AIR RESOURCES MANAGEMENT GUIDELINE

Air is a resource in all NPS units, and many park resources and values are dependent on good air quality. Air pollution can impair visibility, injure vegetation, erode buildings and monuments, acidify water, leach nutrients from soil, and affect visitors' health and enjoyment. In order to prevent or remedy these harmful effects, the NPS will carefully manage air resources affecting NPS units. This section of the Guideline will summarize NPS responsibilities to manage the air resource, describe the activities that should be conducted to carry out these responsibilities, and explain the respective roles and responsibilities of the parks, regional offices, and the Washington Office Air Quality Division in air resource management.

DEFINITIONS

Air Quality Related Value (AQRV): A feature or property of an area whose vitality, significance, or integrity is dependent in some way upon the air environment, including visibility and scenic, cultural, biological, aquatic, and recreational resources (43 FR 15016).

Attainment area: A geographic area in which the quality of the air is better than the applicable national ambient air quality standards. This classification is pollutant specific.

Class I, II, and III areas: The area classification scheme established by Congress to facilitate implementation of the prevention of significant deterioration (PSD) (see definition below) of air quality provisions of the Clean Air Act.

Class I areas receive the highest degree of protection with only a small amount of certain kinds of additional air pollution allowed (see "Increments," below). **Mandatory class I areas** were designated by Congress and include international parks, national wilderness areas or national memorial parks larger than 5,000 acres, or national parks larger than 6,000 acres, which were in existence (or authorized) on August 7, 1977. These areas may not be redesignated to any other classification.

Congress initially designated all other attainment areas as **class II** and allowed a moderate increase in certain air pollutants. Congress prohibited redesignation of some class II areas to the less protective class III status. These include national monuments, national primitive areas, national preserves , national recreation areas, national wild and scenic rivers, national wildlife refuges and national lakeshores or seashores, areas exceeding 10,000 acres which were in existence (or authorized) on August 7, 1977, and national parks and wilderness areas larger than 10,000 acres established after August 7, 1977. These areas are called **class II floor areas**.

No **class III areas**--where a large amount of new air pollution would be allowed--were designated by Congress, but a process was established for redesignating class II areas to the more protective class I or the less protective class III status. Only states (or Native American

governing bodies) have authority to redesignate these areas, except as noted above. See Exhibit 1 for a list of NPS units designated as class I or class II floor areas.

Criteria pollutant: A pollutant for which a national ambient air quality standard has been established (i.e., sulfur dioxide (SO_2), carbon monoxide (CO), total suspended particulates (TSP), ozone (O_3), lead (Pb), nitrogen dioxide (NO_2), and particulate matter less than 10 microns in diameter (PM-10)).

Federal Land Manager (FLM): The Secretary of the Department with authority over a piece of federal land. The Secretary of the Interior has delegated his/her authority as FLM for NPS lands to the Assistant Secretary for Fish and Wildlife and Parks.

Increments: Maximum allowable increases of certain air pollutants (i.e., SO_2, TSP, NO_2, PM-10) in class I, II, and III areas. Small increases are allowed in class I areas, moderate increases are allowed in class II areas, and large increases are allowed in class III areas. These increments have been established by Congress or the Environmental Protection Agency to prevent significant deterioration (PSD) of air quality in attainment areas.

Major stationary source: Any source in a fixed location that emits at least 250 tons per year of any pollutant regulated under the Clean Air Act or any source from among 28 source categories that emits at least 100 tons per year of any regulated pollutant.

National Ambient Air Quality Standard (NAAQS): National standards established by EPA under the Clean Air Act for various air pollutants to protect public health (primary NAAQS) and public welfare (secondary NAAQS). These standards are applicable nationwide and are not to be exceeded.

Nonattainment area: An area where ambient concentrations of criteria pollutants exceed NAAQS. This classification is pollutant specific.

Prevention of Significant Deterioration (PSD): The program established under the Clean Air Act to regulate allowable future increases in air pollution in clean air regions of the country and for the planning and management of the allocation and use of air resources.

State Implementation Plan (SIP): A plan devised by a state (or EPA if a state fails to adopt an acceptable plan) to implement and enforce Clean Air Act requirements. Each SIP must include provisions to attain and maintain NAAQS, to prevent significant deterioration of air quality, and to protect visibility in mandatory class I areas.

POLICY AND PROGRAM OBJECTIVES

I. Policy Statement

The NPS Management Policies states:

The National Park Service will seek to perpetuate the best possible air quality in parks because of its critical importance to visitor enjoyment, human health, scenic vistas, and the preservation of natural systems and cultural resources....The Park Service will assume an aggressive role in promoting and pursuing measures to safeguard [air quality related values] from the adverse impacts of air pollution. In cases of doubt as to the impacts of existing or potential air pollution on park resources, the Park Service will err on the side of protecting air quality and related values for future generations. (4:17)

Air resources management will be integrated into NPS operations and planning, and all air pollution sources within parks will comply with all federal, state, and local air quality regulations....Management activities will include

inventorying air quality related values associated with each park

monitoring and documenting the condition of air quality and related values

evaluating air pollution impacts and identifying causes

ensuring healthful indoor air quality in NPS facilities

External programs needed to remedy existing and prevent future impacts on park resources and values from man-made air pollution will be aggressively pursued by participating in the developing of federal, state, and local air pollution control plans and regulations. Permit applications for major new air pollution sources will be reviewed, and potential impacts will be assessed....The public's understanding of park air quality issues will be promoted through educational and interpretive programs. (4:18)

II. Program Objectives

The goal of the NPS air resource management program is the preservation, protection, and enhancement of air quality and air quality related values of units of the National Park System by ensuring compliance with the requirements of the Clean Air Act and the NPS Organic Act. The major objectives include: (1) ensuring that facilities and activities within parks are in compliance with Clean Air Act requirements, including state and local regulations; (2) acquiring information and tools needed to document air quality conditions in parks, evaluate trends, identify resources that may be or are affected by air pollutants, determine cause and effect relationships, and estimate changes that might result from increasing or decreasing pollution levels; and (3) using available information to remedy existing and prevent future air pollution effects on park resources and values, including participating in federal and state regulatory development and stationary source permitting processes, as required by the Clean Air Act.

AUTHORITIES

General Authorities for Air Resource Management

The NPS's air resource management-related responsibility is grounded in several acts of Congress. See the discussion of general authorities in Chapter 1. Other laws provide a variety of opportunities for aggressive NPS action to manage the air resource and protect park resources and values that are dependent upon good air quality. These include the National Environmental Policy Act, the Wilderness Act, the Endangered Species Act, and the Surface Mining Control and Reclamation Act. The enabling legislation or the accompanying legislative histories for numerous individual parks also indicate Congress' clear intention of protecting resources and values that might be sensitive to air pollution (e.g., superlative scenic features that depend on good visibility). In addition to these general grants of authority, Congress made more explicit the NPS's authority and duty to protect park resources from air pollution-related damage in the Clean Air Act Amendments of 1977.

II. Clean Air Act

A. Purposes of the Act

The main purpose of the Clean Air Act is to protect and enhance the nation's air quality to promote the public health and welfare. The Act establishes specific programs that provide special protection for air resources and AQRVs associated with NPS units. For example, sections 160-169 of the Act establish a program to prevent significant deterioration of air quality (PSD) in clean air regions of the country. The purposes of the PSD program are to protect resources that might be sensitive to pollutant concentrations lower than the NAAQS and "to preserve, protect and enhance the air quality in national parks, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic or historic value." In section 169A of the Act, Congress also established a national goal of remedying any existing and preventing any future manmade visibility impairment in mandatory class I areas.

B. Air Quality Control Plans

The EPA has responsibility for publishing national standards and regulations to guide the development of air quality control programs, consistent with various requirements in the Act. State and local governments have the primary responsibility for the development, implementation, and enforcement of air pollution prevention and control plans. If states fail to adopt State Implementation Plans (SIPs) consistent with EPA regulatory requirements, EPA must promulgate a federal air quality control implementation plan. SIPs contain a wide variety of measures to achieve clean air goals. One of the major required elements of any SIP is a requirement for a pre-construction review of air quality impacts from major new or expanding stationary sources of air pollution.

C. NPS Role in Air Quality Planning

The Clean Air Act generally requires states to consult with the Federal Land Manager (FLM) when developing and revising SIPs that might affect any federal lands, regardless of the classification of the area. Congress specifically required FLM involvement in the development of PSD and visibility protection SIPs. Like any party, the NPS also has an opportunity to participate in the required pre-construction review of major new or expanding air pollution sources and to express concerns or suggest mitigation measures to reduce or eliminate impacts on park air resources.

The Clean Air Act provides the highest degree of protection for class I areas. Congress gave FLMs and superintendents an affirmative responsibility to protect air quality related values of class I areas. In order to carry out this responsibility, Congress further directed that the FLM must be involved in the permitting process which takes place before a major stationary source of air pollution is constructed, if the emissions from the source are likely to affect a class I area. The FLM is required to consider, in consultation with the permitting authority, whether the source will have an adverse impact on AQRVs of the class I area. If pollution emitted by the source is predicted to cause or contribute to an exceedance of the allowable pollution increments for class I areas, then the permitting authority may not issue a construction permit unless the FLM certifies that there will be no adverse impact on AQRVs. Even in cases where allowable increments are not exceeded, the FLM should carefully analyze impacts on AQRVs. If the FLM can demonstrate to the permitting authority's satisfaction that AQRVs may be adversely affected, even though increments would not be exceeded, no permit will be issued.

D. NPS Role in Visibility Protection

The visibility protection provisions of the Clean Air Act and EPA's implementing regulations give the NPS FLM a key role in protecting visual air quality in mandatory class I areas. First, the FLMs were required to identify mandatory class I areas where visibility was an important value. In response to this requirement, the FLM for the NPS notified EPA that visibility is an important value in all 48 class I areas managed by the NPS. Secondly, the FLM was given an opportunity to identify scenic vistas associated with class I areas that are important to the visitor's enjoyment even though the views extend beyond park boundaries. The FLM published a proposed regulation listing numerous such views, but later decided visibility in these views could be adequately protected without a formal regulation.

The FLM is also charged with notifying states (or EPA, if the affected state has not adopted a visibility protection SIP) if there is existing visibility impairment in any class I area and identifying the suspected source(s) of the impairment, if possible. This notification of "existing impairment," which can be made at any time, triggers certain additional requirements. First, the state (or EPA) must determine if the impairment is reasonably attributable to a specific source or small group of sources. Monitoring or modeling can be used to assess whether the source(s) causes or contributes to significant visibility impairment. If it is determined that the source at least contributes to visibility impairment, then the state (or EPA) must assess whether further emission reductions at the source would perceptibly improve visibility. If a perceptible change

would result, than the state (or EPA) must determine the best available retrofit technology (BART).

The BART analysis includes consideration of available technology, costs of compliance, energy and non-air-quality impacts of compliance, other pollution control equipment in use, the remaining useful life of the source, and the degree of improvement likely to result. Once the state (or EPA) establishes BART through this cost-effectiveness analysis, the source owner or operator may apply to the EPA Administrator for an exemption from BART. Public notice and comment on the exemption request is required. If EPA decides to grant an exemption, it will only be effective upon concurrence by the FLM.

In cases where existing visibility impairment in a class I area cannot be reasonably attributed to a specific source or small group of sources, the NPS will encourage states (or EPA) to develop more comprehensive, long-term strategies to minimize regional visibility impacts.

See 40 CFR 51.300 et seq. for detailed regulatory requirements related to visibility protection.

E. NPS Compliance Responsibilities

The Act also places constraints on any development or management activities within parks which could affect air quality by requiring parks to comply with all federal, state, and local air pollution control laws and regulations (Section 118). For example, all parks, including those with exclusive jurisdiction, must obtain any necessary air quality permits before constructing facilities or engaging in activities (such as prescribed fires) that might emit air pollutants.

RELATIONSHIP TO OTHER GUIDANCE

See also Air Resource Management Manual, published by the Washington Office Air Quality Division, and NPS-18, the Fire Management guideline. In this Guideline, see Chapter 4, Environmental Compliance.

PROGRAM GUIDANCE

I. Basic Air Resource Management Questions

In approaching air pollution problems, several basic questions provide a useful investigative method for analyzing and understanding such problems and their potential consequences for park resources. These basic questions relate to the types of air pollutants of greatest concern, the sources of these pollutants, and their potential effects on park resources. To the extent that park or regional staff are able to anticipate and/or begin to gather the data necessary for responding to these questions, the process of defining the problem and determining appropriate action can be facilitated.

1. Which resources, if any, are known to be, or potentially may be, affected by the pollutant? What are those effects?

2. What are the current and/or projected levels of the pollutant in the ambient air?

3. Are the measured or projected pollutant levels high enough to cause effects?

4. How will the pollutant affect the protected resources, the ecosystem, or visitor enjoyment?
5. What is/are the source(s) of the pollutant?

6. What can be done to control/mitigate the pollutant's emissions and effects (including legal and regulatory options)?

These basic questions are explained in much greater detail in the Air Resource Management Manual published in 1984 by the Washington Office Air Quality Division. What follows is a general discussion of major NPS air quality related activities, which help, provide answers to these basic questions. The activities include internal programs, such as monitoring (criteria pollutants, visibility, and biological effects), modeling, park operations and planning, and interpretation; and external (interagency) programs, such as resource management planning, review of industrial development plans and air pollution permit applications, legislative and regulatory development, participation in the SIP process, and park redesignation. The roles and responsibilities of the Washington Office Air Quality Division (AQD), regional offices, and individual parks, are briefly discussed and described under Roles and Responsibilities, below.

II. Internal NPS Activities

Internal air resource management activities are those in which NPS personnel are the primary participants and the activities are primarily confined to parks. Field staff have initial responsibility for identifying a need for such activities, although service-wide initiatives and Congressional mandates are also likely to affect the nature, extent, and duration of activities undertaken in some parks. Regional offices establish priorities on a region-wide basis, and the AQD has responsibility for maintaining an effective and efficient service-wide air quality program and otherwise ensuring compliance with statutory and regulatory requirements.

A. Inventory and Monitoring of Air Quality Related Values

Air quality and related values are monitored in NPS units for several reasons. The primary objectives of monitoring are to:

1. establish existing or baseline concentrations in NPS units,

2. assess trends in air quality in NPS units,

3. judge compliance with national air quality standards,

4. assist in the development and revision of national and regional air pollution control policies which might affect parks,

5. provide data for atmospheric model development and evaluation,

6. correlate existing effects on park resources with existing air quality levels, and

7. provide meaningful input when commenting on proposed new sources of air pollution.

Some of these objectives are satisfied by long-term monitoring at selected NPS sites nationwide; others may require that park-specific data be collected. The Service-wide Air Quality Monitoring Strategy (AQD, 1990) discusses what kinds of monitoring are appropriate to meet park, regional, and Service-wide needs. This section of the Guideline provides a general summary of monitoring objectives, requirements, and data uses.

In addition to monitoring specific pollutants in the air, meteorological monitoring is often conducted, because it can help explain monitored concentrations. The following meteorological parameters are typically measured at these stations: wind speed and direction, temperature, dew point, solar radiation, and precipitation.

1. Ambient Air Quality Monitoring: Criteria Pollutants

Two gaseous criteria pollutants, ozone and sulfur dioxide, are particularly toxic to native plant species found in NPS units. These pollutants are known to be harmful to vegetation even at levels below the NAAQS established by the Environmental Protection Agency. Ozone (which forms when volatile organic compounds and nitrogen oxides interact in the presence of sunlight) can be transported long distances in the atmosphere and thus is often an area-wide problem. Because of high ozone levels in most urban areas throughout the nation, ozone levels in many NPS units are also high enough to adversely affect human health. Sulfur dioxide is more likely to be a localized problem (within 100 km of the pollution source), affecting individual parks.

The EPA has established reference and equivalent methods for the measurement of air pollutants for which NAAQS have been established. (See 40 CFR 53 and 58.) The EPA requires the use of this methodology by federal, state, and local agencies wishing to use the measurement data for regulatory purposes, such as determining the attainment status of an area with respect to these standards. Because the NPS is involved in numerous regulatory arenas at the state and national level requiring the use of measurement data comparable to those collected by state and federal agencies, the NPS relies on the sampling methodology specified by the EPA. Any criteria pollutant monitoring conducted in NPS units must conform to EPA requirements.

In order to ensure compliance with EPA requirements, including quality assurance and quality control requirements, the Washington Office AQD has responsibility for coordination and supervision of the NPS gaseous pollutant monitoring network. Site field operations are carried out in one of four ways. Generally, NPS park personnel are trained to operate and maintain the

monitoring equipment, perform routine quality control checks, and calibrate the instruments. The NPS can also enter into cooperative agreements with state or local agencies to obtain some level of support ranging from total operation to assistance to NPS site operators. Where it is not possible to obtain site operations support from either the park, state, or local agencies, NPS monitoring support contractors will assume this responsibility by hiring and training a local person to function in this capacity. Finally, some sites located in NPS units are funded and operated by the respective state or local agencies.

The collection of scientific data requires that procedures be developed to ensure that the data are sound and defensible. The AQD adheres to this philosophy and takes the necessary steps to ensure that the data are valid and comparable to those collected by other federal, state, and local air pollution control agencies. The AQD has implemented a quality assurance program that meets EPA requirements, including written standard operating procedures for equipment and site operations, a Service-wide training program, and a schedule of external quality assurance performance and system audits. A minimum of one performance and system audit is conducted at each site to supplement any audits currently being performed by state and local agencies.

2. Visibility Monitoring

Scenic resources are extremely sensitive to air pollution. Even a very small amount of fine particulate matter (less than 2.5 microns in diameter or one tenth the diameter of a human hair) in the air can affect the ability to perceive colors, contrast, texture, and form of features, landmarks, and panoramas. Visual air quality is very important to park visitors. Specific vistas are often mentioned in legislation or Congressional reports concerning the establishment of an NPS unit. Visibility in mandatory class I areas is also specifically protected by the Clean Air Act, and the NPS is required to be involved in decisions made by other agencies if visibility in a class I area might be affected. Therefore, the NPS conducts visibility monitoring and research to provide managers with the tools, methods, and data needed to manage and protect visibility in the parks.

Visibility monitoring provides information about current visibility conditions at the parks, and, over time, can be used to assess trends. When view monitoring (using cameras) is combined with aerosol monitoring (using fine particle samplers), information about the composition of the particles in the air associated with visibility impairment can be obtained. This information can be used to determine how much of the observed visibility impairment is manmade, and what types of sources emit the identified particles. Analysis of the monitoring data and research on the transport and transformation of pollutants in the air help to identify the urban and industrial areas that cause or contribute to manmade visibility impairment.

Visibility monitoring is conducted primarily in class I areas, but should also be considered in response to a particular visibility problem, or if visual air quality is an especially important value at a park, or if the park is situated along an important pollution transport pathway. The AQD has Service-wide responsibility for the NPS visibility monitoring and research program, including data analyses and reporting on a routine basis. The AQD should be consulted to determine whether and how visibility should be monitored in a specific park. Regional offices help set

priorities for visibility monitoring and special project requests submitted by parks. Park staff provide substantial assistance in operating and maintaining visibility monitoring equipment.

The EPA has not yet established reference methods for visibility monitoring, but the NPS is currently cooperating with the EPA and other federal land managers to develop and test such methods through the IMPROVE (Interagency Monitoring of Protected Visual Environments) program. Many NPS-managed class I areas are part of the IMPROVE network, which was established to meet regulatory needs and is managed by a committee composed of the EPA, NPS, and other federal land managers.

3. Biological Effects Monitoring

Air pollution also affects biological resources. Vegetation is generally more sensitive to air pollution than animals and will usually show the first biologically detectable effects of air pollutants. Therefore, biomonitoring and related research activities should focus on air pollution effects on native plant species and be designed to:

1. determine the sensitivity of native plants to different air pollutants,

2. identify air pollution impacts on sensitive plants, and

3. establish baseline conditions of plants and monitor trends in NPS ecosystems.

Biological effects studies are used to examine the effects of air pollution on a wide range of plant species in the parks, with emphasis on class I areas and areas where pollution effects are suspected because of proximity of air pollution sources, observed visible injury, or presence of known sensitive species. Some studies may be done in the field, others in controlled laboratory situations. Biomonitoring studies, in particular, may be designed in such a way as to provide information on a variety of natural and manmade effects on native vegetation. These studies may involve taking samples of plant material for chemical analysis or surveying for foliar injury or ecological damage in one or more plots selected throughout a park.

Biomonitoring studies are used to detect the first sign of air pollution effects on biological resources in an area. Such studies should use species that are native to the area and known to be sensitive to air pollution. If a non-native species is used, conditions should be carefully controlled to ensure that the species (or genotype) is not introduced into the park. The sensitive species used in biomonitoring are called biomonitors or bioindicators, and include bioaccumulators. The AQD can provide technical assistance in identifying appropriate biomonitors in most NPS units. Inventories can be used to compile information on biological resources that may be sensitive to air pollutants to help determine whether increased air pollution emissions near an NPS area might endanger biological resources in the park. These studies compile information about the presence and geographical extent of plant species in the parks, including vascular and nonvascular plants.

In order to help determine the relationship between air pollution and various biological effects, individual plants of a species can be exposed (in the laboratory or the field) to carefully controlled amounts of one or more air pollutants at varied frequencies of exposure. These studies are coordinated by the AQD, in response to field requests or Service-wide needs. Species most likely to be selected for fumigation include species sensitive to air quality, the most common species in NPS units, dominant species, or rare and endangered species. (See Chapter 2, Freshwater Resources Management, E. Impacts on Aquatic Habitats, for a discussion of effects of atmospheric deposition on aquatic organisms and Endangered, Threatened, and Rare Species for a discussion of permits required.)

B. Air Quality Modeling

An air quality model is the mathematical representation (or "model") of the physical and chemical processes by which air pollutants are emitted into, dispersed, transformed, and deposited out of the atmosphere. It attempts to approximate the mixing and progressive dilution of pollutants through the atmosphere in order to predict the effect that a source or sources of pollution will have on air quality levels at particular ground points called "receptors." Air quality modeling is relied on in situations where air pollution monitoring data are not available, such as new source permit applications, or when existing air pollution is suspected as a cause of resource (AQRV) damage in a park with no air monitoring.

The EPA has published a guideline on air quality models to foster consistency in model applications and to improve modeling procedures. These models can be used to assess impacts from air pollution sources within parks or in close proximity to parks (50 km). In order to comply with NPS air resource management responsibilities, more sophisticated models should be developed to address meteorology and pollutant deposition in complex terrain, as well as transport of pollution into parks from urban and industrial areas hundreds of kilometers away. Therefore, the NPS, through the AQD engages in extensive research activities for the purpose of improving modeling techniques to address these situations.

C. Incorporating Air Quality Management into Park Planning

1. Air Quality Compliance Requirements

When the sources of air pollutants are within the parks themselves, the NPS should make resource management decisions balancing the need for the activities emitting pollutants and the need to protect park resources from the pollutants. In any event, all air pollution sources within parks (even those with exclusive jurisdiction) must comply with all federal, state, and local laws and regulations. Facilities and activities that might be affected by this compliance requirement include prescribed fires, heating plants, industrial boilers, incinerators, asphalt batch plants, earth moving or disturbance activities (e.g., construction or demolition of roads or structures), and wood/coal-burning stoves.

Parks must always consult with their regional air quality coordinator or the AQD prior to engaging in any activity or commencing construction of any facility that might emit air

pollutants, including smoke, to determine compliance requirements. These requirements may vary depending on the location and nature of the activity, and the size and type of facility. The AQD can assist in the design of facilities and the selection of fuels which will assure the maintenance of good air quality in parks. Civil penalties (up to $10,000 per day or infraction) may be levied by federal, state, or local air pollution control authorities for violations of air quality control regulations.

2. NPS Internal Planning

The park planning process provides excellent opportunities for NPS personnel to identify and carry out air resource management responsibilities. It is important to include air resource management objectives and projects in NPS planning documents to ensure that projects to protect the park resources and enhance visitor enjoyment are funded and implemented. Documenting air quality objectives and issues in park management plans also provides a useful record of management concerns for use in external decision arenas. Park staff, in consultation with regional air quality coordinators, are normally responsible for ensuring that air resource management is adequately addressed in NPS planning documents. Park staff also have an important role in implementing the air resource management projects.

The statement for management should identify issues, problems, and management objectives related to air quality and AQRVs. Air resource management objectives could be addressed in several sections, including inventory and analysis of influences, land uses and trends, major issues, and management objectives. Air quality discussions should also be incorporated into the resources management section of the general management plan, which establishes actions to monitor, inventory, study, restore, interpret, and perpetuate a park's natural and cultural resources.

Air resource management issues should be addressed in detail in the resource management plan. The RMP contains strategies designed to resolve issues and problems related to a park's resources as well as research programs needed to more accurately define crucial aspects of those problems. Air quality related issues may be integrated into one project statement, or various aspects of monitoring and research may be discussed in several project statements. The project statement(s) should include references to legislative authorities and mandates, air quality designation (whether the area is class I or II, and the attainment status for each criteria pollutant), detailed descriptions of air quality conditions and issues and how they may affect park resources and visitors, alternative actions, and the recommended actions.

Class I areas and other parks with critical or sensitive AQRVs should consider developing comprehensive air resource management "action plans." In addition to describing past, ongoing, and proposed air quality monitoring and research projects, this plan would also explain how information about park air resources will be used, internally and externally, and what actions will be taken to remedy existing problems and prevent future ones. Management objectives could also be more specific and explicitly stated if sufficient data are available, including, perhaps, establishing park-specific ambient air quality standards or visibility protection standards. When

developing comprehensive action plans, parks should work closely with the appropriate regional air quality coordinator and technical experts in the AQD.

3. Air Quality Project Funding

Funding requests to accomplish objectives discussed in the park planning documents, particularly those included in RMP air quality project statements, should be submitted on forms 10-238 (development/study package proposal) or 10-237 (proposed base funding increase). These forms are required for each project requiring funding, and provide details of and justifications for the project. Instructions for completing these forms are found in NPS-71, the draft Budget and Programming guideline. Funding for air quality projects may be obtained from a variety of sources, primarily within the NPS. These funding sources include the park base, the regional base, fee revenues, the Natural Resources Preservation Program, the Service-wide Air Quality account, the Fire Program, the Acid Precipitation Program, and the Cultural Resources Preservation Program. The AQD manages the Service-wide Air Quality account, which is allocated annually to the highest priority projects as jointly determined by the Regional Directors and the Associate Director, Natural Resources. Priority-setting normally occurs on an annual basis, but is based on multi-year project request files. See further, Chapter 5, Natural Resources Budget Formulation.

D. Interpretive Activities

It is important for the public to understand how air pollution affects park resources, since the public plays a key role in bringing about those actions needed to remedy existing air pollution problems and prevent future ones. Interpretive activities provide excellent vehicles for explaining air quality conditions and concerns, NPS responsibilities to protect park air resources, and air resource management activities, including research and monitoring programs, as well as participation in regulatory matters.

Park staff are responsible for preparing those elements of interpretive programs which address the air resource. The AQD can provide park-specific or Service-wide information for use in developing interpretive media. All air quality related interpretive materials, programs, or exhibits developed by parks must be reviewed by the regional air quality coordinator, in conjunction with the Regional Branch of Interpretation or AQD prior to publication or presentation in order to ensure technical accuracy and policy consistency.

In parks that conduct visibility monitoring, wayside exhibits at scenic overlooks are particularly effective in explaining visibility conditions and concerns. In addition, exhibits on native vegetation can incorporate information about air pollution effects on sensitive vegetation. Site bulletins can be developed to provide more detailed information on specific issues. Interpretive talks, including slide presentations or field trips to monitoring stations, are another way of imparting air quality information.

III. External (Interagency) Cooperation

A. Overview

In most cases, the air pollution affecting park resources and values comes from outside the parks. Information from the air quality monitoring and research program is used to support NPS participation in external decision-making arenas. NPS concerns and recommendations regarding proposed or existing air pollution sources are directed to the governmental agency that has authority to regulate existing air pollution sources and to permit construction of new sources. Cooperation is also elicited from industry to ensure protection of NPS resources. The Clean Air Act requires that the NPS be involved in reviewing state implementation plans, particularly those plan elements related to prevention of significant deterioration of air quality in clean air areas and to protect visibility in class I areas. The NPS is also required to evaluate the effects that a new air pollution source might have on nearby park resources. The AQD has Service-wide responsibility for ensuring compliance with these Clean Air Act requirements, in coordination with NPS regional offices and parks.

B. Reviewing Impacts of New Air Pollution Sources

1. Resource Management Planning

Other federal agencies engage in resource management planning activities similar to the NPS process. For example, the U.S. Forest Service and the Bureau of Land Management each have planning programs for integrating resource development and resource protection activities within their jurisdictions. To the extent that NPS lands are near lands managed by other federal agencies, these resource management planning programs may have direct or indirect impacts on air quality or AQRVs. Park staff have responsibility initially for identifying opportunities to work cooperatively with other land managers to ensure that potential conflicts are anticipated, avoided, and resolved. This requires early involvement (e.g., at the scoping stage) in other agencies' planning processes, including the assessment of potential environmental impacts.

Parks should consult with regional air quality coordinators to determine whether another agency's development plans might adversely affect air quality and AQRVs. If highly technical expertise is required to communicate concerns and recommendations to another agency (e.g., modeling of air quality or visibility impacts is needed), then the AQD should be consulted as well. The AQD may also review draft environmental impact statements at the request of the Washington Office Environmental Quality Division or on its own initiative if major energy or industrial development is planned that could affect park air resources. In such cases, the AQD review is coordinated with the regional air quality coordinator or regional environmental compliance officer.

2. Review of Permit Applications for New Air Pollution Sources

If an industrial or energy resource developer wishes to construct or modify a major stationary source of air pollution, the developer must first obtain a permit to emit air pollutants. Usually the

permitting authority is a state or local agency, but permits may also be issued by the EPA. The permitting authority must notify the public of permit applications for major stationary sources, and a public comment period must be provided. This process gives the NPS an opportunity to be involved in any decision to permit increased air pollution near any NPS unit--regardless of the area's classification.

If the permit applicant proposes to locate the air pollution source near a class I area, the permitting authority must notify the federal land manager (FLM) and provide the FLM a reasonable opportunity to comment on whether the proposed source would adversely impact AQRVs of the class I area, as required by section 165 of the Clean Air Act. The FLM for the NPS is the Assistant Secretary for Fish and Wildlife and Parks, and the AQD serves as technical staff to the FLM in carrying out this responsibility. If permit applications for sources affecting class I areas are received by a park or regional office, a copy must immediately be sent to the AQD Denver field unit. The AQD reviews the permit application, assesses potential impacts, prepares technical comments, and recommends policy positions to the affected Regional Director and superintendent, through the regional air quality coordinator. The AQD generally prepares NPS comments for the Regional Director's signature.

In controversial cases or other cases where technical review suggests that class I area AQRVs might be adversely affected, concurrence from the FLM must be obtained before NPS comments are transmitted to the permitting authority. In addition, if class I increments are expected to be exceeded and technical review shows that no adverse impact on AQRVs is likely to result, the permit applicant will need to obtain a certification to that effect from the FLM before a permit can be issued by the permitting authority. Only the FLM can issue such a certification. The procedures for doing so are set forth in 47 FR 30226.

When determining whether the changes caused by air pollutants constitute an adverse impact on air quality related values, the NPS primarily looks at whether the national significance of the area would be diminished, whether the structure and functioning of ecosystems would be impaired, or whether the quality of the visitor experience would be impaired. The frequency, magnitude, duration, location, and reversibility of the potential impact are also taken into account.

C. Legislative and Regulatory Development

In order to carry out its air resource management responsibilities, the NPS participates in the development of air quality related legislation and regulations, at both the federal and state level, to promote establishment and implementation of air pollution control programs that consider and address existing and potential air pollution impacts on park resources and values. Because of the Service-wide effect of federal legislative and regulatory programs, the AQD has the primary responsibility for monitoring air quality related legislative and regulatory proposals and preparing comments or testimony on behalf of the NPS. The AQD ensures that any necessary NPS or Departmental clearances are obtained prior to external release or publication of NPS comments.

1. Incorporation of Park Air Resource Protection Goals in State Implementation Plans

States are required to develop SIPs detailing how they plan to protect air quality. These plans must include strategies needed to attain NAAQS, to prevent significant deterioration of air quality in clean air areas, and to make reasonable progress toward the national visibility goal. Using information and analytical tools developed through the NPS air quality research and monitoring program, the AQD has primary responsibility for working cooperatively with states to develop plans consistent with federal requirements and park protection goals. The AQD encourages and supports regional and park staff involvement in this planning process. The AQD has responsibility ultimately, however, for preparing NPS comments on SIP proposals for the appropriate Regional Director's signature, after obtaining any necessary concurrences from the FLM. FLM concurrence on most SIP-related NPS comments is required.

D. Redesignation

States and Indian tribes are given authority under the Clean Air Act to redesignate clean air areas to provide greater or lesser protection from air pollution degradation. The NPS encourages and supports redesignation actions which will provide added air quality protection under the law wherever necessary and feasible, and, conversely, to intervene in proposed redesignation which would allow greater air quality degradation.

Prior to a redesignation, a state must conduct an analysis which addresses the health, environmental, economic, social, and energy effects of the proposed redesignation. Public hearings must be held in the area prior to the redesignation. If federal lands are being considered, the FLM must have an opportunity to comment.

The Clean Air Act required the FLMs to review all national monuments, primitive areas, and preserves and to recommend those areas for possible redesignation where air quality related values were important attributes. The NPS conducted its review and published a list of those areas in the Federal Register on June 25, 1980.

There are various ways in which the NPS can become involved in the redesignation process, including:

1. working with states which are contemplating redesignation actions and assisting in preparation of relevant sections of the required analysis;

2. working with appropriate state officials to help assure that redesignation procedures provide for adequate consultation with NPS officials as to the effects of the proposal on park air quality and AQRVs; and

3. becoming actively involved in public review of redesignation issues at the national, state, and local levels, including presenting NPS views in writing, attending meetings, participating in public hearings, and assisting local/state government officials in their assessment of redesignation issues.

Official NPS recommendations related to redesignation actions require concurrence from the FLM.

ROLES AND RESPONSIBILITIES

I. Park

Superintendents play a critical role in planning and carrying out air resource management activities, particularly with respect to monitoring air quality conditions and identifying resource threats. The superintendent's responsibilities include:

1. identifying all air quality related values and resource threats related to air quality in the resource management plan(s), including developing management objectives, project statements, and funding requests;

2. submitting for review to the regional office and the AQD any air quality permit applications received from permit applicants or federal, state, or local air quality agencies;

3. being aware of and complying with all federal, state, and local air quality regulations that affect park operations and facilities;

4. ensuring diligent participation by park staff in air quality data acquisition activities, including operation and maintenance of monitoring equipment;

5. in consultation with the AQD, issuing health warnings or alerts to visitors when pollution levels within the park are observed or expected to exceed levels hazardous to human health, and notifying the regional safety officer of this action;

6. being aware of proposed industrial or energy resource development activities that may influence the park's air quality, including participating in scoping processes for such projects and requesting technical and policy assistance from the regional office or AQD, when necessary;

7. participating in public hearings and meetings where issues relevant to protection of air quality in the parks is the issue;

8. cooperating with other federal, state, or local agencies or research/academic institutions in air quality monitoring or research which may contribute to the Service's goal to perpetuate the best possible air quality in parks by providing information needed for decision-making that affects air quality in parks; and

9. ensuring that interpretive materials and media developed by park staff related to air resource management has been reviewed by NPS technical and policy experts.

II. Region

Regional offices coordinate air quality related matters between the parks and the AQD. Each regional office designates a **regional air quality coordinator (AQC)** who is generally responsible for this coordination function. The AQC also keeps regional management apprised of significant air quality issues affecting parks in the region. AQC responsibilities include:

1. providing technical and policy assistance on routine air quality matters to parks and regional management, and ensuring that the AQD is consulted on nonroutine, controversial, or other matters requiring a high level of technical or policy expertise;

2. reviewing park management plans to ensure their adequacy and accuracy in the area of air resource management (including interpretation) and monitoring;

3. seeking to obtain the necessary research or monitoring for parks where air pollution is a threat to park resources and values, including soliciting air quality related project requests from parks, ranking such projects on a regional basis, and participating in allocation of the Service-wide air quality project account;

4. in consultation with the regional chief scientist, reviewing and approving all research programs initiated in regional park units;

5. coordinating park and regional office concurrence on comments/testimony prepared by the AQD on air pollution permit applications and SIPs, including ensuring the timely submittal of those comments to the permitting/regulatory authority; and

6. disseminating air quality data and reports published by the AQD to parks.

III. Washington Office

Procedurally, the Departmental Manual delegates the authority granted to the Secretary under the Clean Air Act as "Federal Land Manager" to the Assistant Secretary for Fish and Wildlife and Parks.

The Assistant Secretary has stated that his/her office will exercise this authority and will handle all matters related to EPA visibility regulations, with the NPS offices providing staff support. In addition, the functions of the "federal official charged with direct responsibility for management of such lands" under Section 165(d)(2) of the Act (new source review provisions) are subject to general policy guidance from the Assistant Secretary's office and to specific review in controversial cases. The AQD can provide guidance in determining when the Assistant Secretary's review is necessary and provide assistance in obtaining the clearance when required.

The Air Quality Division (AQD) has primary responsibility for the NPS air resource management program, including ensuring compliance with Clean Air Act requirements. The major functions of the AQD are:

1. to provide support to the Director, the FLM, and the Secretary of the Interior. This involves such activities as: (1) developing testimony for Congressional hearings on air quality issues which may affect parks; (2) preparing information for use in work with other bureaus, agencies, and departments on policies, regulations, or activities with potential air quality impacts on parks; (3) reviewing, analyzing, and developing policy positions on proposed federal, state, and local regulations, legislation, or management activities that may impact park resources; and (4) reviewing all air quality permit applications for major new and modified industrial facilities whose activities may affect AQRVs in parks.

2. to provide policy and technical information and assistance to the parks and regions. The AQD provides air resource planning and management guidance and support (including project funding) to parks and regions. The AQD's technical staff assists park and regional personnel in their efforts to identify, document, prevent, mitigate, remedy, and interpret damage to park resources from air pollution. In addition, AQD personnel are available to work on specific air resource projects.

3. to plan, design, and implement air quality related research and monitoring. The AQD designs and directs air quality related research and monitoring for the purposes of (1) documenting air quality and AQRV conditions in NPS units; (2) accurately describing the causes and effects of park air pollution problems, and (3) seeking solutions to current problems resulting from air pollution in the parks. The AQD coordinates the collection, analysis, and reporting of monitoring data for criteria air pollutants and visibility.

REFERENCES

Air Quality in the National Parks. July, 1988. Natural Resources Report 88-1, National Park Service, U.S. Department of the Interior, Washington, D.C.

Air Resource Management Manual. 1984. Air Quality Division, National Park Service, U.S. Department of the Interior, Washington, D.C.

Service-wide Air Quality Monitoring Strategy. 1991. Air Quality Division, National Park Service, U.S. Department of the Interior, Washington, D.C.

Visibility Reference Document. April, 1983. National Park Service, U.S. Department of the Interior, Washington, D.C.

AIR QUALITY DESIGNATION - EXHIBIT 1

NPS Areas Designated as Class I

1. Acadia National Park, Maine
2. Arches National Park, Utah
3. Badlands National Park, South Dakota (wilderness portion)
4. Bandelier National Monument, New Mexico (wilderness portion)
5. Big Bend National Park, Texas
6. Black Canyon of the Gunnison National Monument, Colorado (wilderness portion)
7. Bryce Canyon National Park, Utah
8. Canyonlands National Park, Utah
9. Capitol Reef National Park, Utah
10. Carlsbad Caverns National Park, New Mexico
11. Chiricahua National Monument, Arizona (wilderness portion)
12. Crater Lake National Park, Oregon
13. Craters of the Moon National Monument, Idaho (wilderness portion)
14. Denali National Park, Alaska
15. Everglades National Park, Florida
16. Glacier National Park, Montana
17. Grand Canyon National Park, Arizona
18. Grand Teton National Park, Wyoming
19. Great Sand Dunes National Monument, Colorado (wilderness portion)
20. Great Smoky Mountains National Park, North Carolina, Tennessee
21. Guadalupe Mountains National Park, Texas
22. Haleakala National Park, Hawaii
23. Hawaii Volcanoes National Park, Hawaii
24. Isle Royale National Park, Michigan
25. Joshua Tree National Monument, California (wilderness portion)
26. Kings Canyon National Park, California
27. Lassen Volcanic National Park, California
28. Lava Beds National Monument, California (wilderness portion)
29. Mammoth Cave National Park, Kentucky
30. Mesa Verde National Park, Colorado
31. Mount Rainier National Park, Washington
32. North Cascades National Park, Washington
33. Olympic National Park, Washington
34. Petrified Forest National Park, Arizona
35. Pinnacles National Monument, California (wilderness portion)
36. Point Reyes National Seashore, California (wilderness portion)
37. Redwood National Park, California
38. Rocky Mountain National Park, Colorado
39. Saguaro National Monument, Arizona (wilderness portion)
40. Sequoia National Park, California
41. Shenandoah National Park, Virginia

42. Theodore Roosevelt National Park, North Dakota
43. Virgin Islands National Park, Virgin Islands
44. Voyageurs National Park, Minnesota
45. Wind Cave National Park, South Dakota
46. Yellowstone National Park, Wyoming
47. Yosemite National Park, California
48. Zion National Park, Utah

NPS Areas Designated as Class II Floor Areas

1. Alagnah Wild River
2. Amistad National Recreation Area
3. Aniakchak National Monument and Preserve
4. Apostle Islands National Lakeshore
5. Assateague Island National Seashore
6. Bering Land Bridge National Preserve
7. Big Cypress National Preserve
8. Bighorn Canyon National Recreation Area
9. Big South Fork National River and Recreation Area
10. Big Thicket National Preserve
11. Biscayne National Park
12. Canaveral National Seashore
13. Canyon De Chelly National Monument
14. Cape Cod National Seashore
15. Cape Hatteras National Seashore
16. Cape Krusenstern National Monument
17. Cape Lookout National Seashore
18. Channel Islands National Park
19. Colorado National Monument
20. Congaree Swamp National Monument
21. Coulee Dam National Recreation Area
22. Cumberland Island National Seashore
23. Curecanti National Recreation Area
24. Cuyahoga Valley National Recreation Area
25. Death Valley National Monument
26. Delaware Water Gap National Recreation Area
27. Denali National Preserve
28. Dinosaur National Monument
29. El Malpais National Monument
30. Fire Island National Seashore
31. Fort Jefferson National Monument
32. Gates of the Arctic National Park and Preserve
33. Gateway National Recreation Area
34. Gauley River National Recreation Area
35. Glacier Bay National Park and Preserve

36. Glen Canyon National Recreation Area
37. Golden Gate National Recreation Area
38. Great Basin National Park
39. Gulf Islands National Seashore
40. Indiana Dunes National Lakeshore
41. Jean LaFilte National Historical Park and Preserve
42. John Day Fossil Beds National Monument
43. Katmai National Park and Preserve
44. Kenai Fjords National Park
45. Kobuk Valley National Park
46. Lake Chelan National Recreation Area
47. Lake Clark National Park and Preserve
48. Lake Mead National Recreation Area
49. Lake Meredith National Recreation Area
50. New River Gorge National River
51. Noatak National Preserve
52. Organ Pipe Cactus National Monument
53. Padre Island National Seashore
54. Pictured Rocks National Lakeshore
55. Ross Lake National Recreation Area
56. Saint Croix National Scenic Riverway
57. Santa Monica Mountains National Recreation Area
58. Sleeping Bear Dunes National Lakeshore
59. Timucuan Ecological and Historic Preserve
60. Upper Delaware Scenic and Recreational River
61. Whiskeytown National Recreation Area
62. White Sands National Monument
63. Wrangell-St Elias National Park and Preserve
64. Wupatki National Monument
65. Yukon-Charley Rivers National Preserve

All other NPS units are class II areas.

SOURCE: Natural Resource Management Guideline (NPS-77), Chapter 2, Air Resources Management, National Park Service.

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