organic aerosols resulting from biogenic sources, windblown dust, and natural causes of fire all contribute to natural visibility conditions. Several commenters emphasized the difficulty in determining the estimated contribution of naturally-caused fire to natural conditions. Some commenters suggested that EPA provide guidance on how to estimate natural conditions.

The EPA understands that estimating natural visibility conditions can involve many technically complex issues. The EPA is committed to working with the States, tribes, and FLMs on this issue to develop technical guidance on estimating natural visibility conditions. The EPA expects that these estimates may be refined over time. In addition, after the regional haze rule is promulgated, and in advance of SIP due dates, the EPA plans to revise the Interim Air Quality Policy on Wildland and Prescribed Fires[71] to address

[71] May 1998 "Interim Air Quality Policy on Wildland and Prescribed Fires" by the USEPA Office of Air Quality Planning and Standards.

a number of issues, including the contribution of fire to natural visibility conditions.

Consistent with the proposal, the final rule retains the requirement that each State provide an adequate estimate of natural visibility conditions for best and worst visibility days in each Class I area within the State. These estimates will be due at the time the State submits its initial control strategy SIP for regional haze. However, because the requirement for a SIP revision within 12 months of promulgation has been overridden by the provisions of TEA-21, there no longer is a requirement for States to separately submit to EPA recommended procedures for estimating natural conditions in advance of their control strategy SIPs.[72]

The EPA recommends that the States work closely with the FLMs, tribes, and EPA in developing and documenting in their SIPs appropriate methods for estimating natural conditions. Estimates of natural visibility conditions are needed to aid all interested parties, including the general public, in understanding how “close” or “far” a particular Class I area is in relation to the ultimate goal of the program. Understanding the estimated relative contributions

[72] See unit III.C. for a detailed discussion of the TEA-21 provisions and their affect on the timing for implementation of the regional haze program.

of natural PM constituents (such as organic carbon and crustal material) also can help the States and tribes in understanding the extent of the contribution from manmade components, and thus can help in designing appropriate emission management strategies in the future. With each subsequent SIP revision, the estimates of natural conditions for each Class I area may be reviewed and revised as appropriate as the technical basis for estimates of natural conditions improve.

The EPA believes that, as a starting point, it will be appropriate to derive regional estimates of natural visibility conditions by using estimates of natural levels of visibility-impairing pollutants[73] in conjunction with the IMPROVE methodology for calculating light extinction from measurements of the five main components of fine particle mass (sulfate, nitrate, organic carbon, elemental carbon, and crustal material). By using this approach with appropriate assumptions for annual average relative humidity, EPA estimates natural conditions for the worst visibility days to be approximately 11-12 deciviews in the East and 8 deciviews in the West. The EPA supports use of these estimating techniques as a valid starting point because they rely on peer-reviewed estimates of the natural

[73] Estimates of natural levels of visibility-impairing pollutants can be found in [Cite to 1991 NAPAP Report].

composition of fine particle mass,[74] and analysis of data from the IMPROVE program's well-established approach, refined over the past 10 years or more, for calculating light extinction from monitored PM constituents.

Because these values are expressed in regional terms only, further refinement of these estimates will need to take place in the future on a site-specific basis. However, because current conditions at most Class I areas with existing IMPROVE monitoring exceed the above estimates by at least several deciviews (with some of the more impaired Class I areas having values that exceed estimated natural conditions by 20 deciviews or more), EPA does not believe that such refined values are necessary for the initial 10-year program implementation period. As the difference between current and natural conditions for a particular Class I area becomes smaller, it will be important to develop more precise techniques for estimating natural conditions.

Current Conditions

Proposal. The proposed rule required the State to revise its long term strategy every 3 years and to compare current conditions to the visibility conditions existing at the time of its previous long term strategy revision.

[74] The NAPAP estimates were cited in both the Criteria Document and EPA Staff Paper for the PM NAAQS.

Current conditions would be established for the most impaired and least impaired days, and would be expressed in deciviews.

Comments Received. Many commenters supported EPA's approach to periodic tracking of changes in visibility to determine reasonable progress. Some commenters felt that averaging 5 years of data, rather than 3, would be preferable.

Final Rule. Section 51.308(f)(1) of the final rule retains the requirement for each State, at the time of any SIP revision, to determine the current visibility conditions for the most impaired and least impaired days for each Class I area within the State. Current conditions are to be based on the 5 most recent years of monitoring data available at the time a SIP revision or progress report is submitted. The approach for calculating current conditions is similar to the approach for calculating baseline conditions discussed above: the value is determined by calculating the average for the 20 percent most impaired days for each of the 5 most recent years for which quality-assured data are available, and then by calculating the average of those five values.[75]

[75] See the section on Baseline Conditions for a discussion of the rationale for selecting a 5-year period.

Section 51.308(d)(1) of the final rule also requires the State to calculate the difference between current conditions and several other parameters so that this information can be taken into account when the State is revising its SIP and considering new reasonable progress goals. A discussion of these calculations is provided in the section of this preamble addressing periodic progress reports.

Summary

The following summary table further illustrates the uses of “baseline,” “natural,” and current conditions in the regional haze program.

Term	**What does it mean?**	**How is it Used in the Regional Haze Program?**
“Baseline conditions”	Visibility (in deciviews) for the 20% most-impaired days, and for the 20% least-impaired days, for the years 2000 through 2004	“Baseline” conditions are used in two ways: (1) For the first regional haze SIPs, due in about 2006-2008, baseline conditions are the reference point against which visibility improvement is tracked. (2) For subsequent SIP updates (in the year 2018 and every 10 years thereafter), baseline conditions are used to calculate progress from the beginning of the regional haze program

Term	What does it mean?	How is it Used in the Regional Haze Program?
“Natural conditions”	The level of visibility (in deciviews) for the 20% most-impaired days, and for the 20% least-impaired days, that would exist if there were no man-made impairment.	“Natural conditions” represents the absence of visibility impairment due to human-caused emissions, the ultimate goal of the regional haze program.
“Current conditions”	Visibility (in deciviews) for the 20% most-impaired days, and for the 20% least-impaired days, for most recent 5-year period	For the initial planning SIPs, “current” and “baseline” conditions are the same. For subsequent 5-year progress reports, “current conditions” describe the amount of progress that has been made at the mid-course review point halfway through an implementation cycle. For subsequent comprehensive regional haze SIPs (beginning in 2018 and every 10 years thereafter), “current conditions” will be used to show how much progress has been made relative to the “baseline,” and will serve as the reference point for tracking progress for the next implementation period.

F. Reasonable Progress Goals

The previous section discussed three important visibility parameters for tracking “reasonable progress”

toward the national visibility goal. In this section, EPA describes the requirements of section 51.308(d)(1) of the final rule for States to establish "reasonable progress goals" for each Class I area within the State. In addition, this section also discusses important analyses and other factors for States to take into consideration in setting these goals.

In the proposed rule, EPA presented a framework for a long term program under which continued progress would be achieved in Class I areas toward the national visibility goal. The EPA proposed presumptive "reasonable progress targets," expressed in terms of deciviews, for the purposes of improving visibility on the 20 percent worst days and allowing no degradation of visibility on the 20 percent best days. Two options were presented for the presumptive target for the most impaired days: 1) a rate of improvement equivalent to 1.0 deciview over a 10-year period, and 2) a rate of improvement equivalent to 1.0 deciview over a 15-year period. For the least impaired days, EPA proposed a target of no degradation, defined as less than a 0.1 deciview increase.

The EPA noted that the 10 and 15-year time periods for tracking improvement were consistent with section 169A(b)(2)(B), which calls for States to develop long term strategies covering 10 to 15 years. The EPA also emphasized

the importance of achieving a perceptible change in visibility over the time period of a long term strategy. In addition, EPA stated that gradual improvements in visibility as defined by reasonable progress targets were consistent with the GCVTC definition of reasonable progress, which is "achieving continuous emissions necessary to reduce existing impairment and attain steady improvement of visibility in mandatory Class I areas . . .."[76] As noted in unit III.B., EPA also proposed to track progress in relation to the targets through the use of monitored air quality data and calculation of light extinction values from this aerosol data.

The proposal also provided a process by which a State could establish alternate reasonable progress targets, expressed in deciviews, provided the State j ustified the alternate target based on a review of the relevant statutory factors.[77] These factors are:

- the costs of compliance;
- the time necessary for compliance;
- the energy and nonair quality environmental impacts of compliance; and

[76] GCVTC Report, June 1996, p. x.

[77] See CAA section 169A(g)(1) and 169A(g)(2). See also 62 FR 41145-41148.

! the remaining useful life of any existing source subject to such requirements.

A number of commenters advocated a faster rate of improvement than the proposed presumptive rate of 1 deciview every 10 or 15 years since, as proposed, they claimed it could take more than 200 years to reach the national visibility goal in some eastern locations. They felt that this rate of progress should not be considered "reasonable." Many of these commenters supported a rate of improvement for the worst days equal to 10-20 percent of the current deciview value (i.e., 3-6 deciviews per 10 years in an average eastern location with a worst day value of 30 deciviews, and 1.5-3.0 deciviews for an average southwestern location with a worst day value of 15 deciviews). A number of other commenters interpreted the proposed rule as requiring an inflexible visibility "standard" of 1 deciview improvement every 10 or 15 years. They maintained that such a standard would be infeasible to achieve in some areas of the country, and that EPA had failed to justify such a presumption through an analysis of the statutory factors in section 169A(g). These commenters wanted the States to have greater flexibility in setting visibility goals. Some commenters stated that 1 deciview is not the threshold of perception in all situations, and that for this reason the one deciview presumptive target in the proposal should be

dropped. Other commenters asserted that the no degradation target for the best visibility days would prevent new source growth in some areas. Some commenters also opposed the presumptive target because of the concern that a State could be subject to a citizen lawsuit for not meeting a reasonable progress target.

In considering how to address the reasonable progress target issue in the final rule, EPA was mindful of the balance that must be maintained between the need for strategies that will achieve meaningful improvements in air quality and the need to provide appropriate flexibility for States in designing strategies that are responsive to both air quality and economic concerns. After considering the comments on the "presumptive target" issue, EPA has revised the rule to eliminate "presumptive targets." There is no presumptive target that States are required to meet to achieve reasonable progress. States have flexibility in determining their reasonable progress goals based on consideration of the statutory factors. However, as discussed below, the final rule requires States 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 final rule calls for States to establish "reasonable progress goals,"[78] expressed in deciviews, for each Class I area for the purpose of improving visibility on the haziest days and not allowing degradation on the clearest days over the period of each implementation plan or revision. The EPA believes that requiring States to establish such goals is consistent with section 169A of the CAA, which gives EPA broad authority to establish regulations to "ensure reasonable progress," and with section 169B of the CAA, which calls for EPA to establish "criteria for measuring reasonable progress" toward the national goal.

This approach is designed to address the concerns of those commenters interested in greater State flexibility in setting visibility goals, as well as the concerns of those commenters who believed that the presumptive 1 deciview target approach could actually provide a disincentive for some States to pursue more ambitious rates of progress, particularly for the most impaired Class I areas in the East. The EPA has taken this approach in the final rule because the CAA national visibility goal and "reasonable progress" provisions do mandate specific rates of progress, but instead call for "reasonable progress" toward the

[78] See section 51.308(d)(3).

ultimate goal of returning to natural background conditions. Today's rule requires the States to determine the rate of progress for remedying existing impairment that is reasonable, taking into consideration the statutory factors, and informed by input from all stakeholders.

Required Analysis of Rate of Progress Which Would Attain Natural Conditions in Sixty Years. The EPA received numerous comments expressing the concern that a rate of progress that would result in reaching the national goal in 200 years should not be considered "reasonable." These comments are based on the fact that the most impaired Eastern United States Class I areas have current conditions for the worst days (around 26-31 deciviews) that exceed estimated natural conditions (approximately 10-11 deciviews) by 16-20 deciviews or more. At the proposed presumptive rate of progress of 1 deciview per 10 years, it would take 200 years or more to reach the national visibility goal in many eastern Class I areas. In addition, several commenters felt that rates of progress should vary between the east and the west because many parts of the western United States have much lower levels of visibility impairment than the East. For example, they asserted that a 1 deciview improvement over 10 years may not be very ambitious in an

eastern location, whereas it could be very ambitious in some of the least impaired Class I areas in the west.

In order to address the diverse concerns of commenters on the proposal, EPA is establishing an analytical requirement that takes into account the varying levels of visibility impairment in Class I areas around the country while ensuring an equitable approach nationwide. To determine an equitable analytical approach, we considered the CAA amendments of 1990, which require actions to attain air quality health standards over a 20-year period for the one-hour ozone standard, depending on the severity of the area's problem, and over a 10-year period for new standards, such as the new 8-hour ozone standard and the $PM_{2.5}$ standards. The CAA also requires reductions over the same time period to address acid rain. In the eastern United States, EPA's analyses show that the reductions from these and other CAA programs will result in a rate of improvement estimated at approximately 3 deciviews over the period from the mid-1990's to about 2005.[79] The EPA calculated that if this rate of improvement could be sustained, these areas would reach the national goal in 60 years.[80] The EPA

[79] Effects of the 1990 Clean Air Act Amendments on Visibility in Class I Areas: An EPA Report to Congress. EPA-452/R-93-014.

[80] Calculated by dividing 3 deciviews (per 10 years) into an average of 18 deciviews away from natural

concluded that it would be reasonable to establish an analytical requirement based on this rate of progress given that this rate of improvement is expected to be achieved due to emissions under CAA programs.

The EPA also believes that, the analytical requirement of the rate of improvement needed to reach natural conditions in 60 years is reasonable because in the near-term, cost-effective controls will continue to be available to reduce emissions that contribute to visibility impairment in Class I areas across the country. Recent analyses for other air quality programs show that significant emissions can be achieved through cost-effective control measures.

In addition, in the longer term, it can be expected that continued progress in visibility will be possible as industrial facilities built in the latter half of the 20th century reach the end of their "useful lives" and are retired and/or replaced by cleaner, more fuel-efficient facilities. Significant improvements in pollution prevention techniques, emissions control technologies, and renewable energy have been made over the past 30 years, and continue to be made. History suggests strongly that further innovations in control technologies are likely to continue

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conditions, and multiplying 6 increments by 10 years, assuming 10 years to achieve each increment.

in future decades, leading to the ability of new plants to meet lower emissions rates.

In light of this analysis of progress that could potentially be achieved, EPA has established in section 51.308(d)(1)(i)(B) an analytical requirement for setting reasonable progress goals that should provide for greater equity between goals set for the more impaired eastern United States and the less impaired western United States This analytical requirement has the following four steps.

First, the State (or regional planning group) must compare the baseline visibility conditions in the years 2000-2004 (in deciviews) for the most impaired days with the natural background conditions, for each relevant Class I area. From this comparison, the State must determine the amount of progress needed to reach natural background conditions in 60 years, that is, by the year 2064. For example, if the baseline visibility is 30 deciviews, and the natural background is 12 deciviews, then this step would show the need for an 18 deciview improvement between 2004 and 2064.

Second, the State must identify the uniform rate of progress over the 60 year period that would be needed to attain natural background conditions by the year 2064. For the example case noted above, where 18 deciviews is the amount for the 60-year period, this would result in a

uniform rate of progress for each year of (18/60), or 0.3 deciviews for year.

Third, the State must identify the amount of progress that would result if this uniform rate of progress were achieved during the period of the first regional haze implementation plan. For example, if the first implementation plan covers a 10-year period, then for the above example, the State would identify a 3 deciview amount of progress over that time period.

Fourth, the State must identify and analyze the emissions measures that would be needed to achieve this amount of progress during the period covered by the first long term strategy, and to determine whether those measures are reasonable based on the statutory factors. These factors are the costs of compliance with the measures, the time necessary for compliance with the measures, the energy and nonair quality environmental impacts of the compliance with the measures, and the remaining useful life of any existing source subject to the measures.

In doing this analysis, the State must consult with other States which are anticipated to contribute to visibility impairment in the Class I area under consideration. Because haze is a regional problem, States are encouraged to work together to develop acceptable approaches for addressing visibility problems to which they

jointly contribute. If a contributing State cannot agree with the State establishing the reasonable progress goal, the State setting the goal must describe the actions taken to resolve the disagreement.

If the State determines that the amount of progress identified through the analysis is reasonable based upon the statutory factors, the State should identify this amount of progress as its reasonable progress goal for the first long term strategy, unless it determines that additional progress beyond this amount is also reasonable. If the State determines that additional progress is reasonable based on the statutory factors, the State should adopt that amount of progress as its goal for the first long term strategy.

If the State determines, based on the statutory factors, that the identified uniform rate of progress needed to reach natural conditions is not reasonable, the State must provide in its plan submission the analysis and rationale supporting this determination. The State then must provide a demonstration as part of its SIP submission showing why a less ambitious goal is reasonable, based on the statutory factors. The EPA intends to issue guidance interpreting the statutory factors and providing examples of ways in which they may be applied.

The State must also provide to the public, in accordance with section 308(d)(1)(ii), an assessment of the

number of years it would take to reach natural conditions if the State continued to make progress at the alternative rate of progress it selected. For example, if average worst day visibility at the class I area is 18 deciviews from estimated natural conditions, the uniform rate of progress needed to reach natural conditions is 3 deciviews per 10 years. If the State determined that 3 deciviews is not reasonable but 2 deciviews is, then the State would have to include a statement in its SIP that it would take 90 years to reach natural conditions if this rate is maintained.

It should be noted that in developing the first regional haze implementation plan (and subsequent revisions), there is a time period of several years between the time period for which data are available and the date of plan submission. The first regional haze implementation plans for most of the United States will use the years 2000 through 2004 as the baseline for monitoring and emission inventories, while the first implementation plan for much of the country will not be due until a deadline that occurs between 2006 to 2008. In identifying the amount of progress needed by the end of the implementation period (the third step described above), States must account for this time period. Assume, for example, for the case discussed above (i.e., a 30 deciview baseline, and a uniform rate of progress of 0.3 deciviews per year to reach natural

conditions in 60 years) that the first regional haze SIPs covers the years 2009 through the year 2018. For this case, there would thus be a four-year period (2005 through 2008) that would occur between the baseline and the date of SIP submission. The uniform rate of progress of 0.3 deciviews per year over this time period would result in 1.2 deciviews of improvement before the plan submission. Hence, for this example, in identifying the amount of progress needed between the baseline and the end of the implementation period (i.e., the year 2018), the State must evaluate strategies that provide for a total of 4.2 deciviews: 1.2 deciviews between the baseline and plan submission, and 3 deciviews for the implementation period. The effect of this provision is that States must be mindful of the expected activities that take place before plan submission. Generally, we expect for the first plan submission period that progress in visibility improvement will continue to occur during the 2004 to 2008 period due to implementation of other CAA programs.

Rationale for the Required 60-year analysis. The EPA has adopted this analytical requirement for two reasons. First, a common analytical framework that recognizes regional differences meets the concerns of several

commenters by providing greater equity between the eastern United States and western United States.

Second, EPA believes this analysis will provide important additional information for the public to consider as States establish progress goals. The EPA believes this analysis will provide for a more informed and equitable decision making process by giving the public information about the level of emissions needed, related costs, and other factors associated with improvements in visibility. The EPA recommends that as part of this process, the States use computer-based scene optics modeling tools to present to the general public the anticipated change in class I area visibility that would result from one reasonable progress goal versus another.

Consideration of Other CAA Measures. In determining the emissions and visibility improvement achieved during each implementation period, States should include all air quality improvements that will be achieved by other programs and activities under the CAA and any State air pollution control requirements. Therefore, any reasonable progress goal for a Class I area should reflect at least the rate of visibility improvement expected from the implementation of other "applicable requirements" under the CAA during the period covered by the long term strategy. Consequently,

States must take into account, at a minimum, the effect of measures to meet the NAAQS, the national mobile source program, and other applicable requirements under the CAA on Class I area visibility.

While, as noted above, based on our current understanding, EPA expects in the Eastern United States that the reductions from measures implementing the CAA requirements will provide the visibility improvement and emissions needed for reasonable progress during the first regional haze implementation plan, the EPA also recognizes that States will not be submitting their regional haze plans for several years. In developing submittals, each State will need to conduct analyses to support its reasonable progress goal according to information available at the time the plan is submitted about benefits from the existing CAA programs. Each State should set its goal in consideration with its stakeholders based on the statutory factors described above. In addition, the State must also conduct a BART determination for each source, subject to BART as required in section 51.308(e) of the rule and described in section III.H. of the preamble. In considering whether reasonable progress will continue to be maintained, States will need to consider during each new SIP revision cycle whether additional control measures for improving visibility

may be needed to make reasonable progress based on the statutory factors.

Some commenters expressed concern that the State would be subject to sanctions or enforcement actions in the event that a State fails to meet a reasonable progress target. As noted above, the reasonable progress goal is a goal and not a mandatory standard which must be achieved by a particular date as is the case with the NAAQS. Once a State has adopted a reasonable progress goal and determined what progress will be made toward that goal over a 10-year period, the goal itself is not enforceable. All that is "enforceable" is the set of control measures which the State has adopted to meet that goal. If the State's strategies have been implemented but the State has not met its reasonable progress goal, the State could either: (1) revise its strategies in the SIP for the next long term strategy period to meet its goal, or (2) revise the reasonable progress goals for the next planning period. In either case, the State would be required to base its decisions on appropriate analyses of the statutory factors included in section 51.308(d)(1)(i)(A) of the final rule.

If a State fails to submit an approvable SIP, or if it fails to implement and enforce strategies adopted into its SIP, the State could be subject to sanctions under the CAA. If the State continues to fail in meeting its obligations,

EPA could be required to develop and implement a Federal implementation plan (FIP).

Allowing no degradation for the best days. Some commenters supported the goal of no degradation at a minimum, but they asserted that in many class I areas, particularly in the East, the "best days" are in fact still quite impaired. In their view, a rule requiring only preservation of existing clean days would not meet the national goal.[81] Other commenters stated that a "no degradation" target for the clearest days could result in limitations to economic growth.

The final rule maintains the approach used in the proposed rule, which established a goal of no degradation for the best visibility days. The EPA believes this approach is consistent with the national goal in that it is designed to prevent future impairment, a fundamental concept of section 169A of the CAA. The EPA recognizes that the best days are still impaired in many class I area locations, particularly in the east. The EPA encourages States to evaluate monitoring data to determine whether the same types of sources are affecting both the clear days and the hazy

[81] Data from the IMPROVE network show that for several sites in the eastern United States, the deciview values for the best days are greater than 14 deciviews, which is higher than even the NAPAP estimate of annual average conditions in the eastern United States (9.6 deciviews).

days. If the relative contribution of different particle types to light extinction is similar for both clear and hazy days, as it is for many sites currently monitored, then by developing strategies to improve conditions on the worst visibility days, the States will likely improve the entire distribution of hazy and clear days. Thus, under the final rule, the clean days for most Class I areas are expected to improve over time. Indeed, recent analyses of visibility trends have shown that at many class I areas, deciview values for the 20% least impaired days are declining.

If at a Class I area the average conditions for clear days degrades over time, the State must provide in the next plan revision an explanation of why this happened, a set of measures designed to reverse this trend, and a plan for implementation during the next 10-year period. The State should review the effectiveness of these measures at the time of the next 5-year progress review.

Integral Vistas. The scenic vistas enjoyed by visitors to many parks often extend to important natural features outside these parks. The 1980 rules included a provision whereby the States could identify specific vistas for protection. For this reason, EPA solicited comment on whether the integral vistas concept should be extended to the regional haze program.

Some commenters supported reopening the vista identification program because such vistas are a significant resource of a class I area. Several others opposed extending the program for a variety of reasons.

The final regional haze rule does not extend the integral vista concept to the regional haze program. As noted earlier in the background section of this preamble, regional haze is caused by a multitude of sources across a broad geographic area, and it can create a uniform haze in all directions. The regional haze program is designed to bring about improvements in regional visibility for the range of possible views of sky and terrain found in any class I area. Accordingly, the program does not protect only specific views from a class I area. To address haze, regional strategies will be needed, and emissions resulting from these strategies are expected to improve visibility across a broad region, not just within a class I area. Thus, although the regional haze program does not include a specific provision regarding integral vistas, the long term strategies developed to meet reasonable progress goals would also serve to improve scenic vistas viewed from and within class I areas.

Use of 20 percent most-impaired days and 20 percent least-impaired days. The final rule maintains the approach

discussed in the proposal of improving the most-impaired visibility days (i.e., the average of the 20 percent most impaired days over an entire year), and allowing no degradation in the "cleanest" or least impaired days (i.e., the average of the 20 percent least impaired days over an entire year). In deciding upon an appropriate characterization of the "most" and "least" impaired days, EPA considered the typical frequency of aerosol monitoring in the IMPROVE network[82] (once every 3 days), and the number of samples that would be available for analysis annually (122 possible samples per year). The EPA believes that calculating annual "best" and "worst" conditions on the basis of an average of the 20 percent best and worst visibility days represents a reasonable approach to characterizing the typical best and worst conditions without having these values unduly influenced by a single anomalous data point.

The EPA's basis for maintaining the proposed approach is supported by the CAA and its legislative history, and by the approach used by the GCVTC in its technical assessment work and in its definition of reasonable progress. The EPA believes that a rule that requires strategies for improving the worst days and allowing no degradation on the clean days

[82] The IMPROVE network is described in section III.I. of the preamble.

is consistent with the national visibility goal in section 169A of the CAA, which calls for preventing any future impairment (protecting clearest days) and remedying any existing impairment (improving the already impaired days). This approach is also supported by the legislative history of the 1990 CAA and the reasonable progress definition. The legislative history provides that, "At a minimum, progress and improvement must require that visibility be perceptibly improved compared to periods of impairment, and that it not be degraded or impaired during conditions that historically contribute to relatively unimpaired visibility."[83] The GCVTC interpreted "reasonable progress" to be "achieving continuous emissions reductions necessary to reduce existing impairment and attain a steady improvement in visibility in mandatory Class I areas, and managing emissions growth so as to prevent perceptible degradation of clear air days."[84] In today's rule, EPA is similarly providing for "attaining a steady improvement in visibility" and "preventing degradation of clean air days" through the requirement to improve the haziest days and prevent degradation of the clearest days.

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[83] 136 Cong. Rec. S2878 (daily ed. March 21, 1990) (statement of Sen. Adams).

[84] GCVTC Report, p. x.

Tracking progress based on 5-year averages. To determine whether reasonable progress in improving visibility is being achieved, States will need to collect and analyze air quality data each year and review progress at 5-year intervals. Because the regional haze program represents a long term effort to improve visibility in Class I areas, EPA believes that monitoring and assessments of progress should not be unduly influenced by short-term events or unusual meteorological conditions, but should reflect trends in air quality which are robust and insensitive to minor fluctuations. For this reason, the final rule calls for measuring progress by tracking changes in 5-year average deciview values for the haziest and clearest days, and comparing these current conditions against baseline conditions as well as impairment levels at the time of the last SIP revision. (See unit III.E above for further discussion about establishing baseline and current conditions based on 5-year averages.)

G. Long term Strategy

Proposed Rule. Under Section 169A(b)(2) of the CAA, EPA's visibility regulations must require States to include in their SIPs "such emission limitations schedules of compliance and other measures as may be necessary to make

reasonable progress toward meeting the national goal specified in ... [section 169A(a)]..." In section 169A(b)(2)(B), the CAA requires that these SIPs must include a "long term (ten to fifteen years) strategy for making reasonable progress toward meeting the national goal." The EPA interprets the term "long term strategy" as the control measures that are needed to ensure reasonable progress, together with a demonstration that those measures will provide for reasonable progress during the 10 to 15 year period. The proposed rule requires the State to develop a long term strategy for regional haze with the initial regional haze SIP, and to provide for regular updates. (Issues with regards to updates of the long term strategy are discussed below in section III.J).

The proposal also required States to consider a specific list of factors when they developed their long term strategies for regional haze. Under the proposal, in developing long term strategies for regional haze States would be required to consider the six items listed in §306(e) of the 1980 rule, and the five items listed in §306(g) of the 1980 rule. We proposed to add a seventh item to §306(e), "the anticipated effect on visibility due to projected changes in point, area and mobile source emissions over the next 10 years."

Public Comments. Public commenters on the long term strategy requirement expressed concerns that the proposed rule had over-emphasized stationary source contributions, and had under-emphasized contributions from minor sources, area sources, mobile sources and prescribed fires. Other commenters expressed concerns that control strategies would be ineffective in cases where contributions from international sources were causing visibility impairment. Commenters also emphasized that States be able to take credit in their long term strategies for the effects of existing CAA programs.

We did not receive any comments on the specific list of factors to consider in developing long term strategies.

Final rule. As discussed further below in unit III.J of today's notice, the final rule requires control strategies to cover an initial implementation period extending to the year 2018, with a reassessment and revision of those strategies, as appropriate, every 10 years. The final rule, in §51.308(d)(3), adopts the proposed requirement that regional haze SIPs include a long term strategy. The long term strategy must include specific enforceable measures that are sufficient to meet the "reasonable progress goals" for all Class I areas affected by emissions from the State.

Multistate contributions-- requirements for consultation and apportionment. As noted in §51.308(d)(3)(i), when a State's emissions are reasonably anticipated to cause or contribute to impairment in a Class I area located in another State or States, the rule requires that the State consult with the other State or States in order to develop coordinated emission management strategies. Regarding the Class I areas within the State, §51.308(d)(3)(i) also requires States to consult with any other State having emissions that are reasonably anticipated to contribute to impairment in any Class I area within the State.

For Class I areas where the State and other States cause or contribute to impairment in a mandatory Class I area, §51.308(d)(3)(ii) requires that the State must demonstrate that it has included in its implementation plan all measures necessary to obtain its share of the emissions needed to meet the progress goal for the area. Section 51.308(d)(3)(iii) requires that States must document the technical basis, including modeling, monitoring and emissions information, that it used to determine its apportionment of emission reduction obligations for the Class I areas the State affects. It is important that EPA and stakeholders understand modeling, monitoring and

emission information that the State uses to support its conclusion that the long term strategy provides for reasonable progress.

The EPA expects that much of the consultation, apportionment demonstrations, and technical documentation will be developed by regional planning organizations. We expect, and encourage, these efforts to develop a common technical basis and apportionment for long term strategies that could by approved by individual State participants, and translated into regional haze SIPs for submission to EPA. While States are not bound by the results of a regional planning effort, nor can the content of their SIPs be dictated by a regional planning body, we expect that a coordinated regional effort will likely produce results the States will find beneficial in developing their regional haze implementation plan. Any State choosing not to follow the recommendations of a regional body would need to provide a specific technical basis that its strategy nonetheless provides for reasonable progress in based on the statutory factors. At the same time, EPA cannot require States to participate in regional planning efforts if the State prefers to develop a long term strategy on its own. We note that any State that acts alone in this regard must conduct the necessary technical support to justify their apportionment, which generally will require regional

inventories and a regional modeling analysis. Additionally, any such State must consult with other States before submitting its long term strategy to EPA.

Consideration of all anthropogenic sources. In the final rule, we have clarified in section 51.308(d)(3)(iv) that the State should consider all types of anthropogenic sources including stationary, minor, mobile, and area sources in developing its long term strategy. The State should review all such sources in identifying the emission reduction measures to be included in the strategy. In addition we provide the following points of clarification:

Minor sources: Because of the focus of the BART provision on major stationary sources, the EPA believes that commenters may have the impression that EPA has concluded that minor sources with emissions, below the BART cutoff of 250 tons per year, are not significant contributors to regional haze. This is not the case. The EPA believes that States should take the cumulative emissions from minor sources into account in developing their regional haze long term strategies. For example, if growth in minor source emissions for a particular category had a substantial impact on emission trends and a corresponding affect in regional haze in a given geographic area, States may wish to consider

emission control strategies for such source categories as part of their long term strategies.

Mobile sources: In cases where pollutants emitted by mobile sources contribute to regional haze, SIPs States must include in their mobile source emissions inventories representing current conditions, and comparisons of those emissions with emission projections for the end of the 10-year period covered by the long term strategy. It will be particularly important for States to address the effects of population growth and accompanying increases in vehicle miles traveled on their ability to provide for reasonable progress. The EPA agrees with commenters that national mobile source emission standards will be also be an important factor in projecting mobile source emissions. The EPA intends to support States in their efforts to estimate mobile source emissions (including the effects of Federal rules) for haze-contributing pollutants.

Area sources: States also need to develop emission inventories and conduct analyses to understand the importance of area sources. For example, the GCVTC report cited emissions from road dust as a possible contributor to impairment. Depending on the nature of the visibility problem, road dust and other area sources may at times make a significant contribution to visibility impairment. States

should include area sources in emission inventories and control strategy analyses as warranted.

Fire: Commenters expressed a number of concerns with respect to the appropriate consideration of emissions from fire in the development of long term strategies.

The EPA notes that fire emissions have both a natural and a man-made component. In addressing fire emissions in long term strategies, the EPA believes that States must take into account the degree to which fire emissions cause or contribute to "man-made" visibility impairment and its contribution to natural background conditions. Reducing "man-made" visibility impairment is the focus of sections 169A and 169B of the CAA. The EPA recognizes the natural role of fire in forest ecosystems, and the fact that forest fuels have built up over many years due to past management practices designed to protect public health and safety through fire suppression. Research has shown that these practices have led to an increased risk of catastrophic wildfire as well as reduced forest health. In response to this situation, the Federal land management agencies, as well as some States and private landowners, have recommended the increased use of prescribed fire in order to return certain forest ecosystems to a more natural fire cycle and to reduce the risk of adverse health and environmental impacts due to catastrophic wildfire.

The EPA also recognizes that fire of all kinds (wildfire, prescribed fire, etc.) contributes to regional haze, and that 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 ecosystems may lead to PM emissions levels lower than those that would be expected from catastrophic wildfire. Given that the purpose of prescribed fire in many instances is to restore natural fire cycles to forest ecosystems, it would be appropriate to consider some portion of prescribed fire as "natural." Consequently in determining natural background for a Class I area, EPA believes States should be permitted to consider some amount of fire in the calculation to reflect the fact the some prescribed fire effects serve merely to offset what would be expected to occur naturally. The EPA will work with the Federal Land Managers, States and other stakeholders to develop guidance on ways in which fire can be considered in the determination of natural background, and in the determination baseline and current conditions.

Commenters asserted that in the proposed rule, the EPA ignored the contribution of fires and thus overlooked the most important haze-contributing emission source in many Class I areas. The EPA agrees that fire is an important emission source to include in the analysis, but current data

do not show that fire is the predominant source of visibility impairment in any Class I area. Annual data from the IMPROVE network show that elemental carbon (which we generally use as the main indicator of emissions from fire and other combustion sources such as diesel emissions), accounts for only about 3-7% of PM_{25} mass on the worst visibility days in eastern sites. In western sites, elemental carbon accounts for about 4-9% of total PM_{25} mass on the worst days. The contribution from fires can be substantial over short-term periods, but fires occur relatively infrequently and thus have a lower contribution to long term averages. Fire events making substantial contributions to haze in a given Class I area have occurred relatively infrequently, and as a practical matter will contribute less than sources for which emissions are more continuous. As noted previously, the final rule requires States to develop long term strategies for regional haze that address 5-year averages of the 20 percent worst days. These 5-year averages will also be used in evaluating monitoring results. The frequency with which fires occur will effect the importance of their emissions on predicted future 5-year averages for visibility conditions on the 20 percent worst days.

Commenters expressed concerns with the expected increase in emissions from prescribed burning on Federal lands. Specifically, the commenters asserted that States would not be able to address emission increases from these prescribed burns, and that stationary sources would be required to compensate for the increased amount.

The EPA believes these commenters are mistaken in their view of State's authority to address emissions from prescribed Federal burns. Pursuant to section 118 of the CAA, when States impose requirements on sources, Federal agencies must comply with those requirements in the same manner, and to the same extent, as any nongovernmental entity. States therefore have the authority to address emissions from prescribed Federal burns in the same manner, and to the same extent, they regulate prescribed fires generally. Additionally, to the degree that States determine in the development of long-range strategies that the man-made component of fire is a significant contributor to regional haze, States have a substantial degree of flexibility under the CAA and in the final rule. The final rule provides States flexibility in determining the amount of progress that is "reasonable" in light of the statutory factors, and also provides flexibility to determine the best mix of strategies to meet the reasonable progress goal they select. Nothing in the final rule requires States to

develop long term strategies that reduce emissions from other sources by amounts equivalent to any increases from the man-made fraction of prescribed fires. We do expect that States consider and analyze the full range of available control measures and that they consider the causes of visibility impairment when evaluating the potential measures to include in their long term strategies.

The EPA encourages the development of smoke management programs between air regulators and land managers as a means to manage the impacts of wildland and prescribed burning. The sources of information described above, as well as other developmental efforts currently underway, provide effective, flexible approaches to smoke management. Where smoke impacts from fire are identified as an important contributor to regional haze, smoke management programs should be a key component of regional and State regional haze planning efforts and long term strategies.

There are a number of sources of information on mitigation approaches for fire emissions, including (1) the EPA Interim Air Quality Policy on Wildland and Prescribed Burning, (2) fire-related strategies developed by the GCVTC and (3) the best available control methods (BACM) document. In the Interim Air Quality Policy on Wildland and Prescribed Burning, the EPA, in collaboration with a national stakeholder group comprised of Federal, State, and private

land managers, State air regulators, environmental groups, tribes, and others, developed a framework for managing the impacts of smoke from increased prescribed fire programs across the country. This policy describes the elements and process of smoke management planning that air regulators and land managers can use to reach agreement on development of smoke programs. The GCVTC included a number of long term strategies for fire in its report and recommendations, including emissions tracking and emission goals for fire, smoke management programs, and full consideration for alternatives to fire. The GCVTC's strategy is illustrative of the available mitigation approaches for emissions from fire that other States may consider. The GCVTC's approach is contained in §51.309(d)(6) of the final rule and discussed further in unit IV.C of this notice. The BACM document, Prescribed Burning Background Document and Technical Information Document, EPA-450/2-92-003, is organized to discuss various aspects of State smoke management programs. The document includes information on how States administer and enforce programs for burn/no-burn, and information on various topics including emission inventories, cost estimation, and public information programs.

Transboundary emissions from sources outside the United States: Some class I areas located near international

borders are particularly prone to influence by emissions beyond the United States border. Commenters expressed concerns that EPA should take into account that States are not able to control international sources in reviewing a State's proposal for a reasonable progress target. Additionally, commenters urged EPA to work with Mexico and Canada to reduce emissions from sources that States determine to be significant contributors to regional haze in their Class I areas.

The EPA agrees that the projected emissions from international sources will in some cases affect the ability of States to meet the reasonable progress goal. The EPA does not expect States to restrict emissions from domestic sources to offset the impacts of international transport of pollution. We believe that States should evaluate the impacts of current and projected emissions from international sources in their regional haze programs, particularly in cases where it has already been well documented that such sources are important. At the same time, EPA will work with the governments of Canada and Mexico to seek cooperative solutions on transboundary pollution problems.

Factors to Consider for Long term Strategies. In §51.308(d)(3)(v)(A) through (G) the final rule, we have

incorporated a list of seven factors that States must consider in developing long term strategies. The in the final rule include six factors in the July 1997 proposal that are derived from §51.306(e) of the existing rule, and the additional item, "the anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the period addressed by the long term strategy" that was specifically added by the July 1997 proposal. We have decided not to include the five proposed items that are derived from §51.306(g), because four of these items are include on the list of "reasonable progress" factors in §308(d)(1)(i)(A) of the final rule, and because we believe that the fifth factor "effect of new sources" is part of "projected changes in point source emissions."

In their regional haze SIP submissions, States must describe how each of these seven factors is taken into account in developing long term strategies. We believe it is useful to clarify several of these factors, and EPA's expectations on how SIPs can address them.

Item (A): Emissions due to ongoing air pollution control programs, including measures to address reasonably attributable visibility impairment

It is expected that for some areas of the country, such as parts of the eastern United States, emissions achieved

for the acid rain program and for meeting the $PM_{2.5}$ NAAQS, will lead to substantial improvements in visibility as well. Item (A) makes clear that States must take these other emissions into account in developing their long term strategies for regional haze. We expect that some States may be able to demonstrate reasonable progress based on these emissions alone, particularly for the first 10-year period.

Item (B) Measures to mitigate the impacts of construction activities

Item(B) requires that in developing long term strategies, States must consider the impacts of construction activities. States, for example, should include these activities in emission inventories used for long term strategy development.

Item (C) Additional measures and limitations and schedules for compliance to achieve the reasonable progress goal

Where emissions from ongoing requirements, addressed by item (A), are not sufficient to achieve the reasonable progress goal, States must identify additional measures that will ensure that the goal will be met. Schedules for compliance for these additional measures must be included in the SIP, and measures considered for inclusion must be identified in the SIP submission.

Item (D) Source retirement and replacement schedules

Item (D) requires the consideration of source retirement and replacement schedules in developing the long term strategies, particularly where these schedules would have a significant impact on regional emission loadings and on a State's ability to achieve reasonable progress.

Item (E): Smoke management techniques for agricultural and forestry management purposes including plans as currently exist within the State for these purposes

Item (E) highlights the widely recognized importance of prescribed burning programs on regional haze. Issues related to fire and forestry management practices are discussed above.

Item (F) Enforceability of emissions limitations and control measures

States must ensure that control measures are written in a way that EPA and citizens may enforce as a practical matter. Guidance on practical enforceability issues is readily available in EPA policy guidance memoranda, for example Guidance on Limiting Potential to Emit in New Source Permitting, June 13, 1989.

Item (G): The anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the next 10 years.

Item (G) requires that States must address the anticipated net effect on visibility due to projected

changes in point, area, and mobile source emissions over the next 10 years when developing emissions strategies that will meet the reasonable progress requirements. In some areas, these changes in emissions would be expected primarily from population growth, while in others, emissions changes may result from potential new industrial, energy, natural resource development, or land management activities. These changes in emissions would include the changes due to measures developed specifically for the regional haze program.

Relationship to Long term Strategies under the Existing Rule. The final rule provides for coordination of the long term strategies with any existing long term strategies under the 1980 visibility rule. Some long term strategies are already in place to address reasonably attributable visibility impairment under the existing 1980 regulation. Coordination of the two programs is addressed in §306(c) of the final rule. This section clarifies two points. First, that the provisions of existing long term strategies will continue to apply until regional haze strategies are in place. Second, once the first regional haze strategy is in place, the final rule, in §306(c)requires the State to develop a coordinated long term strategy which address both reasonably attributable impairment and regional haze.

H. Best Available Retrofit Technology (BART).

Background. One of the principal elements of the visibility protection provisions of the CAA is the provision in section 169A addressing the installation of the best available retrofit technology (BART) for certain existing sources. The conference committee report accompanying the 1977 CAA amendments indicates that a major concern motivating the adoption of the visibility provisions was "the need to remedy *existing* pollution in the Federal mandatory class I areas from *existing* sources."[85] The BART provision in section 169A(b)(2)(A) demonstrates Congress' intention to focus attention directly on the problem of pollution from a specific set of existing sources. This provision provides that EPA's regulations to protect visibility must require States to revise their SIPs to contain such measures as may be necessary to make reasonable progress toward the national visibility goal, including a requirement that certain existing stationary sources procure, install, and operate the "best available retrofit technology."

The CAA defines the sources potentially subject to BART as major stationary sources, including reconstructed

[85] H.R. Rep. No. 564, 95th Cong., 1st Sess. at 155 (1977) (emphasis added).

sources, from one of 26 identified source categories which have the potential to emit 250 tons per year or more of any air pollutant, and which were placed into operation between August 1962 and August 1977.[86] This set of sources potentially subject to BART was defined in the 1977 CAA and will not be modified by rule. The 26 source categories are:

(1) Fossil-fuel fired steam electric plants of more than 250 million British thermal units per hour heat input,

(2) Coal cleaning plants (thermal dryers),

(3) Kraft pulp mills,

(4) Portland cement plants,

(5) Primary zinc smelters,

(6) Iron and steel mill plants,

(7) Primary aluminum ore reduction plants,

(8) Primary copper smelters,

(9) Municipal incinerators capable of charging more than 250 tons of refuse per day,

(10) Hydrofluoric, sulfuric, and nitric acid plants,

(11) Petroleum refineries,

(12) Lime plants,

(13) Phosphate rock processing plants,

(14) Coke oven batteries,

(15) Sulfur recovery plants,

[86] See CAA sections 169A(b)(2)(A) & (g)(7).

(16) Carbon black plants (furnace process),

(17) Primary lead smelters,

(18) Fuel conversion plants,

(19) Sintering plants,

(20) Secondary metal production facilities,

(21) Chemical process plants,

(22) Fossil-fuel boilers of more than 250 million British thermal units per hour heat input,

(23) Petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels,

(24) Taconite ore processing facilities,

(25) Glass fiber processing plants, and

(26) Charcoal production facilities.

In section 51.301(e) of the 1980 visibility regulations, a source meeting the above criteria was defined as an "existing stationary facility." In today's regional haze rule, EPA has added the definition of a "BART-eligible source" that is identical to the definition of "existing stationary facility." This new definition is used throughout the regional haze rule and preamble in order to avoid the potential misinterpretation of the "existing stationary facility" definition as representing a collection of sources broader than the subset of sources potentially subject to BART.

The regulations issued in 1980 define BART as "an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted" by a BART eligible facility.[87] The BART emission limitation must be established, on a case-by-case basis, taking into consideration the following factors:

- the technology available,
- the costs of compliance,
- the energy and nonair 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 from the use of such technology.[88]

The EPA published guidelines in 1980 which outline the general procedures for States to follow in analyzing sources and establishing BART emission limits.[89] These guidelines

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[87] section 51.301(c).

[88] Id.

[89] See EPA Office of Air Quality Planning and Standards, Guidelines for Determining Best Available Retrofit Technology for Coal-Fired Power Plants and Other Existing Stationary Facilities, EPA-450/3-80-009b, November 1980.

apply to situations in which visibility impairment in the Class I area is determined to be “reasonably attributable” to a single source or a small group of sources.

Proposed Rule. The proposed regional haze rule discussed a process for addressing BART in the context of regional haze and requested comment on how the requirement should be implemented.

The first step in this process was a requirement that the State identify all sources potentially subject to BART early in the planning process. The second step required the State to submit a plan and schedule for evaluating BART and the corresponding potential emissions for those existing sources which may reasonably be anticipated to contribute to regional haze visibility impairment. The notice proposed to provide 3 years for completing this evaluation so that the results could be taken into consideration by States as they develop coordinated strategies for attaining the $PM_{2.5}$ and ozone NAAQS.

In setting out the proposed approach to the BART requirement, EPA proposed that the test for determining whether a BART-eligible source “may reasonably be anticipated to contribute” to regional haze should be evaluated in the context of the overall emissions reduction strategy. The EPA also noted that it believed that a

similar approach should be taken in addressing the “the degree of improvement in visibility which may reasonably be anticipated” from the imposition of BART controls. The EPA proposed a cumulative approach because of the nature of the regional haze problem (i.e. the cumulative product of emissions from many sources over a broad area) and because of the time and expense necessary to try to determine, one source at a time, the percentage contribution of each BART-eligible source to regional haze. In addition, EPA noted the substantial technical difficulties associated with estimating the degree of visibility improvement resulting from a single source. The EPA broadly requested comments on effective approaches for States and sources to meet the BART requirement under the regional haze program in the most appropriate manner, and in particular how BART, once determined, should be implemented.

Comments Received. Commenters identified a number of issues concerning how EPA should address the BART requirement under the regional haze program. Some commenters asserted that the BART requirement simply should not apply under the regional haze program. These commenters argued that the procurement, installation, and operation of BART is not explicitly required under section 169B, and that section 169B is the primary statutory authority for the regional

haze program. Other opponents of the BART requirement contended that the proposal placed too much emphasis on stationary sources, and on BART sources in particular, as opposed to other sources of visibility-impairing pollutant emissions, such as mobile and area sources. The commenters contended that BART should not be the principal control strategy employed under the regional haze program.

Another group of commenters supported EPA's proposed approach for addressing the BART requirement. Some pointed out that while existing stationary sources are not the only contributors to regional haze, controlling these sources is an essential element of a national regional haze program. These commenters also supported the approach of evaluating BART-eligible sources collectively to determine their overall contribution to visibility impairment within a given airshed. Several commenters recommended that BART be equivalent to, or more stringent than, new source performance standards (NSPS) for sulfur dioxide and nitrogen oxides. Some commenters suggested allowing an emissions cap and trade program to meet the BART requirement. One commenter described a process whereby States would conduct an assessment of the availability of retrofit controls for all BART-eligible sources in a region, calculate the cumulative emissions possible from application of BART to eligible sources, establish a cap for each visibility-

reducing pollutant, and implement a 10-year program to achieve emissions equivalent to the emissions cap.

Response to Comments. The EPA disagrees with the commenters who argued that the BART requirements should not apply to the regional haze program. The statutory authority for developing a regional haze program emanates from section 169A of the CAA, and any SIPs that are to be developed under a regional haze program must include provisions that meet the requirements of this section, including the requirement that certain sources procure, install, and operate BART.

Since 1977, section 169A of the CAA has authorized EPA to address regional haze. Section 169A(a)(1) of the CAA establishes as the national visibility protection goal "the prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution." Visibility impairment is defined broadly in the CAA and includes that caused by regional haze[90]. This language does not distinguish between reasonably attributable impairment and regional haze, but provides for visibility protection generally. This reading of the statute is consistent with the legislative history; in adopting section 169A, Congress evinced its intent to

[90] See CAA section 169A(g)(6); see also Maine v. Thomas, 874 F.2d.883, 885 (1st Cir. 1989)("EPA's mandate to control the vexing problem of regional haze emanates directly" from CAA section 169A).

address impairment caused by “hazes” and the potential corresponding need to control a “variety of sources” and “regionally distributed sources.”[91] While EPA deferred addressing regional haze in 1980 when it promulgated the first phase of visibility regulations, it did so because of technical obstacles, not because of a limitation on its legal authority.[92] Indeed, in the 1980 rule EPA expressed its intent to address regional haze in a future rulemaking under section 169A. Thus, EPA’s decision to address visibility impairment in separate phases does not change the fact that the BART requirement is an integral part of the statutory scheme in section 169A.

The provisions in section 169B of the CAA, adopted in 1990, do not override EPA's statutory authority to require State plans to remedy regional haze. These provisions grew out of Congress’ frustration that EPA had not more expeditiously addressed regional haze under its section 169A delegated rulemaking authority. Thus, section 169B(e) explicitly requires EPA to carry out its “regulatory responsibilities under section [169A]” within a set time period. The legislative history confirms that Congress did not intend section 169B to impinge upon EPA’s long-standing

[91] H.R. Rep. No. 294, 95th Cong., 1st Sess. 204 (1977).

[92] 45 FR 80084 (Dec. 2, 1980).

authority to address regional haze visibility impairment,[93] including the authority to require BART. The EPA believes that commenters asserting that EPA overemphasized the control of stationary sources and, in particular, the role of BART in the regional haze program misinterpreted the proposal. The EPA did not intend to emphasize controls on BART-eligible sources over, or to the exclusion of, other sources. While the BART requirement is limited to a specified population of major stationary sources, States will need to consider measures addressing a wide range of sources and activities, including mobile sources, area sources, activities involving fire, and other major and non-major stationary point sources in their long term strategies. The unit on long term strategies includes further discussion of this point.

Final Rule. The final rule requires each implementation plan to be revised to contain two basic elements related to BART. The first is the requirement that the States submit a list of the "BART-eligible sources" in

[93] See 136 Cong.Rec. S2878 (daily ed. March 21, 1990) (statement of Sen. Adams) ("[t]he authority to establish visibility transport regions and commissions is a supplement to the administrators [sic] obligation under current law . . . The Administrator may not delay requirements under section 169A because of the appointment of a commission for a region under section 169B") (daily ed. Oct. 26, 1990) (statement of Rep. Wyden) ("[n]either the original House language nor the Senate language adopted in conference repealed or lessened EPA's obligations under the 1977 law").

the State. Second, the State must determine and include in the plan the "best available retrofit technology," taking into account certain factors identified in section 169A(g)(2) of the CAA, for each BART-eligible source in the State reasonably anticipated to cause or contribute to any impairment of visibility.

In recognition of the control and cost efficiencies that can be achieved through trading programs and other alternative measures, EPA is providing States with the opportunity to adopt alternative measures in lieu of BART where such measures would achieve even greater reasonable progress toward the national visibility goal. The overarching requirement of the visibility protection provisions of section 169A is to make reasonable progress toward the national goal of eliminating visibility impairment. If greater reasonable progress can be made through an approach that does not require source specific application of BART, EPA believes that approach would comport with this statutory goal. The EPA reached this conclusion in determining the appropriate measures to address visibility impairment in the Grand Canyon National Park resulting from the Navajo Generating Station.[94] In that case, EPA ultimately chose not to adopt the emission

[94] See Central Arizona Water Conservation District v. EPA, 990 F.2d 1531, 1543 (1993).

control limits indicated by its BART analysis.[95] Instead, as explained by the Ninth Circuit in upholding EPA's final decision, EPA acted within its discretion in adopting an alternative emission control standard "that would produce greater visibility improvement at a lower cost. Congress's use of the term 'including' in [section 169A(b)(2)] prior to its listing BART as a method of attaining 'reasonable progress' supports EPA's position that it has the discretion to allow States to adopt implementation plan provisions other than those provided by source-specific BART analyses in situations where the agency reasonably concludes that more 'reasonable progress' will thereby be attained."[96] Under today's final rule, States may elect to adopt an emissions trading program or other alternative measures in lieu of BART so long as greater reasonable progress is made.

List of BART-eligible Sources. To ensure adequate time for developing long term strategies to ensure reasonable progress, we recommend that States begin identifying and evaluating the list of potential BART sources as soon as possible after promulgation of the final rule. Identifying the BART-eligible sources will require States to collect information as to the dates that emission units at

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[95] See 56 Fed. Reg. at 50178.

[96] Central Arizona Water Conservation District v. EPA, 990 F.2d 1531, 1543 (1993).

stationary sources were placed into operation, the pollutants emitted, and the potential to emit of these units. We suggest that, at the same time that they begin refining their emissions inventories for $PM_{2.5}$ and its precursors, States request that stationary sources provide them with these dates. While such information is generally available for electric utilities through data bases maintained by the Energy Information Administration, this information is not normally maintained in national data bases for the other 25 source categories subject to BART. However, EPA believes that much of this information is likely to be available in State permitting data bases or other inventories. To assist the States in this task, we will continue efforts to identify other helpful sources of information.

Determination of Sources Subject to BART. After the State has identified the BART-eligible sources, the next step is determining whether these sources emit any air pollutant "which may reasonably be anticipated to cause or contribute" to any visibility impairment in a Federal Class I area. As noted in the proposal, EPA believes that this determination should not require extremely costly or lengthy studies of the contribution of specific sources to regional haze. Unlike the 1980 regulatory program, which addresses

the visibility impairment that is reasonably attributable to a specific source or small group of sources, today's final rule addresses the problem of visibility impairment resulting from emissions from a multitude of sources located across a wide geographic area. As the regional haze rule is not limited to addressing visibility impairment that can be attributed to a specific source or small group of sources, EPA believes it would be inappropriate to focus on the contribution of one source or a small group of sources. First, the States will not face the same need to define the precise contribution from one particular source to the visibility problem. Second, establishing the contribution from one particular source to the problem of regional haze problem would require lengthy and expensive studies and pose substantial technical difficulties. The EPA has thus concluded that a detailed source-receptor analysis would not be appropriate in determining whether a source "may reasonably be anticipated to contribute" to regional haze in a Class I area.

In implementing today's rule, a State should find that a BART-eligible source is "reasonably anticipated to cause or contribute" to regional haze if it can be shown that the source emits pollutants within a geographic area from which pollutants can be emitted and transported downwind to a Class I area. The EPA believes that this test is an

appropriate one for determining whether a source can reasonably be anticipated to cause or contribute to the problem of regional haze. As the Ninth Circuit stated in considering this language:

> Congress mandated an extremely low triggering threshold, requiring the installment of stringent emission controls when an individual source "emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility" in a Class I Federal area. 42 U.S.C. sec. 7491(b)(2)(A). The NAS correctly noted that Congress has not required ironclad scientific certainty in establishing the precise relationship between a source's emission and resulting visibility impairment...[97]

The approach taken here is consistent with that taken in the programs for acid rain and ozone, programs which also address regional air quality problems caused by transported pollutants. These programs do not require a specific demonstration of each source's contribution to the overall problem, but instead focus efforts on developing cost-effective solutions to reducing emissions over a broad area that is regional or national in scope. For example, in the

[97] Central Arizona Water Conservation District v. EPA, 990 F.2d 1531, 1541 (9th Cir. 1993).

recent NO_x SIP call addressing the regional transport of NOx emissions (an ozone precursor) in the eastern United States, EPA adopted a "collective contribution" approach to determining whether sources "contribute" to ozone nonattainment in downwind areas. In this rulemaking, EPA concluded that because ozone nonattainment results from the collective contribution of many entities over a broad geographic area, even relatively small (in an absolute sense) contributions from upwind entities should be considered to be "significant."[98]

The EPA has concluded that a similar approach in the regional haze program is appropriate. Where emissions from a region are considered to contribute to regional haze in a Class I area, any emissions from BART-eligible sources in that region should also be considered to cause or contribute to the regional haze problem. The EPA will issue and update guidance, including EPA modeling guidelines,[99] to assist the States in analyzing whether sources contribute to regional haze.

Establishing Source-Specific BART Emission Limits. The second element of the BART requirement is for the States to

[98] 63 FR 57356, 57376 (Oct. 27, 1998).

[99] See 40 CFR Part 51, Appendix W for information on EPA's modeling guideline for conducting regional-scale modeling for particulate matter and visibility.

establish emission limitations for those BART-eligible sources which may reasonably be anticipated to cause or contribute to regional haze. To meet this requirement, the State must develop source specific emission limits which reflect the application of the best system of continuous emission reduction for each pollutant which is emitted by a source subject to BART.[100] As stated above, the State can also choose to develop an emissions trading program, or other alternative measures, that achieve greater reasonable progress rather than require source specific BART emission limits on each source subject to BART.

In developing source specific emission limits for BART, the State must take into consideration the technology available and a number of specific factors set forth in the statute. These factors are the costs of compliance, the energy and nonair environmental impacts of compliance, any existing pollution control technology in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated from the use of such technology.[101] Taking these factors into account, the State may conclude that BART is the best level of emissions reduction that can be achieved

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[100] See section section 51.301(c).

[101] See CAA section 169A(g)(2).

by available retrofit technology or some other level of control. In some cases, the State may determine that a source has already installed sufficiently stringent emission controls for compliance with other programs (e.g. the acid rain program), such that no additional controls would be needed for compliance with the BART requirement. In establishing BART for a particular facility, the State must make available during public review of the SIP at the State level the materials supporting its BART determination. The State must also include this documentation in the technical support materials accompanying the SIP.

In establishing source specific BART emission limits, the State should identify the maximum level of emission reduction that has been achieved in other recent retrofits at existing sources in the source category. As noted above, the visibility regulations define BART as “an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction.” Recent retrofits at existing sources provide a good indication of the current “best system” for controlling emissions. Thus, for example, recent retrofits for large utility sources (e.g. sources under the acid rain program and the Navajo Generating Station) have commonly achieved a 90% or better rate of SO2 emissions (at an

average cost of $265 per ton of SO2 removed).[102] For source categories with recently promulgated new source performance standards (NSPS), that standard may also provides a good indication of the current "best system" for controlling emissions. In addition, current information concerning control technology performance for many source categories is available from EPA's Clean Air Technology Center, **http://www.epa.gov/ttn/catc.** EPA plans to issue revised BART guidance to provide updated guidance to the States on how to calculate BART for purposes of regional haze within a year of promulgation of this rule. The EPA will be developing this guidance through a national stakeholder process.

Once the State has identified the retrofit technology that provides the maximum degree of continuous emission reduction, it should take into consideration the costs of compliance, the energy and nonair quality environmental impacts of compliance, any existing pollution control equipment in use at the source, and the remaining useful life of the source. Taking these factors into account allows the State to arrive at an estimate of the "best

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[102] Ellerman, A. Danny et al., Emissions Trading Under the U.S. Acid Rain Program: Evaluation of Compliance Costs and Allowance Market Performance, Massachusetts Institute of Technology, Center for Energy and Environmental Policy Research, 1997.

system" of retrofit control technology for a particular source and a corresponding estimate of the likely emissions which would be achieved by the imposition of BART. These factors should be taken into account for each source subject to BART in order to compare tradeoffs between the control efficiencies and costs associated with various control alternatives.

The remaining factor which the States must take into account in determining BART is "the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology." In applying this factor in the context of the regional haze program, a State should use the degree of improvement in visibility that would be expected at each Class I area as a result of imposing BART, as determined through the application of the factors discussed above, on all sources subject to BART. For the same reasons that the determination of whether a BART-eligible source may be reasonably anticipated to cause or contribute to a visibility problem should be made on a cumulative basis, EPA believes that a regional analysis is appropriate for determining the degree of visibility improvement that can be achieved through application of BART. Moreover, the statute requires the States to consider "the degree of improvement in visibility which may reasonably be anticipated to result <u>from the use of such</u>

technology."[103] EPA interprets the language "from the use of such technology" to refer to the application of BART level controls to all sources subject to BART. As a result, EPA believes that it is reasonable to interpret this provision as requiring the State to consider, as part of its source-specific analysis, the cumulative impact of applying retrofit controls to all sources subject to BART to estimate the degree of visibility improvement which may reasonably be anticipated to result from the use of BART.

The EPA also believes that such a regional analysis provides important information to the State and to the public about the magnitude of potential emissions from sources subject to BART. This information could be used to help inform the public debate in developing reasonable progress goals, in setting a regional emissions target for a trading program, and in developing the overall long term strategies for making reasonable progress.

To calculate the degree of improvement in visibility that would be expected at each Class I area as a result of imposing BART on all sources subject to BART, the State should estimate the possible emissions reductions resulting from the application of BART at all subject sources located within the region that contributes to visibility impairment

[103] CAA § 169A(g)(2)(emphasis added).

in the Class I area. The State should work on its own or in conjunction with other States, such as in a regional planning body, to determine the geographic scope of the region that contributes to each Class I area. The States should consult with one another to determine the emission reductions achievable from sources subject to BART in other States.

The estimate of possible emission reductions from sources subject to BART should be based on the application of the technology, cost, time for compliance, energy and nonair environmental impacts, and remaining useful life factors discussed above. Using this estimate, the State will then need to calculate the resulting degree of visibility improvement that would be achieved at Class I areas. The EPA expects that this exercise will be in the form of a regional modeling analysis. The State should use this estimated degree of visibility improvement in determining the appropriate BART emission limitations for specific sources.

Unless a State commits to regional planning, a State must include its source-specific BART determinations in its initial SIP revision for the area in which the source is

located.[104] Where the State commits to regional planning, a State may defer submitting its source-specific BART determinations consistent with the timing requirements described in unit III.B. However, the State must submit its list of BART-eligible sources at the same time it submits its committal SIP.

The SIP revision must include the emission limitations determined to be BART for sources subject to BART and a compliance schedule for each source. Each source subject to the BART requirement will have to meet the BART emission limitation within 5 years of SIP approval, as required under the CAA. As noted above, within a year, EPA will be issuing revised BART guidance to provide States with assistance in determining BART for regional haze.

Alternative Measures in Lieu of BART. In today's rule, States may elect to adopt alternative measures, such as a regional emissions trading program, in lieu of BART so long as the alternative measures achieve more reasonable progress than would application of source-specific BART. The EPA believes that a regional emissions trading program would be the most efficient means of achieving BART-level emission

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[104] For areas designated attainment or unclassifiable for $PM_{2.5}$, this SIP will be due 12 months after the areas are designated. For areas designated as nonattainment, this SIP will be due no later than three years after the area is designated nonattainment.

reductions and the emission reductions needed to meet the States' reasonable progress goals as implemented through the States' long term strategies.

The EPA believes that this approach is consistent with the Ninth Circuit's decision in Central Arizona Water Conservation District v. EPA.[105] In this case, the court upheld EPA's exercise of discretion to adopt an alternative emission standard that achieved greater reasonable progress than would have been achieved through the imposition of BART. Allowing States to adopt alternative measures such as an emissions trading program rather than to require BART will provide the States with the flexibility to achieve greater reasonable progress towards the national goal at a lower cost, while still addressing the Congressional concern that existing sources contributing to visibility impairment be required to control emissions appropriately. The EPA believes that this best fulfills the overarching statutory requirement in section 169A(b) that States make reasonable progress toward the national visibility goal, but also ensures that, at a minimum, the degree of visibility impairment attributable to BART sources is addressed by the States during the first long term strategy. Moreover, while an appropriately designed alternative might result in

[105] 990 F.2d 1531, 1543 (1993).

differing levels of control at particular sources than a source-by-source BART requirement, the environment will benefit through the achievement of greater reasonable progress.

As noted above, to take advantage of the flexibility offered by this provision, the State must demonstrate that the alternative measures adopted in lieu of meeting the BART requirements achieve greater reasonable progress than would result from the installation of source specific BART. One way of making this showing is for a State to show in its SIP demonstration that the alternative measures will achieve greater emission reductions and visibility improvement than would result from meeting the BART requirements.

In making this showing, States may rely on the assessments and analyses developed by regional planning groups that are formed to address regional haze. To compare the emissions reductions and visibility improvement that would result from application of source specific BART to that resulting from implementation of alternative measures, such as a regional emissions trading program, the State must estimate the emissions reductions that would result from the use of BART-level controls. To do this, the State could undertake a source specific review of the sources in the State subject to BART, or it could use a modified approach that simplifies the analysis.

To simplify the process of arriving at an estimate of emissions, EPA believes that one approach that would be acceptable in place of a source by source BART analysis would be to consider some of the BART factors on a category-wide basis. For example, the average cost per ton of complying with alternate control technologies and associated energy and nonair environmental impacts could be considered on a category-wide basis. It may be more appropriate to consider other factors on a source by source basis. For example, the State could identify the current control technology in operation at each source and calculate the emissions that would be achieved at each source with a given retrofit control technology or determine and consider the remaining useful life of individual sources.

Alternatively, EPA believes it may be appropriate for the State to combine a category-wide BART assessment with a source-specific assessment for certain sources. For example, if a State can verify that a source will be retired within a short period of time, it could take this into account in determining BART-level emissions reductions for that facility while assessing the remaining sources subject to BART on a category-wide basis.

The States accordingly have flexibility in developing a method to determine the emission reductions that could be achieved through the application of BART. Whatever

methodology is chosen by the State to evaluate possible emissions reductions from BART, the estimate must reflect at least the minimum level of emissions reductions that can be expected. This estimate becomes the point of comparison for determining whether an alternative measure, such as an emission trading program, achieves greater reasonable progress toward visibility improvement. Once the State has arrived at an estimate of the emissions that would result from application of source-specific BART, it should then compare the degree of visibility improvement expected to be achieved in Class I areas through the application of BART to the degree of visibility improvement projected to be achieved by the alternative measures proposed by the State.[106] It is not necessary to go through an additional analysis of the BART factors in considering the effects of alternative measures.

The EPA believes that the most likely alternative measures adopted by the States will be an emissions trading program. There are several advantages associated with a regional trading approach in lieu of meeting a source-

[106] The State should be able to compare the degree of visibility improvement through modeling. For example, for an emissions trading program, the State may undertake a regional modeling analysis that simulates least-cost market trades to predict the geographic distribution of the emission reductions that could be achieved through a market trading program and the resultant improvement in visibility at different Class I areas.

specific BART requirement. First, it provides flexibility to participating sources in deciding whether to purchase credits or to implement on-site emission reduction strategies, while being designed to achieve an equivalent level of emissions. Many commenters felt the proposal did not provide this type of flexibility. Second, trading allows sources to assess the costs of control technology, alternative fuels, and process changes across a broad array of sources and source categories. Thus, a trading program typically will result in lower cost per ton of pollutant reduced than a program which mandates plant-specific technological control. For example, EPA's experiences in the acid rain program have shown that sulfur dioxide reductions achieved through market-based programs within the electric utility sector continue to be quite cost-effective, in the $170 - 320 per ton range.[107] A program which allows broader trading among sources in other industrial categories as well would likely lead to even greater cost effectiveness for individual sources.

In designing emissions trading programs that will achieve the requisite improvement in visibility, States must ensure that such programs meet several criteria. First, as

[107] U.S. Department of Energy, Energy Information Administration, "The Effects of Title IV of the Clean Air Act Amendments of 1990 on Electric Utilities: An Update," DOE/EIA-0582(97), March 1997.

noted above, the legislative history demonstrates Congress' recognition of the need to control emissions from a specific set of existing sources. Because of the Congressional focus on control of these sources, any emissions trading program must include, at a minimum, the sources within the trading region subject to BART. The one exception to this is where a source has already installed BART-level pollution control technology and the emission limit is a federally-enforceable requirement. In that case, States may elect to allow a source the option of not participating in the trading program.

Second, a trading program adopted in lieu of BART must be fully implemented within the period of the first long term strategy. To ensure this, States must provide schedules for implementing emissions trading programs with their SIP submittal. While EPA is allowing States to fully implement a trading program within the period addressed by the State's first long term strategy, under section 169A, BART emission limits are to be implemented within 5 years. To provide States with the additional flexibility they may need to implement a trading program, EPA has concluded that it is appropriate for States to have the full period of the long term strategy to achieve the full measure of necessary emissions. The basis for allowing this longer implementation period is the provision that the trading

program achieve greater reasonable progress than would be achieved by source-specific application of BART within 5 years of plan submittal. The EPA will consider the estimated period of time to implement the program in determining whether the alternative measures "achieve more reasonable progress." In any event, a trading program adopted in lieu of BART must be implemented during the period of the first long term strategy.

Third, the reductions in emissions required of BART sources must be surplus to other Federal requirements as of the baseline date of the SIP, that is, the date of the emissions inventories on which the SIP relies. In addition, sources must be required to monitor their emissions in a way that allows States and EPA to assure that the reductions are being achieved. The basic concept of an emission trading program is to allow for alternative, cost-effective ways of achieving equal or greater overall emissions. To ensure that the trading program does achieve a greater overall emission reduction, it is important that the emission credits are created by genuine reductions in emissions. We will be issuing further guidance to assist States in designing their trading programs to ensure that programs provide such accountability.

Fourth, the regional trading program may include sources not subject to BART. Inclusion of such sources

provides for a more economically efficient and robust trading program. The EPA believes the program can include diverse sources, including mobile and area sources, so long as the reductions from these sources can be accurately calculated and tracked.

Fifth, EPA encourages States wishing to develop such programs to consider the emission reduction requirements of other air quality programs. To implement reductions in a fully integrated fashion, the State should consider the extent to which some sources should be limited in their ability to trade. Examples of such factors include the significant contribution to a local nonattainment situation and the extent to which trading may assist or undermine the achievement of greater progress toward attainment of the NAAQS or the national visibility goal.

A related issue is the connection between determinations of BART under the reasonably attributable regulations and a trading program adopted in lieu of BART. The EPA has adopted a provision in the final rule that allows States to include a geographic enhancement in such a trading program to accommodate reasonably attributable BART. The purpose for including this provision is to address concerns regarding “hot spots” – the concern that some part of visibility impairment in a specific Class I area is attributable or uniquely attributable to a single source or

small group of sources because of the nature and location of the pollution from the source(s). Should action be taken by a State (or EPA) to address reasonably attributable impairment, these provisions would allow the State to incorporate methods, procedures, or processes in a market-based strategy to accommodate such action.

Sixth, interpollutant trading should not be allowed until the technical difficulties associated with ensuring equivalence in the overall environmental effect are resolved. Some other emissions trading programs (e.g., trading under the acid rain program) prohibit emission trades between pollutants. An emissions trading program for regional haze might also need to restrict trades to common pollutants. Each of the five pollutants which cause or contribute to visibility impairment has a different impact on light extinction for a given particle mass, making it therefore extremely difficult to judge the equivalence of interpollutant trades in a manner that would be technically credible, yet convenient to implement in the timeframe needed for transactions to be efficient. This analysis is further complicated by the fact that the visibility impact that each pollutant can have varies with humidity, so that control of different pollutants can have markedly different effects on visibility in different geographic areas and at different times of the year. Despite the technical

difficulties associated with interpollutant trading today, EPA would be willing to consider such trading programs in the future that demonstrate an acceptable technical approach.

Application for Exemption from BART. Even where a source may reasonably be anticipated to cause or contribute to visibility impairment, section 169A(c) allows for the exemption of any source from the BART requirements if it can be demonstrated that the source, by itself or in combination with other sources, is not reasonably anticipated to cause or contribute to significant visibility impairment. In addition, as specified in section 169A(c)(2) of the CAA, any fossil-fuel fired power plant with a total generating capacity of 750 megawatts or more may receive an exemption only if the owner demonstrates that the power plant is located at such distance from all Class I areas that it does not, or will not, in combination with other sources, emit any pollutant which may reasonably anticipated to contribute to significant visibility impairment.

As with the question of whether a source can be reasonably anticipated to cause or contribute to any visibility impairment, EPA believes that the question of whether a source causes or contributes to significant visibility impairment requires a analysis of the cumulative

effects of emission sources on a region. Regional modeling will be one appropriate method to determine whether a source could qualify for the exemption from the BART requirements. If a significant cumulative impact is demonstrated from the sources across the relevant regional modeling domain, then any BART-eligible source in the region would most likely be found to be reasonably anticipated to cause or contribute to significant visibility impairment.

The proposed regional haze rule was structured such that the BART exemption provisions in section 51.303 of the existing visibility regulations would also apply to sources subject to BART under the regional haze regulation. In the final rule, EPA has taken the same approach. Consistent with section 51.303, a source may apply to EPA for an exemption from the BART requirement. The EPA will grant or deny an application after providing notice and opportunity for a public hearing. Any exemption granted by EPA must have the concurrence from all affected Federal land managers.

Timing for Submittal of BART Elements. Because TEA-21 changed the schedule for submittal of visibility SIPs, EPA is not requiring States to submit a list of BART-eligible sources to EPA within 12 months, as proposed. Under the final rule, the emission limits or other measures to address BART under the regional haze program must be included in the

State's initial SIP submittal(s), as discussed further in unit III.B of this notice, except where the State commits to regional planning. In the case where a State opts to work other States to develop a coordinated approach to regional haze by participating in a regional planning process, SIP revisions containing the BART emission limits or alternative measures in lieu of BART will be due generally at the time $PM_{2.5}$ nonattainment SIPs are submitted, but in no case later than December 31, 2008. As discussed in Unit III.B, States that submit a commitment to participate in regional planning are required to submit the list of BART-eligible sources as part of that submittal.

I. Monitoring Strategy and Other Implementation Plan Requirements.

Monitoring Strategy

Proposed Rule. In the proposed rule, we included a requirement for States to develop a monitoring strategy. We believe that actual monitoring data are critical component of any air quality management approach to visibility impairment. Data on individual components of PM (nitrates, sulfates, elemental carbon, organic carbon, crustal material) are crucial to understanding the causes of visibility impairment at a given location, and accordingly are necessary for long term strategy development. Reviewing

these data with time, and additional data provided by monitoring sites, are necessary to understand whether the long term strategies are effective.

Under the proposed requirement, an initial monitoring strategy would be due 12 months after promulgation, with periodic a updates every 3 years thereafter. Requirements for visibility monitoring are authorized under section 110(a)(2)(B), requiring SIPs to provide for the monitoring of ambient air quality, and under section 169A(b)(2), which authorizes EPA to establish regulations requiring SIPs to address "other measures as may be necessary."

Four separate provisions were included in the monitoring strategy requirement: (1) a requirement for States to provide for additional monitoring "representative of all Class I areas," (2) a requirement for States with Class I areas to assess the relative contributions of sources within and outside the State to any Class I area within the State, (3) requirements for States without Class I areas to include a procedure by which monitoring data will be used to determine the contribution of emissions from within the State to Class I areas outside the State, and (4) a requirement to report all visibility monitoring data to EPA at least annually, in accordance with EPA guidance.

Comments Received. Commenters on this requirement raised a number of concerns. One concern raised by State and local agencies was that the costs of monitoring could be substantial and urged EPA to provide funding. Other commenters urged EPA to exercise flexibility in determining the degree to which monitors in one Class I area could be considered representative of other nearby areas. Other commenters raised concerns about the feasibility of monitoring in remote areas and for areas with difficulty in gaining access to monitors during the winter. Commenters also expressed concerns over the timetable for the monitoring plan and the requirement for updating the strategy.

Final Rule. Section 51.308(d)(4) of the final rule includes the requirement for a monitoring strategy. Under the final rule, this monitoring strategy is due with the first regional haze SIP, and it must be reviewed every 5 years.

Additional Sites. Since the 1980s, EPA has cooperatively managed and funded the Interagency Monitoring for Protected Visual Environments (IMPROVE) network with FLMs and States. Today, the IMPROVE network of 30 Class I sites (and an additional network of about 40 sites that use the IMPROVE methods) collects data on fine particle

concentrations and on individual particle species. These individual species (sulfates, nitrates, elemental carbon, organic carbon, crustal material) are important for understanding causes and trends of visibility impairment at a given location. The network also employs optical monitoring methods for the direct measurement of light extinction, and scene monitoring methods using 35 mm photography.

The EPA is funding the deployment of several hundred $PM_{2.5}$ monitors by the end of calendar year 1999. In order to meet the requirements for monitors and to characterize background conditions and transport patterns, as well as to more broadly characterize visibility impairment in Class I areas for implementation of the regional haze program, the EPA is funding the deployment of an additional 78 IMPROVE sites for Class I areas by the end of 1999. As a result of this anticipated network expansion, we expect that few, if any, State-funded monitors will be needed in implementing today's rule. The IMPROVE Steering Committee is coordinating closely with the States on the selection of sites for the expanded network to help ensure that the new sites will meet States' needs for SIP development. The EPA expects that as a result of the IMPROVE Steering Committee process, the expanded network should provide for data that

can be considered representative of most if not all Class I areas.

The monitoring strategy must, however, provide for additional monitoring sites if the IMPROVE network is not sufficient to determine whether reasonable progress goals will be met. This provision requires States with Class I areas to work with EPA and the FLMs to ensure that monitoring networks provide monitoring data that are representative of visibility conditions in each affected Class I area within the State. We want to clarify that this provision does not require a monitor in each Class I area, only that a monitor be representative of a class I area. Accordingly, a monitor in or adjacent to one Class I area can be representative of one or more other Class I areas, based on certain criteria. Additionally, EPA agrees with commenters that a few Class I areas may have severe accessibility problems for which monitoring may not be feasible.

Use of Monitoring Data to Understand Contributions to Class I Areas. States with Class I areas are required to include in the regional haze SIP a monitoring strategy that is tailored to a given representative site. The strategy must identify the ways that the visibility monitoring and chemical composition analysis will be used to understand the

emission sources that contribute to visibility impairment at a given monitoring site. Additionally, the monitoring strategy should identify the procedures for reviewing monitoring data and coordinating with other technical experts. We believe that continued coordination of visibility monitoring and chemical composition analysis among States, FLMs, and EPA will be important for future regional planning activities. Analysis of trends in emissions of those constituents can assist States in the development of long term strategies for making reasonable progress.

The rule also requires monitoring strategies for States without Class I areas. We believe it is equally important for those States to understand and describe the implications of monitoring data. First, it is important for those States to review monitoring information, including data on the chemical composition of individual species concentrations, to help understand the relative contribution of emissions from their State to Class I areas in other States. Second, it is important for these States to understand and describe how they will use the monitoring data to review progress and trends.

Periodic Updates to Strategy. The rule requires an initial monitoring strategy and periodic updates. The

initial monitoring strategy is due with a State's first SIP submission. Additionally, the rule requires that the monitoring strategy be reviewed every 5 years. We believe that when progress is reviewed and control strategies are updated, it will be important to review the monitoring strategy. For the periodic updates, States should review the existing monitoring strategy with the FLMs and other participating agencies to assess the need for additional monitoring sites or modifications to existing sites, as well as the need for updated guidance on monitoring protocols.

Monitoring Guidance. The EPA plans to issue a visibility monitoring guidance document soon after promulgating this rule that will be designed to assist the States in developing monitoring strategies. The document will include technical criteria and procedures for conducting aerosol, optical, and scene monitoring of visibility conditions in Class I areas. The protocols of the IMPROVE network will be included in this guidance.

Reporting of Monitoring Data.

Proposed Rule. The proposed rule required States to report all visibility monitoring at least annually for each Class I area having such monitoring. We proposed that States report data in accordance with EPA guidance and through electronic data transfer techniques to the extent

possible. There were no adverse comments on this reporting requirement.

Final Rule. We have retained a general requirement in section 51.308(d)(4) that States submit as part of the SIP a monitoring strategy that addresses the reporting of visibility monitoring data to EPA. As noted above, the EPA expects that few, if any, additional State-funded sites will be necessary to fully implement the regional haze rule. Where States do choose to fund additional sites, however, the EPA believes it is important for the States to make data from these sites available to EPA and other agencies.

For monitoring sites in the IMPROVE network, the IMPROVE Steering Committee oversees network contractors who quality assure and consolidate data from chemical composition analysis of filter samples. Such data are made available to all interested parties through various electronic formats and online websites. Assuming this practice continues with the IMPROVE Steering Committee, States will experience little or no burden in meeting this requirement for reporting to EPA.

Annual consolidation of these data will serve several purposes. First, a central data base will allow the States and other intersted parties to track progress over time in relation to reasonable progress goals. It will also assist

the States in understanding current visibility conditions as well as past trends. Consolidation of the data will assist EPA, the State, other agencies, and the public in reviewing the effectiveness of the State's long term strategy for regional haze. Additionally, consolidation of the data will enable EPA to better characterize national and regional visibility trends in its annual air quality trends report. Finally, a centralized data base will provide for the integration of monitoring data from the new $PM_{2.5}$ monitoring network and the visibility monitoring network, both of which will include $PM_{2.5}$ and PM_{10} mass, as well as compositional analysis by aerosol species. Class I area particle mass and chemical composition data can fill important data gaps in defining regional concentrations for air quality modeling analyses.

Requirements Under Section 110(a)(2) of the CAA. Visibility SIP submittals must document certain program infrastructure capabilities consistent the requirements of section 169B(e)(2) and section 110(a)(2) of the CAA. Section 169(B)(e)(2) requires States to revise their section 110 SIPs to "contain such emission limits, schedules of compliance, and other measures as may be necessary" to carry out regulations promulgated pursuant to this section. The EPA believes that this language authorizes EPA to ensure

that States review their existing program infrastructures to ensure that the types of elements required by section 110(a)(2) for programs addressing the NAAQS are also sufficient for adoption and implementation of SIP measures for regional haze. The final rule does not include specific provisions addressing all elements of section 110(a)(2). However, section 51.308(d)(4)(iv) of the final rule requires the State to maintain and update periodically a statewide inventory of emissions of pollutants that contribute to visibility impairment.

Where a State is also revising its SIP to incorporate changes to address the $PM_{2.5}$ NAAQS, many of these revisions may be sufficient to address both $PM_{2.5}$ and regional haze. The EPA encourages States to consider the needs of both programs when updating the provisions required by section 110 of the CAA to minimize any administrative burdens.

J. Periodic SIP Revisions and Five-year Progress Reports.

Proposed Rule. The proposed rule required States to periodically review and revise their SIPs every 3 years. The preamble to the proposal stated that "[t]he EPA believes that a requirement for regular SIP revisions will result in

a more effective program over time and provide a focus for demonstrating ongoing progress and making mid-course corrections in emission strategies."[108] Each SIP revision would include a comprehensive review of the long term strategy, and a review of emissions reductions estimates relied on in the previous plan if the State does not achieve any reasonable progress target.

The proposal also requested comment on whether SIP revisions should instead be required every 5 years. Regarding this option, EPA also took comment on whether it should revise the existing requirement in the "reasonably attributable" regulations for long term strategy reviews from every 3 years to every 5 years, such that SIP revision schedules for both regional haze and reasonably attributable impairment would be coordinated.

Public Comments. Some commenters stated that the CAA does not allow EPA to require periodic SIP revisions.

Several commenters felt that a requirement to submit comprehensive SIP revisions every 3 years would be overly burdensome, and would not provide enough time to properly evaluate changes in air quality and emissions resulting from implementation of strategies to meet reasonable progress targets. For this reason, a number of commenters supported

[108] 62 FR 41151.

a 5-year period between SIP revisions. Several participants in the GCVTC supported a 5-year review of progress that meets the procedural requirements of a SIP revision, but that also allows for the State to make a negative declaration if current strategies are deemed adequate for making reasonable progress at that time.

Other commenters supported SIP revisions every 3 years, citing EPA's preamble language, which noted that implementing mid-course corrections after the 5-year mark may in fact be too late to correct situations where impairment is steadily increasing. Some of these commenters also supported the 3-year cycle for regional haze SIPs since it would be consistent with the requirement for 3-year reviews of long term strategies in the existing 1980 visibility rules.

Authority for Periodic Updates. The EPA does not agree with commenters that it lacks the authority to require periodic SIP revisions. CAA section 110(a)(2)(F) provides that SIPs are to require "periodic reports on the nature and amounts of emissions and emissions-related data" and "correlation of such reports . . . with any emission limitations or standards established pursuant to this chapter." Moreover, section 110(a)(2)(H) requires SIPs to provide for revision when found to be substantially

inadequate to “comply with any additional requirements established under ... [the CAA]” Both of these provisions provide EPA with the authority to require periodic SIP revisions.

The CAA calls for regulations to protect visual air quality in the Class I areas in a way that assures prevention of future impairment in addition to remedying existing impairment. A one-time review of impairment and development of strategies to address that impairment cannot provide such continuing assurance and, at best, can only focus on remedying currently known manmade visibility impairment within the limits of resources and technology. A program that did not anticipate and provide for the need for future periodic review and revisions would not be responsive to the national goal of preventing of any future manmade visibility impairment.

The requirement for periodic review of SIP measures also directly responds to the CAA goal for States to develop strategies to ensure reasonable progress toward the national goal of no human-caused impairment. Given that the statutory factors which States must consider in determining a reasonable progress goal include costs of control and availability of controls, among others, and given that technology changes can affect costs and availability of controls over time, the EPA believes that the requirement

for a periodic SIP revision is appropriate. The periodic revisions will assure that the statutory criteria requirement for reasonable progress will continue to be met. The EPA believes that the need for periodic updates is also clear from the NAS conclusion that "achieving the national visibility goal will require a substantial long term (emphasis added) program."[109]

Three-year versus five-year period. In considering the public comments, EPA also took into account the body of evidence indicating a need for multistate regional planning efforts under the regional haze program. Past experience with regional air quality planning efforts, such as the GCVTC or the Ozone Tranport Assessment Group (OTAG), has shown that regional air quality planning efforts often take two or more years to complete, with additional time needed for State adoption of measures and for review and approval by EPA.

After consideration of the comments described above, and the timeframes needed for regional planning, EPA concluded that a 5-year progress review and SIP revision cycle is more appropriate than a 3-year cycle. The EPA determined that the States will be better able to assess the

[109] (National Research Council 1993 report Protecting Visibility in National Parks and Wilderness Areas, page 10).

effectiveness of emission management strategies by considering 5 years of data rather than 3 years since a 5-year period provides for more stable trend lines for emissions and air quality changes than a 3-year period. The EPA also concluded that a 5-year period should result in significantly less administrative burden on the States than a 3-year period.

Final rule requirements for comprehensive plan revisions and progress reports. The EPA has included in the final rule two main requirements for comprehensive periodic plan revisions (§51.308(f)) and progress reviews (§51.308(g)). Section 51.308(f) requires the States to submit a comprehensive SIP revision in 2018 and every 10 years thereafter. It must meet all of the core requirements of section 51.308(d). The BART provisions of §51.308(e), as noted above, apply only to the first implementation period. Section 51.308 (g) requires progress reports for each Class I area in the State in the form of SIP revisions every 5 years.

Requirements for comprehensive periodic plan revisions. Comprehensive SIP revisions under §51.308(f) must include all of the implementation plan elements found in §51.308(d) of the final rule. These elements include, but are not limited to, the following: (1) reasonable progress goals for

the next 10-year implementation period, (2) determination of current conditions and review of estimates for natural conditions, (3) a revised long term strategy, as necessary to achieve the reasonable progress goal for the next 10-year implementation period, and (4)revised emission inventories, technical analyses and monitoring strategies. The EPA wishes to clarify the following points with respect to the basic core provisions of §51.308(d) for the purpose of periodic comprehensive plan updates.

Reasonable progress goals. For purposes of the periodic plan revisions, the State must select a reasonable progress goal based upon the statutory factors discussed above in unit III.F. In determining the goal for the next implementation cycle, the State must include an analysis of the rate of improvement needed to reach natural conditions in 60 years as an analytical framework for the plan revision. To conduct this required analysis, the State must follow the same four steps discussed in unit II.F for the initial plan revision, that is (1) identification of the difference between baseline conditions and natural conditions (noting any updates to the estimate of natural conditions based upon technical refinements), (2) identification of the uniform rate of progress over the 60 year period that would be needed to attain natural

conditions by the year 2064, (3) identification of the amount of progress that would result if this uniform rate of progress were achieved during the period of the regional haze implementation plan,[110] and (4) identification of reasonable progress goals in light of the statutory factors, taking the 60-year analysis into account. The State must also calculate the number of years it would take to attain natural conditions if visibility improvement continues at the rate of progress selected by the State as required in §51.308(d)(1)(ii).

Reporting of Baseline and natural visibility conditions. In the SIP submission for the comprehensive periodic plan updates, the State must identify (1) the visibility change from baseline conditions (2) the visibility change since the last SIP revision 10 years ago and (3) the difference between current and natural conditions.

Visibility Change from Baseline Conditions. Section 51.308(f) calls for States to consider, at the time of any

[110] Referring to the example in unit III.F, if the second implementation plan covers a 10-year period from 2019 through 2028, then the State would identify a 3 deciview rate of improvement, and the amount of visibility improvement that must be analyzed for the year 2028 would be the 3 deciview improvement for the years 2019 through 2028, plus the 4.2 deciviews of improvement for the years 2004 through 2018.

future SIP revision after the initial implementation plan, the amount of visibility improvement achieved from baseline visibility conditions (established over the period 2000-2004) in developing future reasonable progress goals and associated strategies. The final rule requires the State to do this by comparing "current conditions" for the 5 years of most recent visibility data with baseline conditions. (See discussion in Unit III.E on definition of "current.") Any lack of progress in improvement of visibility from baseline conditions will need to be explained in the SIP revision and considered by the State in the establishment and/or revision of new reasonable progress goals and/or emission management strategies. Similarly, greater than expected improvements should be considered by the State in setting new visibility goals and emission management strategies.

If little or no perceptible visibility improvement has occurred in comparison to baseline conditions, or if conditions have actually degraded, then the State will need to explain the reason for this degradation in the SIP, and should seriously consider establishing more ambitious goals and additional enforceable measures to achieve these goals. The EPA will take into account the amount of progress achieved to date from the baseline period in determining whether any future strategy would ensure "reasonable

progress." If significant visibility improvement has occurred from baseline conditions, then EPA can also take this into account in reviewing future reasonable progress goals and strategies.

Visibility Change Since Last SIP Revision. Section 51.308(f) also calls for States, in developing reasonable progress goals for the next 10 years, to take into account how visibility conditions have actually changed since establishment of the previous reasonable progress goal. (This provision would apply beginning in the second SIP revision cycle under the regional haze program.) If conditions degraded or failed to meet reasonable progress goals, the State would be required to analyze the cause of the shortfall, and address it as appropriate in future strategies. If the State has failed to achieve its reasonable progress goal for the prior implementation period, the State would be required to include in its revision a comparison of the visibility improvement the State expected to achieve to the visibility improvement the State actually achieved.

Difference Between Current and Natural Conditions. Section 51.308(f) of the final rule requires the State, at the time of any comprehensive SIP revision, to calculate the difference between current conditions and natural conditions

for the most impaired and least impaired days. "Current conditions" means the conditions for the most recent five year period preceding the required date of the implementation plan submittal. This calculation is needed to determine the total amount of improvement that States will ultimately need to address in their long term strategies.

Long term strategies. As for the first implementation plan, subsequent comprehensive updates must identify the enforceable emissions that will provide for meeting the reasonable progress goal for Class I areas within the State and for Class I areas outside the State which may be affected by emissions from the State. Unit III.G provides additional detail on the requirements of the long term strategies.

Update of monitoring strategies and other requirements. The comprehensive updates are also required to meet the requirements of §51.308(d)(4) for updated monitoring strategies, updated emission inventories, and other required technical analyses.

Requirements for 5-year progress reports. Section 51.308(g) describes the required elements progress reports due every five years. For States that participate in regional planning and submit initial SIPs in 2008, the first

progress report will be due in 2013. If a State submits its initial SIP in the 2004-2008 timeframe, its first progress report would be due before 2013. These progress reports must follow the same procedural requirements required for implementation plan revisions, and the State must provide the opportunity for public review and comment. However, the rule also allows the State to submit this progress report in the form of a negative declaration if the State finds that emission management measures in the SIP are being implemented on schedule, and visibility improvement appears to be consistent with existing reasonable progress goals. The EPA intends for progress reports to involve significantly less effort than a comprehensive SIP revision.

Each 5-year progress report must contain the following elements as specified in section 51.308(g):

- The status of implementation, and summary of the emissions achieved, for all emission management measures implemented within the State in order to achieve reasonable progress goals for Class I areas within and outside the State.
- For each Class I area located in the State, the report must include calculations of the following parameters:
  - Current visibility conditions for the most impaired and least impaired days.

- The difference between current conditions and baseline conditions for the most impaired and least impaired days.

- The change in visibility for the most impaired and least impaired days over the past 5 years.

! An emissions tracking report that analyzes the change over the past 5 years in emissions of pollutants contributing to visibility impairment, disaggregated by source category and emissions activity, for significant categories of sources or activities.

! An assessment of whether current implementation plan strategies are sufficient for the State or affected States to meet their reasonable progress goals.

Based on the required calculations and assessments in the progress report, the State must take one of three actions as specified in section 51.308(h). If the State finds that an additional substantive SIP revision is not required, then it may submit a “negative declaration” to EPA after opportunity for public review and comment. The EPA anticipates that if the State is implementing a reasonable set of strategies according to the schedule as developed in the previous comprehensive SIP revision, and that visibility trends show that reasonable progress goals should be achieved over the 10 year long term strategy period, then

the State should be able to certify, through a negative declaration, that no additional control measures are needed at the time of this mid-course review.

If the State finds that over the past 5 years there has been a substantial increase in emissions by intrastate sources, or there has been a deficiency in plan implementation, the final rule requires the State to revise the SIP within one year, rather than waiting for the next 10-year comprehensive review. Such a mid-course correction would be designed to achieve the existing reasonable progress goal for the relevant Class I area. The EPA believes that it is appropriate for the State to take prompt action to address intrastate problems since they would not need to participate in further regional planning.

If the State finds that there is a substantial increase in emissions or a deficiency in plan implementation resulting primarily from interstate emissions, §51.308(h)(2) calls for the State to re-initiate the regional planning process with other States so that the deficiency can be addressed in the next comprehensive SIP revision due in 5 years. If the State finds that international emissions sources are responsible for a substantial increase in emissions affecting visibility conditions in any Class I area or causing a deficiency in plan implementation, the

State must submit a technical demonstration to EPA in support of its finding. If EPA agrees with the State's finding, EPA will take appropriate action to address the international emissions through available mechanisms. Appropriate mechanisms for addressing visibility-impairing emissions from international sources are further discussed in unit III.G on the long term strategy.

If EPA finds that the State has not been implementing certain measures adopted into its SIP, or that the State has submitted a SIP that is not approvable, or that the State has failed to submit any required progress report or SIP revision at all, the State could be subject to sanctions in accordance with sections 179(b) and 110(m) of the CAA. If the State does not resolve the situation expeditiously, EPA may be obligated to take further appropriate action to resolve the situation, including promulgation of a FIP within 2 years in accordance with section 110(c) of the CAA. The EPA believes that in this regionally-oriented program, it will be important for States to implement measures designed to improve visibility for Class I areas outside of their State, as well as to improve visibility within the State. The EPA will exercise its FIP authority as appropriate and necessary to ensure that States fulfill

their obligations such that Class I areas make reasonable progress toward the national visibility goal.

K. Coordination with Federal Land Managers

Section 51.308(i) of the final rule requires that States consult with FLMs before adopting and submitting their regional haze SIPs. This requirement is consistent with the proposed regional haze rule and the 1980 regulation for "reasonable attributable" visibility impairment. A number of commenters expressed a concern that this provision was not equitable, in that States are required to consult with FLMs, but the rule does not require FLMs to consult with States before they take action, even when actions such as prescribed burning could have a significant impact on a State's visibility program. These commenters recommended that the proposed rule be amended to mandate a two-way communication.

The EPA agrees that it is important and necessary for FLMs to consult with States on visibility-related issues. Land-use activities on Federal lands can have impacts on nearby areas of a State, and there have been significant air quality issues related to these activities. In recent years FLMs have undertaken activities to improve communications with States. There are a number of examples of these efforts. The IMPROVE steering committee, the group that

oversees FLM efforts to monitor visibility in Class I areas, includes representation from State agencies. Recently, State representation on this committee was expanded by adding two more State members. Another example are the memoranda of understanding that FLMs have entered into with States to coordinate prescribed burning activities. The EPA believes that the FLM agencies generally recognize the importance of involving States in the development and implementation of land use policies and other actions that affect States' abilities to make air quality improvements.

The EPA believes that it is unnecessary to impose an administrative requirement on another agency of the sort requested by commenters in a Federal rule, because Federal agencies are already subject to compliance with SIP requirements in the same manner, and to the same extent as any nongovernmental entity through section 118, as discussed below. The EPA will, however, be working with FLMs and States to assist in their communications over air quality issues.

Commenters also expressed concerns that emissions from Federal agencies are beyond their jurisdiction. These commenters felt that if States were not able to regulate such emissions, then other sources within the State would be treated inequitably under the final rule. The EPA does not

agree that Federal sources are beyond a State's jurisdiction. As required by section 118 of the CAA, if a State air quality regulation affects a given type of source within its jurisdiction, Federal facilities having that type of source must comply with the State regulations in the same manner, and to the same extent as any nongovernmental entity. Thus, FLMs having emission sources of the type that are covered by State air quality regulations are subject to the same extent as private sector entities.

IV. Treatment of the GCVTC Recommendations

A. Background

The EPA established the GCVTC on November 13, 1991.[111] The purpose of the GCVTC was to assess information about the adverse impacts on visibility in and around 16 Class I areas on the Colorado Plateau region and to provide policy recommendations to EPA to address such impacts. Section 169B of the CAA called for the GCVTC to evaluate visibility research as well as other available information "pertaining to adverse impacts on visibility from potential or projected growth in emissions from sources located in the region.

The GCVTC was required to issue a report to EPA recommending what measures, if any, should be taken to

[111] See 56 FR 57522, Nov. 12, 1991.

protect visibility.[112] The CAA required that, at a minimum, this report was to consider: 1) the establishment of clean air corridors,[113] 2) the need to impose additional new source review requirements in any clean air corridors, and 3) additional restrictions on increases in emissions which may be appropriate to protect visibility in affected class I areas. The GCVTC was also required to address the promulgation of regulations addressing long range strategies to address regional haze in the region. In June 1996, the GCVTC issued its recommendations to EPA.

The GCVTC recommendations covered a wide range of control strategy approaches, planning and tracking activities, and technical findings. The primary recommendations of the GCVTC covered nine categories of activities:[114]

- air pollution prevention and reduction of per capita pollution as a high priority, including non-binding targets on production of electricity from renewable energy sources;

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[112] CAA Section 169B(d).

[113] A clean air corridor is defined as a region that generally brings clear air to a receptor region, such as the Class I areas of the Golden Circle

[114] *See* GCVTC Report pp. i-iii.

- tracking the effect of new sources of emissions on clean air corridors;
- closely monitoring stationary source emissions, establishment of regional targets for sulfur dioxide emissions for the year 2000 and the year 2040 with interim targets to be established in the future, exploration of a similar tracking system for other pollutants, and the development of market-based regulatory programs if emissions targets are not met;
- emissions reductions in and near class I areas;
- capping of mobile source emissions for areas contributing to visibility impairment, and State support for national measures aimed at further reducing tailpipe emissions;
- further assessment of the contribution of road dust to visibility impairment;
- future binational collaboration to resolve technical and policy concerns about contributions to visibility impairment on the Colorado Plateau resulting from emissions from pollution sources in Mexico;
- implementation of smoke management programs to minimize effects of all fire activities on visibility; and

- the need for a future regional coordinating entity to follow through on implement the recommendations.

Proposed Rule. In the July 31, 1997 proposal of the regional haze rule, EPA included an extensive review of the recommendations of the GCVTC.[115] The preamble discussed how several concepts from the GCVTC's recommendations were incorporated into the proposed framework for the national regional haze program. For example, EPA proposed an approach for tracking reasonable progress, based on improving conditions on the worst visibility days and not allowing conditions on the best days to degrade, that was consistent with both the GCVTC's definition of "reasonable progress" and with the CAA national visibility goal of remedying any existing impairment and preventing any future impairment. The proposal also called for tracking of continuous emissions to inform State control strategy decisions on a periodic basis.[116]

However, in its proposal, EPA chose not to incorporate the GCVTC's specific emission management strategies as direct requirements for State Implementation Plans (SIPs). The EPA followed this approach because the proposed rule was designed to establish a national framework for development

[115] 62 FR 41141.

[116] 62 FR 41146.

of SIPs to remedy regional haze visibility impairment in all Class I areas nationwide. In addition, it was not clear how the various elements of the GCVTC's report were to be translated into SIP requirements. The EPA noted in the proposal that the "Commission's recommendations have components that contemplate implementation through a combination of actions by EPA, other Federal agencies, States and Tribes in the region, and voluntary measures on the part of the public and private entities throughout the region."[117] The EPA indicated that such a mixture of activities made it difficult for EPA to directly require States to implement all of these measures in their SIPs. Instead, the EPA specifically sought public comment on the manner in which the national regional haze program framework, as proposed, would allow for implementation of the GCVTC's recommendations.[118] The EPA also solicited comment on whether to adopt the GCVTC's stationary source strategies with or without modification.[119]

The EPA also reiterated its position in testimony before the United States Congress, stating that "we specifically designed the regional haze rule to allow for

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[117] 62 FR 41142

[118] *See* 62 FR 41143.

[119] 62 FR 41143.

implementation of the GCVTC's recommendations to address the environmental goal of improving visibility."[120]

In public meetings and written comments following the proposal, interested parties expressed concern that the proposed rule did not specifically endorse or incorporate the GCVTC's recommendations. Some commentors asserted that the rule "ignored" the recommendations. The EPA also received numerous comments that supported adoption of the GCVTC recommendations as part of the national regional haze rule. In particular, several commentors who believed that EPA's proposed rule did not adequately support the GCVTC's recommendations asserted that EPA's participation in the GCVTC implied that strategies developed to address visibility in Class I areas of the Colorado Plateau would be taken into account within the structure of the rule. Commentors also noted that EPA's proposal of a visibility target and requirements to address Best Available Retrofit Technology (BART) left a high degree of uncertainty as to whether the GCVTC recommendations could form the basis for SIPs.

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[120] Written Testimony of John S. Seitz, Director, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, before the Subcommittee on Forest and Public Land Management of the Committee on Energy and Natural Resources, United States Senate, October 28, 1997.

On June 29, 1998, after the close of the public comment period on the proposed regulations, the Western Governors' Association (WGA) sent to EPA additional comments on the proposed regional haze rules. These comments contained specific new language for addressing the recommendations of the GCVTC. The comments offered provisions to be included in the national regional haze rule to allow certain western States to submit SIPs to assure reasonable progress in addressing regional haze impacts on the Colorado Plateau based upon the technical work and policy recommendations of the GCVTC.[121] The transmittal letter signed by Michael O. Leavitt, Governor of the State of Utah, reemphasized the commitment of Western governors to the GCVTC recommendations, and requested that EPA take public comment on their suggested preamble and rule language as part of the EPA process in reaching decisions on a final regional haze rule. In response to this submittal, on September 3, 1998 EPA published a notice of availability in the Federal Register.[122] The notice solicited public comment on the contents of the WGA letter and EPA's translation of the letter's requirements for SIPs into draft regulatory language. The comment period for the notice of availability closed on October 5, 1998 and EPA received approximately 125

[121] Docket A-95-38, Item # VIII-G-76
[122] 63 FR 46952

comments. In summary, most of the commentors supported the adoption of provisions to directly address the GCVTC recommendations in the national rule, although many requested changes to the draft regulatory language. Some commentors expressed concern over how these provisions would relate to the national rule, in particular to the national provisions for BART. Other commentors addressed the way in which the WGA letter and EPA's draft regulatory language translated the GCVTC's recommendations. In addition, some commentors expressed concern over the timing of the SIP submittals both over the linkage to timing of SIP submittals for ozone and $PM_{2.5}$ SIPs and the requirements of TEA-21. Commentors also requested EPA to commit to consider the national transportation measures noted by the GCVTC as part of EPA's responsibility toward helping the States make reasonable progress.

In the final rule, EPA is establishing specific SIP requirements which may be used by the States and tribes that participated in the GCVTC to satisfy the national regional haze rule. These SIP requirements will form a basis for these States to meet the CAA requirements for reasonable progress in the 16 Class I areas addressed by the GCVTC Report. These SIP requirements are not acknowledge and give effect to the substantial body of work already completed by

the States and Tribes participating in the GCVTC. The Agency, therefore, and for reasons explained in more detail below, provides these SIP requirements as an optional way for these States and tribes to implement the national rule based on the merits of the work of the GCVTC completed before establishment of the national framework. The EPA finds that the GCVTC actions to date address, or provide a mechanism to address, the statutory factors for assessing reasonable progress required by the CAA. The EPA is satisfied that the GCVTC's strategies as set forth in section 51.309, when supplemented by the annex process discussed below, will provide for "reasonable progress" toward the national visibility goal for the 16 parks and wilderness areas addressed by the GCVTC. Consequently, if a State submits a plan that addresses the requirements of section 51.309, including the requirements related to the annex, as described below, that plan will be considered to comply with the national rule's requirement for reasonable progress for the period from plan approval to 2018. Today's rulemaking, including section 51.309, is directly responsive to the western States' and tribes' comments calling for recognition of the policy development efforts of the GCVTC. At the same time, the rule allows for future cooperative efforts among the GCVTC States, so that the

national requirements for ensuring reasonable progress are fully addressed. This action exemplifies how the regional haze protection provisions can be flexible and allow for a broad range of emissions control strategies tailored to a specific region. This action fully recognizes the GCVTC and its follow-up body, the WRAP, as a valid regional planning process to address, at a minimum, the 16 Class I areas that were the focus of the GCVTC. Section 51.309 provides for continued work of the GCVTC, which may be accomplished through the WRAP, to establish a complete framework which can be adopted in the SIPs for addressing all sources of visibility impairment in the 16 Class I areas. The section also sets forth provisions for addressing additional Class I areas that were not directly addressed in the GCVTC report. Section 51.309 does not preclude States from developing and adopting their own control strategies. Rather, it provides an expedited process whereby a State choosing to follow the GCVTC's recommendations in its SIP can rely fully on the technical analyses, policy recommendations, and agreements reached by the GCVTC members, thereby significantly reducing the effort required to establish federally approvable SIPs. A State remains free to develop and submit a SIP to EPA which does not rely on the GCVTC's work or section 51.309. Such a State will be fully subject to the requirements and

schedules set forth in section 51.308, in the same manner and to the same extent as the States and Tribes throughout the United States that did not participate in the GCVTC process.

B. General Requirements of Section 51.309

Section 51.309 requires specific emissions control strategies for a broad region of the Western United States and includes measures which address different types of emissions sources, including stationary, area and mobile sources. Some of these strategies are already in place while others, such as mobile source provisions and the structure of a market trading system to assure compliance with stationary source emissions goals, will require development of additional regulatory measures. A review of each element of section 51.309 follows. The GCVTC recommended emission reduction targets from stationary sources of SO_2 for the years 2000 and 2040. The GCVTC did not recommend quantitative interim targets between the years 2000 and 2040. Therefore, in addition to provisions for specific emissions strategies, section 51.309 allows for an annex to the GCVTC report which will be considered in establishing specific targets for SO_2 emissions from stationary sources in the region between 2003 and 2018.

This annex process and EPA's approval of interim emissions targets will be key in completing a series of strategies that can be deemed by EPA to as meet the rule's'reasonable progress' goal for the Class I areas on the Colorado Plateau.

The provisions for adoption of strategies consistent with the GCVTC recommendations do not preclude the States and tribes from developing additional control strategies for achieving reasonable progress in other Class I areas. Nor do they preclude States and tribes which did not participate in the GCVTC, but which may benefit from its strategies due to the geographic proximity of their Class I areas to the State where strategies will be implemented and regional transport throughout the West, from building on these strategies to address reasonable progress for their Class I areas. However, for all Class I areas not on the Colorado Plateau, the States and tribes would need to demonstrate, through the required analyses, that implementation of these strategies would contribute to meeting the requirements of section 51.308. By focusing first on implementation strategies for the 16 Class I areas based on the recommendations of the GCVTC, all Western States may reduce the technical and administrative costs of addressing the remaining Class I areas by building on the outcome of

existing programs rather than requiring the development of two programs in parallel.

In the national rule, EPA is requiring States to analyze the rate of progress in visibility improvement that would be needed to reach natural conditions within 60 years. The analyses must assess what strategies are available to meet that rate for the period of the long term strategy. The GCVTC reviewed the period from 1990 to the 2040 to assess what strategies were reasonable to achieve visibility improvement. The GCVTC's Alternatives Assessment Committee developed a modeling system linking emissions control strategies, the costs of such strategies and the degree of visibility improvement that would result from those strategies. While not specifically attempting to reach natural conditions within 60 years, a key emissions control scenario assessed in the GCVTC process was a "maximum management alternative." The GCVTC looked at many source types and their impacts on visibility. This specific assessment applied all known and anticipated control strategies over the time period as an indicator of the maximum amount of improvement in visibility possible in the region. The results of this analysis did not show sufficient emissions to reach natural conditions in any mandatory Class I area by 2040. The analysis of this

scenario did, however, demonstrate that the “maximum management alternative” is not likely to be achievable based on technological, economic and policy choices made by the Alternates Assessment Committee due to costs, degree of visibility improvement and other factors. Consequently, EPA finds this analysis, plus the management alternatives chosen (i.e., market based emissions reductions, specific source sector reductions, etc.) to be an acceptable basis for approvable SIP strategies for the first long term strategy since, in effect, reaching natural conditions by 2040 was shown not to be reasonable in this transport region at this time. In making this finding, EPA concludes that the GCVTC analyses and process provide for an assessment comparable to that called for by section 51.308.

In promulgating section 51.309, EPA is establishing specific SIP requirements for the time period 2003 through 2018 based on demonstrations by the GCVTC. The EPA finds the GCVTC demonstrations satisfy requirements for review of the statutory factors as provided for under subsection 51.308(d).

While the GCVTC’s assessment included projections to the 2040, EPA feels that the strategies incorporated in section 51.309 must be re-evaluated in 2018 to assure that they will continue to achieve reasonable progress after a thorough

review of the CAA factors. As discussed elsewhere in today's notice, this periodic review and revision of regional haze SIPs is needed because of technological changes and economic factors which are likely to significantly alter both the rate of emissions growth within a region, and the degree to which new technologies can more effectively reduce emissions, both of which can affect the rate of visibility improvement. In addition, the requirement for periodic revisions is consistent with the statutory provisions governing long term strategies.

The EPA agrees with commentors who noted certain benefits to following the pathway provided through section 51.309 for addressing regional haze impairment. First there is the benefit that the mixture of required strategies has already been through public comment as part of the GCVTC deliberations and subject to review by many stakeholders. This previous public debate should help ensure broader public support for the State's plans as they are adopted and implemented. As pointed out by commentors, one of the benefits of the GCVTC recommended strategies is that they are aimed at developing cost-effective control strategies and ensuring compliance flexibility for affected sources. For example, the strategy to address emissions from stationary sources uses a milestone and backstop emissions

trading program mechanism. This rewards voluntary emissions reductions since a regional emissions trading program would only become effective if regional milestones are exceeded. Given that the provisions for the milestone and backstop emissions trading system may be approvable in lieu of BART, depending on the milestones developed in the annex, full compliance with BART emissions limitations would not be required within 5 years of plan submittal, as would be required of States which submit plans under section 51.308 requiring source-specific BART. In addition, the economies of scale offered by the work of the WRAP in conducting coordinated assessment activities, such as economic and air quality modeling, could be substantial in aiding States in meeting their planning obligations.

Finally, EPA's provisional view that SIPs which meet section 51.309 would satisfy the rules requirement for reasonable progress minimizes the analyses required of States which adhere to the requirements of section 51.309, compared to States making an independent submittal under section 51.308.

C. Elements of the GCVTC-based State and Tribal Implementation Plans

1. Time Period. Section 51.309(d)(1) establishes the time period of the plan to cover the 16 parks and wilderness

areas for the period 2003 through 2018. The GCVTC's recommended emissions reduction strategies, including the emission reduction approach for stationary sources of SO_2, establish the long term strategy requirements for plan submittals to EPA until the year 2018. This time period is consistent with the submittals required under section 51.308 which will be due between 2004 to 2008 depending on the classification of State areas with respect to attainment of the recently promulgated NAAQS for $PM_{2.5}$. The time period covered by the plan revision due under section 51.309, 2003-2018, is somewhat different from the timeframe for long term strategies required by section 51.308 for the Class I areas not on the Colorado Plateau. The differences that exist acknowledge the substantial early work of the GCVTC, on the 16 Class I areas, while at the same time making the strategy review cycle consistent with the timetable established in section 51.308.

The EPA received comment that it should allow the GCVTC recommendations to be the basis of all future strategies to address regional haze for the 16 Class I areas on the Colorado Plateau permanently. The EPA disagrees. No given set of emissions strategies can be determined reliably to achieve reasonable progress into the distant future. While the GCVTC strategies adopted by the States under the

provisions of section 51.309 may well continue to be adequate to meet the future long term strategy requirement, a full review of emissions strategies for all Class I areas of the region is appropriate to assure that “reasonable progress” is being achieved and will continue to be achieved during the periods of subsequent long term strategies. As noted before, the relevant facts concerning costs of controls, availability of control strategies, and other statutory factors will change over time. Such advancements in technology and changes in economic factors will likely provide opportunities for implementation of new cost-effective control measures to assure reasonable progress. The structure of EPA’s rule is designed to require States, through the SIP process, to review the statutory factors on a periodic basis and determine appropriate changes to their strategies based on that review.

2. Projection of Visibility Improvement. Section 51.309(d)(2) requires the plan to contain a projection of the visibility conditions expected through the year 2018 and to take into account the measures required in the GCVTC report and the provisions of section 51.309. This projection must, at a minimum, be expressed in units of deciview.

The Agency received comment that the GCVTC States should not be required to estimate visibility conditions using the deciview metric, but should be permitted simply to track emissions over time. While EPA encourages States to track emissions in order to evaluate the emission reduction effectiveness of adopted control measures, it is equally important that changes be translated into visibility improvements in order to be responsive to the national goal. As noted earlier in Unit III.C of this notice, discussing the deciview metric, EPA's selection of the deciview scale is an appropriate way to do this. The Agency also included this provision to ensure that the public understands the relationship of the SIP to visibility conditions at the Class I areas and to the national goal of no manmade impairment in visibility in these areas. The Agency thus feels that is appropriate to inform the public on the relationship between chosen emissions control measures and their effect on visibility by requiring States to report on actual and expected changes in visibility to be achieved through implementation of section 51.309. Those changes can be based on monitored data as well as estimated for future conditions based on implementation of emissions strategies. Moreover, the requirement for use of the deciview metric does not prevent the States from using other

indicators, in addition to the deciview, for describing regional haze conditions, such as standard visual range or atmospheric light extinction.

3. Treatment of Clean Air Corridors. Section 51.309(d)(3) requires the States to identify a geographic region which will be subject to a comprehensive emissions tracking strategy. The purpose of such comprehensive emissions tracking is to ensure that the frequency of clear days, or days with good visibility, increases or does not decrease at any of the 16 Class I areas addressed by the GCVTC. This section of the rule is designed to make the review of emissions, and their resulting impact on the clear days at the Class I areas, part of the public record through the SIP approval process. It does not mandate any emissions control strategies specifically aimed at improving clear days, but provides for the State to periodically review the need for such strategies. If anthropogenic emissions create visibility impairment above natural conditions, and if overall annual human-caused emissions reductions take place in a region, it is likely that visibility will improve for both the most impaired days and the least impaired days.

The geographic area to be covered by the emissions tracking strategy is be determined initially based on the GCVTC Meteorology Subcommittee's report entitled Clean Air

Corridors: A Framework for Identifying Regions that Influence Clean Air on the Colorado Plateau. The geographic area can be further refined based on new technical findings over time. The requirement to track emissions will enable States to quickly determine if changes in patterns of emissions will reduce the number of clean air days (defined as the average of the 20 percent clearest days) in any of the 16 Class I areas. The State must analyze the effects of the emissions changes and implement additional measures to protect the clean days if necessary. The States may include the tracking of emissions for the clean air corridors with tracking of emissions for other purposes such as compliance with stationary source emissions targets, if appropriate. The EPA notes that clean air corridors will be protected by other implementation plan requirements, such as other SIP measures that may apply to existing stationary sources. States may wish to rely on technical cooperation now beginning under the WRAP as an efficient means to consolidate efforts on emission inventories and projections needed to monitor clean air corridor emissions and their effects on clear air days.

4. Implementation of Stationary Source Reductions. To achieve the reductions in emissions for stationary sources projected in the GCVTC's strategies, subsection

51.309(f)(f)(1)(i) requires the establishment of emission reduction milestones as part of the development of an annex to the GCVTC report. Section 51.309(d)(4) requires monitoring and reporting of stationary source emissions of SO_2 in order to assess compliance with these milestones during the period 2003 to 2018. The SIP must contain criteria and procedures for implementing a market trading program or other program documented in the SIP, consistent with Section 51.309(f)(1)(i), if triggered by emissions exceeding the emissions reduction milestones. In particular, the SIPs must provide for implementation of the market-based program or other emissions control strategy as called for by an assessment of SO_2 emissions for the years 2003, 2008, 2013, and 2018. States must fully activate the market system or other program within 1 year after an assessment showing the excessive emissions. In addition, the implementation plan must provide for all affected sources to comply with the market system or other programs allocating emissions within 5 years after the date the program is triggered. The rule also requires States to report on actual emissions reductions and compare them to the established milestones. If a market trading program or other program is triggered, the rule requires States to report whether all sources covered by the market trading or

other programs are in compliance with applicable requirements.

In addition to requirements for control of emissions of SO_2, the rule requires the State to explore emission management options for stationary source emissions of PM and NO_x. The States are required to report by 2003 on their consideration of the need for emissions targets for these pollutants to prevent growth in emissions of these pollutants in the region as a whole. The EPA believes that the States should base their decisions on the need for, and levels of, emissions targets for these pollutants on the degree to which such pollutants contribute to regional haze impairment in the Class I areas addressed by their SIPs. The States must report to EPA by 2003 on their decisions whether to develop targets and additional control strategies for PM and NO_x emissions from stationary sources. If the States determine that such targets and controls are needed, they must submit a plan revision to EPA not later than December 31, 2008 containing any necessary long term strategies and BART or other requirements for stationary sources of PM and NO_x.

In adopting the requirements for stationary source emission reduction milestones in this manner, EPA is indicating the State's adoption of the milestones and backup

market trading system program set forth in 51.309(f) meet reasonable progress toward natural visibility conditions for stationary sources for the 16 Class I areas for the planning period of 2003 to 2018. The emission reductions provided for in the milestones and trading program must address the BART provisions in section 51.308(e). For the reasons discussed in the portion of today's notice concerning BART requirements, EPA believes that the GCVTC's adoption of a market based alternative to source-by-source BART will permit the GCVTC States to meet the provisions of the national rule which allow the use of alternative measures in lieu of BART. Implementation of the framework established by subsections 51.309(d)(4) and (f) will thus satisfy the provisions for an alternative measure in lieu of BART for regional haze impairment set forth in section 51.308(e)(2), provided the interim milestones called for in the annex assure greater reasonable progress than would be achieved by application of BART. The EPA will supplement its actions on the stationary source strategy with future rulemaking on the States' submission of interim milestones for SO_2 emissions as part of the annex. In reviewing the interim milestones, EPA will be informed by the annex to the GCVTC report provided for in section 51.309(f) to be discussed later.

5. Mobile Sources. Section 51.309(d)(5) requires implementation plans to address the contribution to regional haze of emissions from mobile sources. This mobile source provision is based on the GCVTC Report's finding that reducing total mobile source emissions is an essential part of any long term strategy for management of visibility on the Colorado Plateau.[123] The GCVTC found that some of these urban areas will already be developing mobile source budgets and programs to address emissions from mobile sources to meet other CAA requirements. To the extent that mobile source emissions in these or other areas are found to contribute significantly to visibility impairment in the Class I areas of the Colorado Plateau, the GCVTC recommended that an emissions budget be established for any area with a significant contribution to the regional mobile source emissions total. The GCVTC called for the budgets to be established beginning in the approximate year in which emissions from mobile sources are projected to be at their lowest point during the planning period of 2003 to 2018, which is expected to be in 2005. The emissions budget should serve both as a planning objective and a performance indicator for that area.

[123] *See* GCVTC Report, pp. 38-46.

Accordingly, today's rule requires all plans to provide for an inventory of current and projected emissions (VOC, NO_x, SO_2, elemental carbon, organic carbon, and direct fine particles) from mobile sources for the 2003 to 2018 period. Because, as noted in the GCVTC Report, the inventory for the year 2005 is expected to represent the expected lowest total emissions from mobile sources in the planning period, that inventory must be included in the SIP. Once State inventories have been compiled and evaluated, the States with urban areas found to contribute significantly to visibility impairment in the 16 Class I areas must establish and document their mobile source emissions budgets for any such area. In addition, the States must establish SIP components which limit VOC, SO_2, NO_x, elemental and organic carbon and direct fine particulate mobile-source emissions to their projected lowest levels for the period 2003 to 2018. The State plans must also provide for the implementation of measures to achieve the mobile emissions budget, and for demonstrations of compliance with any such budget. The demonstrations must include a tracking system to evaluate and demonstrate the State is meeting its share of the regional mobile-source emissions budget.

The GCVTC report also noted that the Federal government has a role in addressing mobile source emissions. The GCVTC

report identified several national mobile source-related emissions reduction strategies under consideration by EPA that are important to visibility conditions in the Class I areas on the Colorado Plateau. The GCVTC agreed to promote these initiatives on a national level. With regard to ongoing development of policies and regulations on emissions from mobile sources, the June 29 letter from the WGA requests that EPA "make a binding commitment in its final regional haze rule to fully consider the GCVTC's recommendations" on several national mobile source emissions control strategies. Comment on the regional haze rule specifically requested that EPA commit to consider development of a list of very specific national mobile source emissions control strategies.

The EPA agrees with the GCVTC's conclusion that emissions from mobile sources can be significant contributors to regional haze visibility impairment. The EPA is currently working on a number of the strategies the GCVTC requested us to "fully consider" and the summary below indicates the status of activities under way.

#	**Measure**	**Status of EPA efforts to fully consider the measure**
1	Adoption of the 49-state LEV standard in 2001 and Tier II vehicle emission standards in year 2004 (if determined to be more effective)	Combined Tier II/gasoline sulfur NPRM is being drafted, with publication expected in early- to mid-1999.
2	Support of EPA's current proposal for new on-road, heavy-duty vehicles emission standards that reduce NO_x emissions by at least 50 percent over the 1998 requirements in the CAA, while maintaining current stringent PM emission limits	Finalized 2004 standards for on-road heavy-duty in 10/97 [62 FR 54693]; reductions in NO_x emissions and secondary PM.
3	Pursue additional PM reductions from on-road vehicles	Potential actions being evaluated.
4	Pursue additional engine emission standards for new off-road vehicles (heavy-duty, construction-type) that provide reasonably achievable reductions	Finalized standards in 8/98. [63 FR 56967]. Also planning a technology review by December 2001 to evaluate feasibility standards and additional reductions.
5	Explore broader application of and additional reductions in the sulfur content of both gasoline and diesel fuel	Gasoline sulfur control-rulemaking underway. Considering regulation of diesel fuel sulfur.

#	**Measure**	**Status of EPA efforts to fully consider the measure**
6	Promotion of cleaner-burning fuels	In first year of implementing Clean-fuel fleets program. OMS presented a series of fleet manager workshops during May, June and July of ‘98. Clean Fuel Fleet Program Implementation Guidance was issued in August ‘98. We have a team within OMS working on promoting clean fuels efforts.
7	Pursue fuel standards and control strategies for diesel locomotives, marine vessels/pleasure craft, airplanes, and Federal vehicles as described in the GCVTC's Report	Study of these issues is ongoing, but no specific actions have been scheduled.
8	Support requirements for effective refueling vapor recovery systems that capture evaporative emissions.	On-board re-fueling standards for cars and trucks finalized October 1996. We may consider refueling systems for on-road, heavy-duty gasoline in future.

The EPA will continue to work with States and regional planning entities to help them assess how national mobile source emissions strategies will affect other strategies needed to ensure reasonable progress toward the national visibility goal during the implementation of the regulations promulgated today. The EPA will also grant States full credit for implementation of future national mobile source programs in emissions strategies needed to attain reasonable progress goals.

6. Emissions related to fire. Section 51.309(d)(6) requires documentation that all prescribed fire programs within the State consider and address the effects of smoke on visibility when planning and issuing permits for prescribed fires. The GCVTC Report stated that "fire has played a major role in the development of and maintenance of most ecosystems in the West."[124] In addition, the report notes "emissions from fire (wildfire and prescribed fire) are an important episodic contributor to visibility-impairing aerosols, including organic carbon, and particulate matter ($PM_{2.5}$)". Agricultural burning emissions and their effects have been identified as a concern by the GCVTC but have not been quantified due to lack of data. The GCVTC concluded that all types of fire (prescribed fire,

[124] GCVTC Report, p. 47.

wildfire, and agricultural burning) must be addressed equitably as part of a visibility protection strategy.[125]

The EPA agrees with the GCVTC's conclusions and is including in this section of the rule a requirement for the States to address all types of fire in fulfilling the requirements of this section and in submitting SIPs for approval by EPA. Section 51.309(d)(6) requires each State to establish an emissions inventory and tracking system (spatial and temporal) for VOC, NO_x, elemental carbon and organic carbon, and direct fine particulate emissions from prescribed fire, wildfire, and agricultural burning. The EPA believes that such information could be developed on a regional basis and could be accomplished through mechanisms such as recording acres experiencing fire and calculating emissions based on vegetation type and soil moisture. Most importantly, the rule requires the establishment of enhanced smoke management programs for fire that consider visibility effects, in addition to health and nuisance objectives, and calls for programs to be based on the criteria of efficiency, economics, law, emissions reduction opportunities, land management objectives, and reduction of visibility impacts. The comprehensive approach envisioned by the rule will allow States to plan a smoke management

[125] See id.

program that minimizes visibility impacts but also fully recognizes the ecological role of fire.

The smoke management plans must address all sources of fire used for land management purposes. The provisions of this section also provide for establishment of annual emissions goals for fire (excluding wildfire) that will minimize increases in emissions to the maximum extent feasible. These goals are to be established cooperatively by States, tribes, State and Federal land management agencies, and their private sector counterparts, considering factors similar to those identified for enhanced smoke management plans.

7. Dust from roads. Section 51.309(d)(7) requires States to assess the impact of dust emissions on regional haze visibility in the 16 Class I areas. If such dust emissions are determined to be a significant contributor to visibility impairment, the State must implement emissions management strategies to address their impact. In the technical work of the GCVTC, road dust was not shown to be a major contributor to regional haze impairment based on current monitoring data. However, work on future emissions projections of road dust emissions was directly tied to growth in vehicle miles traveled (VMT). The large increase projected for the West in VMT over the planning period of

the GCVTC report resulted in initial predictions of a very large contribution of road dust to regional haze.[126] This technical result was addressed in the GCVTC report and the GCVTC discounted the predictions of the future impacts from road dust. However, the GCVTC recommended that its policy conclusion that distant road dust is not likely to play an important role in regional haze should be confirmed through further tracking of road dust emissions. The GCVTC also emphasized that road dust control should be considered in locations "in and near" Class I areas.[127] The EPA agrees with this approach and has included the assessment of road dust as a requirement of the SIP. In addition, today's action requires appropriate SIP measures over time based on the contribution of road dust to regional haze.

8. Pollution Prevention. This section addresses the GCVTC's recommendations on pollution prevention and renewable energy. The GCVTC goal recommended that renewable energy comprise 10 percent of the regional power needs by 2005 and 20 percent by 2015. The Administration has recently offered legislation proposing a national mandate of 7.5 percent by 2010. The Commission's goal represents the outcome of its consensus process and is a more aggressive goal than what the Administration has proposed as a national

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126 GCVTC Report, p. 46.

127 *See id.*

mandate. As with other GCVTC recommendations, the EPA has included this provision in this rule in recognition of the overall body of the GCVTC's work and believes it is consistent with the provisions of the national rule. Section 51.309(d)(8) requires the State to summarize all pollution prevention plans currently in place, inventory the current and expected energy generation capacity through 2002, the total energy generation capacity and production for the State, the State's percentage of total energy generation and capacity that comes from renewable energy sources, and the State's anticipated contribution toward the GCVTC's goal that renewable energy comprise 10 percent of the regional power needs by 2005, and 20 percent by 2015.

The GCVTC found that to prevent further degradation of vistas in the West, it would be necessary to combine cost-effective pollution control strategies with a greater emphasis on pollution prevention, including low or zero emission technologies and energy conservation. It further found that there was a high potential for renewable energy production, especially electrical energy, and that the relative cost of renewable energy production is declining over time. The GCVTC cited forecasts of renewable energy production by the Western Systems Coordinating Council and by the Land and Water Fund of the Rockies in support of its

adoption of the goal that 10 percent of regional power needs be served by renewable energy sources by the year 2005 and 20 percent by the year 2015.[128]

In establishing assessment and reporting requirements for the States, EPA is supporting the GCVTC Report's promotion of renewable power production. Such production will likely be based on emerging renewable energy technologies such as wind, solar, biomass, and geothermal. The EPA also supports tracking annual goals for increases in renewable power generation in the transport region.[129] The GCVTC identified strategies which the States could rely on to help achieve this regional renewable energy goal, including, but not limited to, focusing research funding for renewables, financial incentives, and requiring new power generation projects to include a portion of the generation from renewable energy sources. The EPA notes that the WRAP is committed to following through on the GCVTC's recommendations and can assist the States in developing strategies which States can rely on to achieve regional renewable energy goals contained in the GCVTC Report.

In response to the GCVTC's recommendations on pollution prevention, section 51.309(d)(8) calls for each SIP to provide for incentives to reward efforts that go beyond

[128] GCVTC Report, p. 28
[129] GCVTC Report, p. 7

compliance and/or achieve early compliance with air pollution related requirements. The plan also must identify specific areas where renewable energy has the potential to supply power where it is not now provided by current service systems and where renewable energy systems are most cost effective. The plan must contain projections of the short-term and long term emissions reductions, visibility improvements, costs savings, and secondary benefits associated with renewable energy goals, energy efficiency and pollution prevention activities. The plan must also contain a description of the programs being relied on to achieve the State's contribution toward the GCVTC's renewable goals.

The State must provide a demonstration of its progress toward achieving the renewable energy goals in 2003, 2008, 2013 and 2018. The demonstration must include documentation describing the potential for renewable energy resources, the percentage of renewable energy associated with new power generation projects implemented or planned, and the renewable energy generation capacity and production in use or planned within the State. Where a State cannot feasibly meet its planned contribution to the regional renewable energy goals, the State must identify the measures

implemented to achieve its contribution and explain why meeting the State's contribution was not feasible.

Commentors on EPA's September 3, 1998 notice of availability stated that incorporation of language from the WGA letter on renewable energy restricts State and local energy planning since a SIP is federally enforceable under the CAA. Commentors also expressed the opinion that the requirements for SIPs to address renewable energy goals may overstep EPA's legal authorities which are limited to emissions limitation and pollution performance standards.

The EPA disagrees that the provisions of section 51.309(d)(8) impermissibly restrict State and local energy planning or that these provisions exceed EPA's authority under the CAA. As stated previously, the requirements of section 51.309 are provided to GCVTC States as an alternative to the general provisions of section 51.308 as a means of giving effect to the policy and technical work of the GCVTC. The goals themselves are not enforceable and States are not required to meet the renewable energy goals. However, as the WGA letter and the GCVTC provide, these provisions are not severable. States which wish to take advantage of the GCVTC's efforts and EPA's acceptance thereof are obligated to meet all of the requirements of section 51.309.

Rather, EPA is setting enforceable requirements for the States to assess progress toward a goal established by the GCVTC with respect to renewable energy production as a means for reducing dependence on more polluting forms of energy production. States participating in the GCVTC strategy are responsible for explaining why they cannot meet the GCVTC goals. The required reporting by the States will inform the public of air quality improvements that would result from that goal had it been realized. It is the relationship between renewable energy production and associated environmental effects (direct and indirect) that is the thrust of the assessment and reporting effort under the SIP.

9. Implementation of Additional Requirements. In section 51.309(d)(9) EPA requires SIPs to provide for implementation of other GCVTC Report policy and strategy options that can be practicably included as enforceable emissions limits, schedules of compliance or other enforceable measures to make reasonable progress toward the national visibility goal for the 16 Class I areas.

The GCVTC's recommendations included items that are not appropriate to directly translate to SIP requirements for every State. The EPA supports State choice of appropriate actions on other options and measures identified by the GCVTC and has, therefore, established a general provision

for SIPs calling for them to consider and adopt additional measures as necessary and appropriate. The rule further requires States to report to EPA in 2003, 2008, 2013, and 2018 on what measures have been adopted and the status of implementation of those measures.

10. International Transport of Pollution

One of the additional areas of concern noted in the GCVTC report, for instance, relates to effects of emissions from sources outside of the territory of the United States. As stated elsewhere in this notice, the EPA will not hold States responsible for developing strategies to "compensate" for the effects of emissions from foreign sources. However, the States should not consider the presence of emissions from foreign sources as a reason not to strive to ensure reasonable progress in reducing any visibility impairment caused by sources located within their jurisdiction. The States retain a duty to work with EPA in helping the Federal government use appropriate means to address international pollution transport concerns. Indeed, such efforts are under way. The EPA and other Federal officials are working with representatives of the Mexican government to complete a study which will assess the contribution of fossil fuel fired electric generation stations in northern Mexico to haze in Big Bend National Park. These efforts and funding

of work to establish emissions inventories in Mexico will help address concerns raised by the GCVTC. In addition to activities directly related to visibility effects, there are other efforts related to United States-Mexico border health standard which include. Given that emissions contributing to health effects and those contributing to visibility impairment are generally the same, the border studies and emissions inventories will help support assessment of regional visibility conditions. In addition to work with Mexico, the EPA routinely meets with representatives of the Canadian government on issues related to transport of air pollutants, particularly focusing on emissions affecting acidic deposition. The EPA intends to continue to work through appropriate channels in building technical information and addressing policy concerns related to international pollution transport.

11. Periodic Implementation Plan Revisions

Section 51.309(d)(10) requires the States to periodically assess their progress in implementing measures for protection of visibility. This includes a review of how the measures implemented under section 51.309 are consistent with the national rule’s provisions for long term strategies and BART. The assessments must be completed by 2008, 2013, and 2018 and must be submitted to EPA as SIP revisions that

comply with the procedural requirements of sections 51.102 and 51.103. As with any other review and revision of SIP requirements, States will be expected to use the most current available technical methods and procedures in conducting their assessments.

The provisions of section 51.309(d)(10) further require that where a State concludes that planning adjustments are necessary as a result of emissions occurring within the State, it revise its implementation strategies to include rule revisions that are effective within 1 year after the State makes such a conclusion in order to assure reasonable progress at any of the 16 Class I areas on the Colorado Plateau. States may also conclude, based on their assessments, that no changes to the plan are needed, and the plan revision requirement can be met by submitting a "negative declaration" as an implementation plan revision to EPA. This revision must provide the State's basis for finding that no changes are needed. This submission will provide the public with necessary information and an opportunity to comment on the State's findings.

The EPA views the requirement of section 51.309(d)(10) as a periodic check on progress rather than a thorough revision of regional strategies. The State interim assessments should focus on significant failures or

shortfalls in implementing adopted strategies and on emissions from in-State or out-of-State sources which may be causing degradation in regional haze visibility but were not anticipated in the development of the original plan and will, therefore, not be addressed by currently-adopted programs. If a State makes such findings with respect to in-State sources, EPA expects the State to revise its SIP, reducing emissions to be consistent with the regional planning effort reflected in the reasonable progress SIPs due in 2003. If transport of emissions from out of State is suspected of impairing reasonable progress, the State should identify this to EPA and should initiate cooperative efforts with upwind States so the emissions can be more fully evaluated and, as needed, addressed in the next mandatory full SIP revision. This requirement is virtually identical to the provisions for periodic review under sections 51.308(g) and (h).

11. State Planning and Interstate Coordination. Section 51.309(d)(11) provides flexibility to a State to address its contribution to visibility impairment through the regional emissions control strategies discussed above. The SIP strategies to protect the 16 Class I areas on the Colorado Plateau can thus be developed through interstate coordination in a regional planning process. Such regional

planning can help a State develop documentation of the technical and policy basis for the individual State apportionment of emissions and visibility impairment, the contribution to emissions addressed by the State's plan, coordination in the analysis of interstate transport and control of pollution with other States, and compliance with other criteria for approval of SIPs under CAA sections 110 and 169A and B. Therefore, under today's rule and EPA policy, States may rely on regional entities' efforts to develop and document technical and policy support for the SIPs required by this rule. For the purposes of implementing the requirements of section 51.309, EPA recognizes the WRAP as a regional planning group for purposes of interstate consultation under section 51.308(c).

As indicated in the introduction to the section of today's notice addressing the WGA and GCVTC recommendations, States retain the right to develop their own programs with or without reliance on the work products of a regional entity. In the case where a State chooses to develop a SIP without reliance on a regional planning process, however, the State will need to show how it accounted for the effect of its emissions on Class I areas which may be located beyond the State's borders, as well as the effect of upwind

emissions from other States on the Class I areas within its borders.

The regional haze SIP for a State choosing not to implement the requirements of section 51.309, including the SIP submittal deadlines, would be governed by the national rules provided in section 51.308. Any State choosing not to adopt a SIP in accordance with the GCVTC strategy and optional approach in section 51.309, but wishing to use the WRAP mechanism for regional cooperation in developing its SIP requirements, would need to comply with all of the requirements outlined in the national rule in section 51.308.

12. Tribal Implementation Plans. The WGA called for EPA's final rule to permit Tribes within the GCVTC Transport Region to implement visibility programs, or reasonably severable elements, in the same manner as States, regardless of whether such Tribes have participated as members of a visibility transport GCVTC. The EPA has not included the WGA's recommended rule provision in today's action because the necessary authority for tribal organizations has already been provided in a previous EPA rulemaking.[130] The EPA does, however, agree with the position expressed in the WGA recommendation. The EPA wishes to clarify that tribes may

[130] See 63 FR 7254 (Feb. 12, 1998).

directly implement the requirements of this section of the regional haze rule in the same manner as States. The Tribal Authority Rule provides for this, as discussed further in unit V of today's notice. The independence of tribes means that a tribal visibility program is not dependent on strategies selected by the State or States in which the Tribe is located. If tribes within the Transport Region decline to implement visibility programs and EPA finds that emissions management strategies are needed to assure reasonable progress, EPA will work with the appropriate Tribes directly to provide for Federal implementation of appropriate emissions reduction strategies. This is based on the government to government principles of Federal-Tribal relations.

D. Requirements for States electing not to follow all provisions of the section 51.309(e)

The EPA notes that the provisions for allowing the Transport GCVTC States to adopt SIPs based on the GCVTC recommendations requires that States endorse the range of strategies recognized by the GCVTC. A State electing not to implement the GCVTC recommendations as set forth in section 51.309(d) must address all of its Class I areas and any Class I area to which its sources emissions may contribute to impairment under the provisions of section 51.308. In addition, any Transport Region

State must advise other States electing to comply with section 51.309 of the nature and effect of their program on visibility impairing emissions so that other States can use this information in developing programs under section 51.309. This provision assures that all components needed to address reasonable progress are part of SIPs either under the provisions of section 51.309 or section 51.308.

E. Annex to the GCVTC Report

1. Interim Milestones

Section 51.309(f) calls for an annex to the GCVTC Report for the purpose of completing the program requirements to meet reasonable progress under the CAA, including submission of a complete long term strategy and addressing the BART requirement for the 16 Class I areas on the Colorado Plateau. The purpose of the annex is to develop interim emissions milestones for stationary source SO_2 interim targets between the year 2000 target and the target for the year 2040. Under section 51.309(f)(1)(i), the States must consider four specific factors in setting the interim emission milestones. The first factor affecting the selection of interim milestones is the GCVTC's definition of reasonable progress. The GCVTC notes in its report that the term "reasonable progress" refers to "progress in reducing human-caused haze in Class I areas under the national visibility

goal."[131] It goes on to note that "the CAA indicates that 'reasonable' should consider the cost of reducing air pollution emissions, the time necessary for compliance, the energy and non-air quality environmental impacts of reducing emissions, and the remaining useful life of any existing air pollution source considered for these reductions." The discussion also includes the GCVTC's Public Advisory Committee definition that "progress towards the national visibility goal is achieving continuous emissions reductions necessary to reduce existing impairment and attain steady improvement in visibility in mandatory Class I areas, and managing emissions growth so as to prevent perceptible degradation of clean air days." Together, these provisions call for the achievement of continuous emissions reductions and tracking the reductions to ensure visibility improvement in hazy days and visibility maintenance on clear days. To be consistent with and responsive to the guiding principles, recommendations and strategies adopted by the GCVTC, EPA expects any interim targets to demonstrate a significant continuous downward trend in emissions and not postpone significant progress to periods covered by future long term strategies.

The second factor is the quantifiable target for 2040 to which interim targets must contribute. This target is a 50 to 70 percent reduction by 2040 in emissions from stationary source SO_2

[131] GCVTC Report, p. x-xi

emissions, based on the projection of the GCVTC's baseline forecast scenario from actual 1990 emission levels. Interim targets should reflect assessment of reasonable measures which reduce regional loadings of SO_2. Such assessments may include examination of interim targets based on costs per ton of reducing SO_2 in line with recently adopted control measures.

The third factor is the applicable requirements of the CAA for making reasonable progress and BART. As noted previously in this notice, the CAA requires a long term strategy to ensure reasonable progress and the application of BART to certain large sources that are reasonably anticipated to cause or contribute to regional haze. The rule requires the annex to address the BART provisions of the national rule. As noted in the earlier discussion of BART, EPA will accept alternative measures, such as regional emissions trading programs, which achieve greater reasonable progress in lieu of meeting the source-specific BART requirement. As noted elsewhere in the preamble, EPA plans to issue revised BART guidance within a year. During the next year and a half, EPA also plans to issue new or revised guidance related to the design of emission trading programs, including guidance on the structure of economic incentive programs. Given this schedule, EPA intends to work closely with the WRAP as it develops the annex, its approach to meeting the rule's BART requirements and its backstop market trading program. The EPA

believes that its participation in the WRAP will help to ensure that the way in which the annex addresses BART and the market trading program will be compatible with EPA's revised BART guidance and any new or revised guidance EPA issues related to emissions trading programs.

In the event EPA finds that the annex does not meet the rule's BART provisions because it is inconsistent with EPA's revised BART guidance, the Transport Region States may submit a revised annex to address any deficiencies. The revision should be submitted as expeditiously as practicable but no later than 12 months from EPA's determination that the annex is deficient with respect to BART due to its inconsistency with the BART guidance. Similarly, if EPA finds the annex does not meet the provisions of any EPA guidance applicable to market trading programs that is issued after promulgation of this rule, the Transport Region States may submit a revision to the annex to remedy any such deficiencies. These revisions should also be submitted no later than 12 months from EPA's determination that the annex cannot be incorporated in the SIP because inconsistencies with the guidance. The EPA expects that the States and WRAP stakeholders will make every effort to address both the revised BART guidance and any new or revised emission trading program guidance within the timeframe established by section 51.309 for submittal of the annex. By providing for EPA participation in the WRAP,

encouraging State and stakeholder efforts to respond expeditiously to new or revised guidance, and calling for any needed revisions to the annex to be submitted with a year from an EPA determination of deficiency, this approach will ensure compliance with the SIP submittal deadlines in section 51.309(c).

The fourth factor to be addressed in the setting of interim milestones is the timing of implementation plan assessments of progress and the identification of mechanisms to address cases where emissions exceed milestone levels for the reporting years 2003, 2008, 2013 and 2018. This schedule is designed to achieve eventual coordination of target years with assessments for regions affecting other Class I areas. Because these efforts call for continuing consultation and sharing of information between regions as well as between States, timetables for further work by the GCVTC States are designed to bring the GCVTC States' long term strategy updates in line with the schedule for the next long term strategy update required of all other States.

2. Documentation of market trading or other alternative measures to assure reasonable progress

In addition to the interim targets, Section 51.309(f)(1)(iii) requires the annex to contain final documentation of the market trading program or other programs to be implemented by the GCVTC States if current implementation plans and voluntary measures are not sufficient to meet the

established interim milestones. This documentation must include model rules, memoranda of understanding, and other materials necessary to describe in detail and establish in enforceable fashion how emission reduction progress will be monitored, what conditions will require the market trading program to be activated, how allocations will be performed, and how the program will operate.

3. Additional Class I areas

An additional provision, section 51.309(g) allows States to elect to demonstrate reasonable progress for other Class I areas within the Transport Region States beyond the original 16 areas addressed by the GCVTC's assessment, relying on the strategies recommended by the GCVTC. See the discussion in Unit IV.F. of this preamble.

4. Geographic enhancements.

The EPA has also adopted provisions in subsections 51.309(b)(7) and 51.309(f)(4) that would allow the Transport Region States to establish a process as part of a broad regional strategy, such as backstop market trading program, to accommodate the situation where a State takes action to address reasonably attributable BART under the provisions of section 51.306(c)(2). As noted elsewhere, the annex, if approved, will allow the Transport Region States to submit a SIP which adopts an alternative measure in lieu of BART. The purpose for including

the provisions regarding geographic enhancement is to address the intersection between the existing reasonably attributable BART provision and regional haze BART, which may be met through an emissions trading program such as the milestone/backstop market trading program which is to be included in the annex. Existing rules address “hot spots”--those situations in which part of the visibility impairment in a specific national park or wilderness area is reasonably attributable to a single source or small group of sources in the airshed because of the nature and location of the pollution relative to the class I area. Should action be taken by the State to address such reasonably attributable impairment through BART, the geographic enhancement provisions would allow the backstop market-based trading program to accommodate such action. These provisions parallel a similar allowance in subsections 51.301(ii) and 51.308(e)(2)(C)(v).

The EPA is repeating these provisions, with minor language changes, to be clear that they apply to both the milestones or backstop market trading program provided for in the annex. Subsection 51.309(b)(7) defines the term geographic enhancement for the provisions governing the annex and section 51.309(f)(4) allows the annex to contain a geographic enhancement. Similar to the national program, these provisions will allow the market trading system included in the annex to accommodate situations where a State wishes to require BART control measures on a

source or small group of sources due to reasonably attributable impairment and that source has been included in the backstop market trading program under the annex. In this situation, the milestone or backstop market trading program may include a level of reasonably attributable impairment which may require additional emissions reductions over and above those achieved under the quantitative emissions reductions milestones established for regional haze.

5. The EPA Responsibilities in Relation to the annex

Section 51.309(f)(3) spells out EPA's responsibilities with respect to the annex and calls for EPA to publish the annex upon receipt. The EPA must then conduct a review and decide, after notice and opportunity for public comment, whether the annex meets the requirement of section 51.309(f)(1) and whether it assures reasonable progress. If EPA finds the interim targets and accompanying documentation meet the requirements of reasonable progress, then it will incorporate the interim targets into the stationary source SIP requirements in section 51.309(d)(4) within 1 year of receipt, after public notice and comment. If EPA decides that the annex does not meet SIP requirements for reasonable progress or if EPA does not receive an annex, it will notify the GCVTC States, who will then be subject to the general provisions of section 51.308 in the same manner as other States.

One commentor on the annex approach described in EPA's September 3 notice of availability noted that the WGA letter set forth a tight timetable for development of the market system and that it appears to violate the TEA-21 requirements. In response, EPA notes that these are the timetables established by the GCVTC in 1996 and which have been the basis for work by the follow-up body of the WRAP. With respect to TEA-21, the colloquy between Senator Allard and Senator Baucus in the Congressional Record on the conference report concerning implementation of GCVTC recommendations is instructive, and EPA believes that it fully addresses the commentor's concern. Senator Baucus stated that "[TEA-21] clarifies that it does not affect EPA's authority to provide for State implementation of the agreements and recommendations set forth in the June 1996 GCVTC Report on a schedule consistent with the GCVTC's Report. . . The conferees added specific language so as not to preclude the Administrator from providing for earlier State implementation of the GCVTC's agreements and recommendations. . ."[132] That language states that

"The preceding provisions of this paragraph shall not preclude the implementation of the agreements and recommendations set forth in the GCVTC Report dated June 1996."

ISTEA section 4102(c)(2)(the Inhofe amendment).

[132] 144 Cong. Rec. SS407 (daily ed. May 22, 1998).

F. Additional Class I areas

Section 51.309(g) calls for Transport Region States to identify in their 2003 plan submissions whether they elect to meet the provisions of section 51.308 or 51.309 in establishing their long term strategy and BART requirements for additional Class I areas not covered by the original GCVTC effort. By no later than December 31, 2008 the States electing to use section 51.309 to address additional Class I areas must submit plan revisions which include a modeling demonstration establishing expected visibility conditions on the most-impaired and least-impaired days at the Class I areas for which they seek to demonstrate reasonable progress. These demonstrations may be conducted by the State or based on refined studies conducted by regional entities. The plan must include the analyses required in section 51.308(d)(1). The plan can build upon and take full credit for the strategies adopted for the 16 Class I areas. It must also contain any additional measures beyond those strategies that may be needed to demonstrate reasonable progress in those areas, in accordance with the provisions of section 51.308(d)(1)-(4). As provided for in section 51.309(g)(2) a Transport Region State may have until no later than December 31, 2008, to submit a plan for additional Class I areas, which is the date for submission that additional Class I areas under section 51.308. Transport Region States may well benefit by addressing the

additional Class I areas under section 51.309, since using the same rule provision for both sets of Class I areas could facilitate coordination of the requirements for the areas as well as enabling consolidation of plans after 2008. Furthermore, if the State can develop the necessary demonstration for other class I areas before 2003, a Transport Region State could submit one implementation plan in 2003 covering both the 16 Class I areas and other Class I areas for which it must assure reasonable progress.

V. Implementation of the Regional Haze Program in Indian Country

This section discusses how the requirements of the regional haze rule relate to emissions released from Indian country.

A. Background on Tribal Air Quality Programs

Before discussing how the regional haze rule affects tribes, we believe it is useful to briefly describe EPA's overall policy and rulemaking efforts on tribal air quality programs.

On November 8, 1984, the EPA released a policy statement entitled "EPA Policy for the Administration of Environmental Programs on Indian Reservations." This policy statement, available on the Internet at http://www.epa.gov/indian/1984.htm, stresses a number of themes. In particular, this policy stresses that EPA, consistent with overall Federal Government policy, will pursue the principle of Indian "self-government," and that it will work with tribal governments on a "government-to-government"

basis. The policy statement also emphasizes the EPA's desire to work with interested tribal governments in developing programs and in preparing to assume regulatory and environmental program management responsibility for Indian country. The EPA will retain responsibility for protecting tribal air quality until such time as tribes administer their own air quality protection programs.

The CAA, as amended in 1990, added a new section 301(d) which authorizes EPA to "treat tribes as States" for the purposes of administering CAA programs. Section 301(d) required that EPA promulgate regulations listing specific CAA provisions for which it would be appropriate to treat tribes as States and establishing the criteria that tribes must meet in order to be eligible for such treatment under the CAA. The EPA proposed these regulations on August 25, 1994 (59 FR 43956), and finalized the rule on February 12, 1998 (63 FR 7254). Much of the regulatory language in this rule is codified in the CFR as a new 40 CFR part 49. This rule is generally referred to as the Tribal Authority Rule or TAR.

The TAR includes general eligibility requirements for tribes interested in assuming program responsibilities that are codified in section 49.6 of the rule. These eligibility requirements are designed in part to ensure that such tribes have the infrastructure needed to successfully implement a tribal air

quality program. Tribes may request a formal eligibility determination using administrative procedures contained in 49.7. Tribes may also use the administrative procedures in 49.7 to seek approval to implement CAA programs. The TAR authorizes the EPA to review requests for eligibility determinations and program approvals simultaneously. As noted in 49.7(c), tribes that are interested in seeking EPA approval to implement air quality programs under the CAA may request approval to implement only partial elements of a CAA program, so long as the elements of the partial program are “reasonably severable.”

Section 301(d)(4) of the CAA confers discretionary authority on EPA to provide through regulation alternative means, air quality protection in cases where it determines that treating tribes as “identical“ to States would be inappropriate. Accordingly, in promulgating the TAR, EPA provided flexibility to tribes seeking to implement the CAA. Some flexibility is established by virtue of EPA’s decision, under 49.4 of the final rule, not to treat tribes as States for specified provisions of the CAA. The rationale for this approach is discussed on pages 7264 and 7265 of the preamble to the final rule, and in unit III.B of the preamble to the proposed rule, or for example, unlike States, tribes are not required by the TAR to adopt and implement CAA plans or programs, thus tribes are not subject to mandatory deadlines for submittal of implementation plans. As

discussed in the preamble sections identified above, the EPA believes that it generally would not be reasonable to impose the same types of deadlines on tribes as on States. Among the CAA provisions for which EPA has determined it will not treat tribes as States is section 110(c)(1) of the CAA, which requires EPA to intervene and ensure air quality protection within 2 years after a State either fails to adopt a SIP or does not win EPA approval for a SIP that was determined to be deficient. The EPA did not apply this provision to tribes because the section 110(c) obligation on EPA to promulgate a FIP is based on failures with respect to required submittals, and, as noted above, tribal submissions under the TAR are voluntary, not mandatory. Instead, pursuant to its section 301(d)(4) discretionary authority, EPA has provided in the TAR that, where necessary and appropriate, it will promulgate FIPs within reasonable timeframes to protect air quality in Indian Country. See 40 CFR 49.11(a).

B. Issues Related to the Regional Haze Program in Indian Country.

Today's rule imposes requirements for revisions to SIPs. The rule requires States to develop SIP revisions to address regional haze, to update the SIP every 10 years, and to continue to evaluate progress toward the national visibility goal. The requirements of today's rule are among those air quality programs for which tribes may be determined eligible and receive

authorization to implement under the TAR. Tribes wishing to assume these regional haze program requirements and be “treated as States” may seek approval under 40 CFR 49, but are not required to do so. Where tribes do not take on this responsibility, EPA will ensure air quality protection in Indian Country consistent with the provisions of 40 CFR 49.11(a).

We encourage tribes to participate in regional planning efforts for regional haze. A good example of tribal participation in regional haze planning is the efforts of tribal representatives on the GCVTC GCVTC. These efforts are continuing with tribal participation on the WRAP. The EPA expects, as noted above, that additional regional planning groups will be formed in reaction to today’s final rule. A number of tribes have indicated interest in participating in regional planning efforts, and we believe this is beneficial in many respects. Tribal participation can help provide emissions inventory information that can serve to better understand the importance of sources in Indian country to regional visibility impairment. Conversely, such participation can also help provide a forum for tribal participants to alert regional planning organizations as to concerns on how regional emissions are affecting air quality in Indian country.

As noted in the preamble to the TAR, we intend to work with tribes to identify air quality priorities and needs, to build

communication and outreach to tribes on air quality issues, and to provide training to build tribes technical capacity for implementing air quality programs. We recognize, however, that not all tribes will have the resources nor the expertise to participate in regional planning efforts for regional haze. An important EPA role in regional planning efforts will be to ensure that the overall objectives of the regional haze program are met where tribes are unable to participate.

In order to encourage tribes to develop self-sufficient programs, the TAR provides tribes with the flexibility of submitting programs as they are developed, rather than in accordance with statutory deadlines. This means that tribes that choose to develop programs, where necessary may take additional time to submit implementation plans for regional haze over and above the deadlines in the TEA-21 legislation as codified in today's rule. (See unit III.B for a discussion of these deadlines.) The TEA-21 legislation changed the deadlines for State submission of SIP revisions to address regional haze, which were originally set out in section 169B(e)(2) of the CAA. Section 49.4(f) of the TAR provides that deadlines related to SIP submittals under section 169(B)(e)(2) do not apply to Tribes. We encourage tribes choosing to develop implementation plans to make every effort to submit by the deadlines to ensure that the plans are integrated with and coordinated with regional planning

efforts. In the interim, EPA will work with the States and tribes to ensure that achievement of reasonable progress is not delayed.

As noted previously in unit II of this notice, sections 169A and 169B of the CAA contain requirements for visibility protection in Class I areas, and do not require that States or Tribes develop plans and control strategies for visibility protection for additional locations. These provisions of the CAA do not require implementation plans to address regional haze in other Class I areas, such as those designated as Class I by tribes or States under section 164 of the CAA. One commenter from a Tribe expressed concerns that the scenic beauty and value of tribal areas should not be viewed by EPA as less important than the national parks and wilderness areas that have “mandatory Class I” status. While EPA believes that these Tribal areas are not afforded the same legal protection under the CAA as Class I areas, it is important for Tribes to understand that the regional haze control program for the Federal areas will help to protect scenic locations of interest to tribes. For example, the EPA believes that modeling analyses aimed at addressing Class I areas can readily add receptor locations to analyze the visibility improvements at selected Tribal locations. The EPA will work with regional planning bodies to ensure that Tribal interests are represented and to foster communication between States and

Tribes, and we will encourage the consideration of impacts on visibility in tribal locations in regional planning efforts.

VI. Miscellaneous Technical Amendments to the Existing Rule

The rule includes the following changes to coordinate the requirements of today's regional haze rule with the 1980 visibility regulations for "reasonably attributable" visibility impairment:

Section 51.300. Purpose and Applicability. We have amended this section to clarify that subpart P includes provisions for regional haze as well as reasonably attributable visibility impairment.

Section 51.301. Definitions. We have added the following terms: reasonably attributable visibility impairment, regional haze, deciview, State, most impaired days, least impaired days, implementation plan, tribe, BART-eligible source, and geographic enhancement. The other definitions in this section apply to the existing visibility program as well as the new regional haze program, except where it is noted that they only apply to the existing program.

Section 51.302. Implementation Control Strategies. We have changed references in §51.302(a) to the administrative process requirements for public hearings and SIP submissions, which are now located in §51.102 and 103. We have also amended this section to clarify that the implementation control strategies

addressed in the section apply to reasonably attributable visibility impairment.

Section 51.305. Monitoring. We have amended this section to clarify that the monitoring requirements in this section apply to reasonably attributable visibility impairment.

VII. Administrative Requirements

In preparing any final rule, the EPA must meet the administrative requirements contained in a number of statutes and executive orders. In this section of the preamble, we discuss how the final regional haze rule addresses these administrative requirements.

A. Regulatory Planning and Review by the Office of Management and Budget (OMB) (Executive Order 12866)

Under Executive Order 12866 (58FR51735, October 4, 1993) the Agency must determine whether the regulatory action is "significant" and, therefore, subject to OMB review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impacts of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a "significant regulatory action" and EPA has submitted it to OMB for review. The drafts of rules submitted to OMB, the documents accompanying such drafts, written comments thereon, written responses by EPA, and identification of the changes made in response to OMB suggestions or recommendations are available for public inspection at EPA's Air and Radiation Docket Information Center (Docket No. A-95-38).

The EPA has prepared and entered into the docket a Regulatory Impact Analysis (RIA) entitled Regulatory Impact Analysis for the Regional Haze Rule. This RIA assesses the costs, economic impacts, and benefits for four illustrative progress goals, two sets of control strategies, two sets of assumptions for estimating benefits, and systems of national uniform versus regionally varying progress goals. The RIA is a caveated and illustrative assessment of the potential

consequences of the Regional Haze rule in 2015 a year near the end of the first long term progress period, 2018. As a result of comments from the public as well as changes initiated by EPA staff, the RIA has a broader scope, improved data, and more realistic modeling than the analysis issued with the proposed rule.

Despite these improvements, the RIA is not a precise reflection of the actual costs, economic impacts, and benefits associated with the progress goals and emission management strategies developed as a result of the final regional haze rule. This is due to the fact that under the Regional Haze rule the States bear the primary responsibility for establishing reasonable progress goals as well as emission management strategies for meeting these goals. Until such time as the States make those decisions, the EPA can only speculate as to which goals may be established and what types of control requirements or emission limits might result from the associated emission management strategies.

According to the RIA, there is substantial visibility improvement due to emissions from other CAA programs such as those for the new ozone and particulate matter NAAQS and the Tier 2 Mobile Sources rule. With illustrative goals ranging from 1.0 deciview improvement in 15 years to 10% deciview improvement in 10 years, the RIA finds that between 22 and 52 percent of the

Class I area counties in the continental United States achieve or surpass the progress goals due to emissions reductions from other CAA programs. Furthermore, by looking at only partial attainment of the PM and O3 NAAQS and a modest (relative to the proposed rule) Tier 2 program, the RIA understated the visibility improvements from these and other CAA programs. Hence, if States established reasonable progress goals equivalent to the amount of visibility improvement which could be achieved by other CAA programs, the incremental control costs of the regional haze rule may be less than the costs estimated in the RIA, as noted below, for the first long term strategy period. Under these conditions there could be costs associated with the planning, analysis, and BART control elements of the rule. Incremental annualized costs for those elements are estimated to be $72 million (1990 dollars).

However, if States all choose to establish the same illustrative progress goal, the RIA estimates incremental control costs ranging from $1 to $4 billion with associated benefits ranging from $1 billion to $19 billion. But, visibility is not the only monetized effects category. Many of the benefits which could be monetized are associated with improvements to human health and other welfare effects. This is because the emission control strategies targeted at improving visibility in Class I areas also generate air quality improvements in many other parts

of the country. However, the estimated visibility benefits which are monetized are substantial, ranging, for example, from 86 to 111 percent of control costs for the 1 deciview improvement in 15 years illustrative progress goal and from 32 to 52 percent for the 10 percent deciview improvement in 10 years illustrative progress goal.

The RIA finds that the estimated net benefits (benefits minus costs) may increase and the potential for adverse economic impact would decrease if States exercise their discretion to establish State or region-specific reasonable visibility progress goals and emission management strategies.

According to the RIA simulations, not all Class I areas achieve or surpass the illustrative visibility progress goals even after the simulation of two sets of control strategies. But, the visibility improvement is substantial with 84 to 94 percent of the 121 counties with 147 Class I areas in the continental United States achieving the 1.0 deciview in 15 years goal and 31 to 43 percent of the areas achieving 10 percent deciview improvement in 10 years goal. Furthermore, all areas have improved visibility. How much of the estimated progress shortfall is due to the failure of the RIA to fully account for the visibility progress due to other CAA programs and advances in control technology is unknown.

The RIA, although highly caveated and illustrative, represents an improvement over the analysis prepared for the proposed rule. Furthermore, the RIA demonstrates significant visibility progress in 121 counties with 147 Class I areas in the continental United States. These improvements result from other CAA programs as well as those targeted at the illustrative progress goals. Despite incomplete coverage of effects and pollutants, the monetized benefits of strategies associated with illustrative nationally uniform goals are substantial, outweighing the control strategy costs under most conditions for the first long term strategy period. However, higher net benefits may result and the potential for significant adverse impact may be mitigated if States exercise the discretion to establish reasonable progress goals and emission management strategies. The flexibility for State discretion is, of course, exactly what the Regional Haze rule provides.

B. Regulatory Flexibility Act

The EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule. The EPA has also determined that this rule will not have a significant impact on a substantial number of small entities because the rule does not establish requirements applicable to small entities.

The Regulatory Flexibility Act (*5 U.S.C. §§ 601 et seq.*) (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act (Pub. L. No.104-121) (SBREFA), provides that whenever an agency is required to publish a general notice of proposed rulemaking, it must prepare and make available an initial regulatory flexibility analysis, unless it certifies that the proposed rule, if promulgated, will not have "a significant economic impact on a substantial number of small entities." 5 U.S.C. § 605(b). Courts have interpreted the RFA to require a regulatory flexibility analysis only when small entities will be subject to the requirements of the rule. *See Motor and Equip. Mfrs. Ass'n v. Nichols*, 142 F.3d 449 (D.C. Cir. 1998); *United Distribution Cos. v. FERC*, 88 F.3d 1105, 1170 (D.C. Cir. 1996); *Mid-Tex Elec. Co-op, Inc. v. FERC*, 773 F.2d 327, 342 (D.C. Cir. 1985) (agency's certification need only consider the rule's impact on entities subject to the rule).

As stated in the proposal, the regional haze rule will not establish requirements applicable to small entities. The rule applies to States, not to small entities. The rule requires States to develop, adopt, and submit SIP revisions that will ensure reasonable progress toward the national visibility goal, and would generally leave to the States the task of determining how to obtain those reductions, including which entities to regulate. In developing emission control measures, section 169A

of the CAA requires States to address best available retrofit technology requirements (BART) for a select list of major stationary sources defined by section 169A(g)(7) of the CAA. As noted in the proposal, however, the State's determination of BART for regional haze involves some State discretion in considering a number of factors set forth in section 169A(g)(2), including the costs of compliance. Further, the final rule allows States to adopt alternative measures in lieu of requiring the installation and operation of BART at these major stationary sources. As a result, the potential consequences of today's final rule at specific sources are speculative. Any requirements for emission control measures, including any requirements for BART, will be established by State rulemakings. The States will accordingly exercise substantial intervening discretion in implementing the final rule.

For the final rule, EPA is confirming its initial certification that the rule would not have a significant impact on a substantial number of small entities. The EPA notes, however, that the Agency did conduct a more general analysis of the potential impact on small entities of possible State implementation strategies. This analysis is documented in the RIA. In addition, as noted in the proposal, EPA undertook small-entity outreach activities on a voluntary basis. The EPA also has issued guidance, entitled "Guidance on Mitigation of Impact

to Small Business While Implementing Air Quality Standards and Regulations," which can be found on the internet at: http://ttnwww.rtpnc.epa.gov/implement/actions.htm#Other. This guidance outlines potential implementation strategies that would mitigate impacts on small sources and encourages States to make use of these strategies wherever possible and appropriate. The EPA did receive comments regarding the impact on the regional haze rule on small entities. These comments are addressed in the Response to Comment document.

C. Paperwork Reduction Act--Impact on Reporting Requirements

The information collection requirements in this rule relating to State requirements for the protection of visibility in specially-protected national parks and wilderness areas were submitted to OMB for review and approval under the Paperwork Reduction Act, 44 U.S.C. 3501, et seq. An Information Collection Request document was prepared by EPA (ICR No. 1813.02) and a copy may be obtained from Sandy Farmer, by mail at OPPE Regulatory Information Division, U.S. EPA (2137) 401 M Street, S.W.; Washington, DC 20460, by email at **farmer.sandy@epamail.epa.gov,** or by calling (202) 260-2740. A copy may also be downloaded off the internet at **http://www.epa.gov/icr.** The information requirements are not effective until OMB approves them.

This collection of information has an estimated reporting burden, for the fifty States and District of Columbia, of

approximately 22,000 to 47,000 hours for a 3-year period between mid-1999 and mid-2002. The Agency expects the Federal burden will be approximately 1900 to 4000 hours for the 3-year period. The Agency anticipates States costs of about $980,000 to $2,064,000 for the 3-year period. The Agency estimates the annual Federal costs to be approximately $83,000 to $175,000 for the 3-year period. These estimates include time for reviewing requirements and instructions, evaluating data sources, gathering and maintaining data, and completing and reviewing the collection of information.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it

displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995(P.L. 104-4)(UMRA), establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, 2 U.S.C. 1532, EPA generally must prepare a written statement, including a cost-benefit analysis, for any proposed or final rule that "includes any Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more ... in any one year." A "Federal mandate" is defined under section 421(6), 2 U.S.C. 658(6), to include a "Federal intergovernmental mandate" and a "Federal private sector mandate." A "Federal intergovernmental mandate," in turn, is defined to include a regulation that "would impose an enforceable duty upon State, local, or tribal governments," section 421(5)(A)(i), 2 U.S.C. 658(5)(A)(i), except for, among other things, a duty that is "a condition of Federal assistance," section 421(5)(A)(i)(I). A "Federal private sector mandate" includes a regulation that "would impose an enforceable duty upon the private sector," with certain exceptions, section 421(7)(A), 2 U.S.C. 658(7)(A).

Before promulgating an EPA rule for which a written statement is needed under section 202 of the UMRA, section 205, 2 U.S.C. 1535, of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule.

The RIA prepared by EPA and placed in the docket for this rulemaking is consistent with the requirements of section 202 of the UMRA. Furthermore, EPA is not directly establishing any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments. Thus, EPA is not obligated to develop under section 203 of the UMRA a small government agency plan. Further, as described in the proposal, EPA carried out consultations with the governmental entities affected by this rule in a manner consistent with the intergovernmental consultation provisions of section 204 of the UMRA.

The EPA also believes that because the rule provides States with substantial flexibility, the proposed rule meets the UMRA requirement in section 205 to select the least costly and burdensome alternative in light of the statutory mandate to issue regulations that make reasonable progress toward the national visibility protection goal. The rule provides States with the flexibility to establish reasonable progress goals and BART based

on certain criteria, one of which is the costs of compliance. The rule also provides States with the flexibility to adopt alternatives, such as an emissions trading program, in lieu of requiring BART. Finally, the rule provides the States with the flexibility to develop long term strategies. The regional haze rule, therefore, inherently provides for adoption of the least costly, most cost-effective, or least burdensome alternative that achieves the objective of the rule.

The EPA is not reaching a final conclusion as to the applicability of the requirements of UMRA to this rulemaking action. It is questionable whether a requirement to submit a SIP revision constitutes a Federal mandate. The obligation for a state to revise its SIP that arises out of sections 110(a), 169A and 169B of the CAA is not legally enforceable by a court of law and, at most, is a condition for continued receipt of highway funds. Therefore, it is possible to view an action requiring such a submittal as not creating any enforceable duty within the meaning of section 421(5)(A)(i) of UMRA (*2 U.S.C. 658 (5)(A)(i)*). Even if it did, the duty could be viewed as falling within the exception for a condition of Federal assistance under section 421(5)(A)(i)(I) of UMRA (*2 U.S.C. 658(5)(A)(i)(I)*). As noted earlier, however, notwithstanding these issues, the discussion in section 2 and the analysis in Chapter 8 of the RIA constitutes the UMRA statement that would be required by UMRA if its

statutory provisions applied, and EPA has consulted with governmental entities as would be required by UMRA. Consequently, it is not necessary for EPA to reach a conclusion as to the applicability of the UMRA requirements.

E. Environmental Justice -- Executive Order 12898

Executive Order 12898 requires that each Federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minorities and low-income populations. The requirements of executive order 12898 have been addressed to extent practicable in the RIA cited above, particularly in Chapters 2 and 9 of the RIA.

F. Congressional Review Act

The Congressional Review Act, 5 U.S.C. section 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing this rule and other required information to the U.S.Senate, the U.S. House of

Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A "major rule" cannot take effect until 60 days after it is published in the Federal Register. This action is a "major rule" as defined by 5 U.S.C. section 804(2). This rule will be effective [INSERT DATE, 60 days after publication].

G. Protection of Children From Environmental Health Risks and Safety Risks -- Executive Order 13045

Executive Order 13045: "Protection of Children from Environmental health Risks and Safety Risks" (62 FR 19885, April 23, 1997) applies to any rule that: (1) is determined to be "economically significant" as defined under E.O. 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency. The EPA interprets E.O. 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5-501 of the Order has the potential to influence the regulation. The regional haze rule is not subject to E.O. 13045 because it does not establish an

environmental standard intended to mitigate health or safety risks.

H. Enhancing the Intergovernmental Partnership -- Executive Order 12875

Under Executive Order 12875, EPA may not issue a regulation that is not required by statute and that creates a mandate upon a State, local or tribal government, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by those governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 12875 requires EPA to provide to the Office of Management and Budget a description of the extent of EPA's prior consultation with representatives of affected State, local and tribal governments, the nature of their concerns, copies of any written communications from the governments, and a statement supporting the need to issue the regulation. In addition, Executive Order 12875 requires EPA to develop an effective process permitting elected officials and other representatives of State, local and tribal governments "to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates."

Today's rule does not create a mandate on State, local or tribal governments. As explained in the discussion of UMRA (section VII.D), this rule does not impose on enforceable duty on

these entities. Accordingly, the requirements of section 1(a) of Executive Order 12875 do not apply to this rule.

The EPA notes, however that considerable consultation has taken place with State,local and tribal government representatives in developing the final regional haze rule. In September, 1995, EPA formed a subcommittee under the authority of the Federal Advisory Committee Act to advise the Agency on various issues related to implementation of the revised ozone and particulate matter NAAQS and the regional haze program. This group met a total of 13 times between September 1995 and completion of its duties in December 1997. Several State and local governmental representatives were on this subcommittee. The EPA received and reviewed comments from over 40 States and 1 tribal government on the July 1997 proposal. Tribes in the West have been active in discussion on regional haze, both as members of the GCVTC, and in the follow-on body, the WRAP. In addition, the EPA has held numerous meetings with State and local representatives.

I. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities,

unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Because the rule does not establish a visibility progress goal or emission management strategy, the rule does not impose control or other direct compliance requirements. Hence, the rule does not create a mandate on Tribal governments. Accordingly, the requirements of 3(b) of Executive Order 13084 do not apply to this rule.

J. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Pub. L. No. 104-113, §12(d)

(15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This action does not involve technical standards. Therefore, EPA did not consider the use of any voluntary consensus standards.

List of Subjects in 40 CFR Part 51

Environmental protection, Administrative practice and procedure, Air pollution control, Carbon monoxide, Nitrogen dioxide, Particulate matter, Sulfur oxides, Volatile organic compounds.

Dated:

_____

Carol M. Browner

Administrator