being developed to address impairment of visibility that is more regional in its character and origins ("regional haze"). This interim policy may be revised to be made consistent with the regional haze rules when they become final.

Please refer to the white paper, "Background on the Role of Fire," for more complete background information. See Section I to obtain a copy.

IV. DESCRIPTION OF POLICY

The EPA's policy regarding wildland and prescribed fires managed for resource benefits is that owners/managers of public, private and Indian wildlands should collaborate with State/tribal air quality managers (air regulators) to achieve their goals of: (1) allowing fire to function in its natural role in the wildlands, and (2) protecting public health and welfare by minimizing smoke impacts. The EPA urges air quality managers to participate in public land use planning activities which involve selecting appropriate resource management treatments, including the use of fire, and to help identify air quality criteria for fire management plans. Air quality managers are urged to help evaluate the potential impacts of alternative resource treatments and assure that air quality concerns (also visibility and regional haze concerns, where appropriate) are adequately addressed in the public land use planning process. They are urged to solicit information from private and Indian wildland owners/managers on plans to use fire for resource management, to encourage them to consider appropriate alternative treatments, and to assist them in evaluating the potential air quality impacts of alternatives to meet particular management objectives.

Wildland owners/managers are urged to: (1) notify air quality managers of plans to significantly increase their future use of fire for resource management, (2) consider the air quality impacts of fires and take appropriate steps to mitigate those impacts, (3) consider appropriate alternative treatments, (4) and participate in the development and implementation of State/tribal SMP's.

The EPA will allow States/tribes flexibility in their approach to regulating fires managed for resource benefits. They are not required to change their existing fire regulations if those regulations adequately protect air quality. However, there are incentives for States/tribes to certify to EPA that they have adopted and are implementing a SMP that includes the basic components identified in this policy. The main incentive is that, as long as fires do not cause or

significantly contribute to daily or annual PM2.5 and PM10 NAAQS violations, States/tribes may allow participation by burners in the basic SMP to be voluntary and the SMP does not have to be adopted into the SIP. Another incentive is the commitment by EPA to use its discretion not to redesignate an area as nonattainment when fires cause or significantly contribute (see section VII.B.) to PM NAAQS violations, if the State/tribe required those fires to be conducted within a basic SMP. Rather, if fires cause or significantly contribute violations, States/tribes will be required to review the adequacy of the SMP, in cooperation with wildland owners/managers, and make appropriate improvements.

If States/tribes do not certify that a basic SMP is being implemented, no special consideration will be given to PM violations attributed to fires managed for resource benefits. Rather, EPA will call for a SIP revision to incorporate a basic SMP and/or will notify the governor of the State or the tribal government that the area should be redesignated as nonattainment. The SMP adopted in response to the SIP/TIP call must require mandatory participation for greater than de minimis fires, and must be adopted into the SIP/TIP so that it is Federally enforceable. Also, the SIP/TIP must meet all other CAA requirements applicable to nonattainment areas.

Fire data requirements for SIP's/TIP's are addressed in section VIII of this policy. Guidance for meeting CAA requirements to show conformity of Federal fire activities with SIP's, to address visibility/regional haze impacts, and to address prevention of significant deterioration of air quality are addressed in section IX.

The following are guiding principles for implementing this policy:

- Air quality and visibility impacts from fires managed for resource benefits should be treated equitably with other source impacts.
- Land and vegetation management practices should be promoted that are best for wildland ecosystems, yet protect public health and avoid visibility impairment.
- States/tribes should foster collaborative relationships among wildland owners/managers, air quality managers and the public to develop and implement SMP's.
- States/tribes will be allowed the flexibility (prior to measuring violations of the $PM_{2.5}$ or PM_{10} NAAQS attributable to fires managed for resource benefits) to decide when a SMP

is needed and how the program will be designed to prevent adverse air quality impacts. This does not preclude wildland owners/managers from including smoke management components in burn plans for fires they conduct in the absence of an applicable State/tribal program.

- All parties (wildland owners/managers, air quality managers and the public) are expected to act in good faith and will be held accountable for implementing their respective parts of fire and SMP's.

V. COLLABORATION AMONG LAND AND AIR QUALITY MANAGERS

Wildland owners/managers and air quality managers can overcome the barriers to achieving their goals of: (1) returning fire to its natural role in the wildlands and (2) protecting air quality and visibility, by working together toward those ends. Wildland owners/managers should notify State/tribal air quality managers if they are planning to significantly increase the use of fire to manage wildland resources. Air quality managers with Federal/State/local public wildlands within their jurisdictions have a responsibility to participate in the public planning processes conducted for the management of those publicly owned lands. To arrive at the best choice of resource treatments and response to fire, it is essential that the air quality impacts of planned land management activities are adequately addressed. Air quality managers, by participating in the public land use planning process, can help select the scope of land uses; help evaluate alternative management tools and help identify when fire is appropriate; and review projected air quality and visibility impacts. Air quality managers should also consult with private wildland owners/managers to determine long-range resource management objectives and help them evaluate the applicability of alternative treatments based on air quality and visibility considerations.

Wildland owners/managers also have a responsibility to participate with the other stakeholders and State/tribal air quality managers in developing rules and SMP's for fires managed for resource benefits. Air quality managers that intend to develop or revise regulations, plans or policies applicable to fires should solicit the early participation of all affected wildland owners/managers in making those revisions.

A. Land and Vegetation Management

Wildlands are managed by Federal, State and local public agencies (referred to in this document as public land management agencies); tribal and BIA authorities; and private land owners. The goals of public land management agencies vary, but are generally to develop, maintain and enhance wildlife habitat; protect endangered plant and animal species; preserve and protect cultural resources, scenic vistas and wilderness; provide for recreation; and to sustain production of natural resources. The goals of private wildland owners/managers may be sustained production of natural resources, preservation of wildlife habitat, improved grazing conditions, etc. The goals of tribal wildland owners/managers are generally similar to public land management agency goals, but may also include aspects of private land owners. Another common goal of all wildland owners/managers is to minimize the potential for catastrophic wildfires that could result from heavy accumulations of vegetative fuels.

1. Alternative Treatments

Wildland owners/managers may have an array of tools, including fire, that can be used to accomplish land use plans, depending on the resource benefits to be achieved. Several factors should be considered when selecting appropriate treatments. Those factors include the costs of treatment, the environmental impacts (e.g., air and water quality, soils, wildlife, etc.), and whether fire must be used to meet management objectives. The best combination of treatments are those that meet management goals with the most favorable environmental impacts at the most reasonable costs.

a. <u>Utilization and mechanical treatments</u>

Mechanical treatments may be appropriate tools when management objectives are to reduce fuel density to reduce a wildfire hazard, or to remove logging waste materials (slash) to prepare a site for replanting or natural regeneration. On-site chipping or crushing of woody material, removal of slash for off-site burning or biomass utilization, whole tree harvesting, and yarding (pulling out) of unmerchantable material may accomplish these goals. Mechanical treatments are normally limited to accessible areas, terrain that is not excessively rough, slopes of 40 percent or less, sites that are not wet, areas not designated as national parks or wilderness, areas not protected for threatened and endangered species and areas without cultural or paleological resources.

b. **Chemical treatments**

When the management objective is to preclude, reduce or remove live vegetation and/or specific plant species from a site, chemical treatments may be appropriate tools. Other potential environmental impacts caused by applying chemicals must also be considered, however.

c. **Fire treatments**

Fire is one of the basic tools relied upon by wildland owners/managers to achieve a myriad of management objectives in fire dependent ecosystems. Most North American plant communities evolved with recurring fire and, therefore, are dependent on recurring fire for maintenance. The natural fire return interval may vary from 1-2 years for prairies, 3-7 years for some long-needle pine species, 30-50 years for species such as California chaparral, and over one hundred years for species such as lodgepole pine and coastal Douglas-fir. When one management objective is to maintain a fire dependent ecosystem the effects of fire cannot be duplicated by other tools. In such cases, fire may be the preferred management tool even when other treatments may be equally effective for meeting other objectives. Fire can also be used to reduce heavy fuel loads and prevent catastrophic wildfires.

When fire is the chosen management tool, a combination of treatment methods may be the best approach to achieving the desired resource benefits with minimum air quality impacts. Combinations of treatments may include mechanically pretreating an area to thin the fuel load prior to the use of fire.

2. Role of Federal Land Managers (FLM's)

The major Federal agencies with land management responsibilities include the USDA FS, the DOI NPS, and FWS, BLM, and BIA. These agencies manage national parks, forests, monuments, wilderness areas, prairie grasslands, sea shores, Indian lands, wildlife refuges, etc. The Department of Defense and Department of Energy also manage millions of acres of Federal land at military bases, training centers and for other purposes.

a. **Federal land use and fire management planning**

Federal land use planning is an open process for setting land use and management goals and objectives. The planning process is designed for public participation, and must comply with NEPA. State/tribal air quality managers are given the opportunity to participate in land use

planning as part of normal intergovernmental consultation procedures. It is important for air quality managers to participate in public land use planning decisions to ensure that air quality concerns are adequately addressed. Through the public participation process, issues are identified and alternatives are discussed regarding methods for implementing land management activities such as trail building, improvement of wildlife habitat, timber harvesting, use of fire, etc. The environmental impacts of these activities are analyzed including, among other things, impacts on cultural resources, wildlife, vegetation, soils, riparian areas, wetlands, water quality, air quality, and visibility. Consideration of the air quality impacts of land management activities is essential to arriving at the best choice of treatments and response to fire.

Two or more levels of land use planning are conducted by FLM's to achieve management goals. First, broad scale and long-range land use plans must be developed for administrative units (e.g., forests, parks, refuges, sanctuaries, etc.). The land use plan identifies the scope of actions and goals for the lands and resources administered, and typically covers a 10 to 15-year period.

In addition to land use plans, there are other shorter term (typically 1-5 years) planning efforts where decisions are made concerning specific activities and programs, including the use of fire to achieve resource benefits. These may include programmatic plans, such as FMP's, or specific project plans.

The FMP's are strategic plans that define how wildland and prescribed fires will be managed to meet land use objectives. The FMP's must contain prescriptive criteria which are measurable and will guide selection of appropriate management actions in response to fires. The criteria can relate to suppression actions or describe when fire can be managed to gain resource benefits. This allows the use of a full range of appropriate management responses to fire, which may include: full suppression of a wildland fire; suppression on part of a wildland fire while allowing another portion of the fire to continue playing a natural ecological role and achieve resource benefits; or the use of prescribed fire.

Project plans are strategic plans to accomplish specific actions and goals established in a land use plan. Project plans may involve decisions regarding trade-offs between using mechanical, chemical and fire treatments. When projects include fires treatments, burn plans are also required. Burn plans are operational plans for managing specific fires. Burn plans prepared by

FLM's should include smoke management components to minimize fire emissions and mitigate air quality impacts.

b. Evaluating environmental impacts

Federal agencies evaluate the environmental impacts of the tools used for resource management on publicly owned lands using NEPA. They generally consider the impacts on, among other things, plant and animal species in the area, aquatic life, cultural resources, soil conditions, riparian areas, wetlands, water quality, air quality and visibility. Such analyses should be undertaken at both the individual project planning level and at the regional planning level if warranted by the extent of similar activities over a large area.

The impacts of resource management activities, particularly fire, on air quality can vary significantly by region. The impacts can be strongly affected by meteorology; existing air quality; the size, timing and duration of the activity; and other activities occurring in the same airshed at the same time. State/tribal air quality managers can provide technical assistance with evaluating potential air quality impacts, thus aiding FLM's in their selection of tools and evaluation of the environmental impacts.

Air quality and visibility impact evaluations of fire activities on Federal lands should:

- include recent historic (e.g. 10 years) and projected (life of the plan) annual or seasonal emissions from wildland and prescribed fires. Emission projections should be based on estimates provided by wildland owners/managers of acres burned, pre-burn fuel loading by vegetation type and consumption,
- be related to analyses of cumulative impacts of fires on regional and subregional air quality, when possible.
- identify applicable regulations, plans or policies (e.g. burn plans, authorization to burn, conformity, etc.),
- identify sensitive receptors,
- include description of planned measures to reduce smoke impacts,
- identify the potential for smoke intrusions into sensitive areas, and model air quality and visibility impacts, when possible,
- describe ambient air monitoring plans, when appropriate.

3. Role of State and Other Public Land Managers

State and local land management agencies manage publicly owned lands similar to Federal lands. These agencies differ from agency to agency, but can include forestry, conservation, park service, or fish and game agencies, as well as State or local fire protection agencies. Many agencies prepare long-range land use plans as well as project specific plans. The FMP's, similar to those prepared by Federal agencies, may also be prepared. Public land management agencies generally assess the environmental impacts of proposed projects, such as fires managed for resource benefits, although the impacts evaluated vary from agency to agency.

Some State/local wildland managers also have responsibilities for private lands. Such responsibilities may include using fires and other fuels reduction programs aimed at reducing the potential for wildfires in the wildland/urban interface.

Land use planning for State and locally owned wildlands, although somewhat different from the Federal process, also requires preparation of written documents that are subject to public review. State/local wildland managers should notify air quality managers of long-range plans to use fire for resource management. They should consider alternative management tools and evaluate the potential air quality impacts of fires. State/local wildland managers should also participate in the development of State SMP's.

4. Role of Private Land Managers

Private wildland owners/managers may or may not prepare written land use or project plans depending on the organization and the size of the property. States/tribes may or may not require written plans, but activities on privately owned lands must meet all applicable State and Federal environmental requirements. State requirements include any specific SIP requirements applicable to private land owners which are designed to ensure that the State complies with CAA requirements. Private land owners/managers should provide information to the State on long-range plans to use fire for resource management and should participate in the development of State SMP's.

5. Role of Indian Land Managers

Land use plans for Indian wildlands are not subject to review by the general public and are not subject to State regulations. Activities on Indian lands must meet the requirements of the CAA and the TIP, however, if one has been adopted. It is important that Indian wildland managers consider alternative vegetation management tools and consider the air quality impacts of the management practices chosen both on and off of Indian lands. They are encouraged to collaborate with other near-by wildland owners/managers and air quality managers on regional SMP's to assure that fires managed for resource benefits will not cause adverse air quality impacts at sensitive receptors in the region.

6. Role of Air Quality Managers

State air quality managers which have publicly owned wildlands within their jurisdiction, have a responsibility to participate in the public planning process conducted for those lands to be assured that air quality concerns are adequately addressed and they can meet the goals of their SIP's. They can participate in selecting the scope of land uses, identify air quality issues, and participate in evaluating and selecting alternative resource management tools. They can also participate in identifying basic air quality criteria for fire prescriptions. To accomplish this, air quality agencies should heed solicitations of public participation from land managers and contact public land management agencies within their jurisdiction

State/tribal air quality managers should also encourage private and Indian wildland owners/managers to consider alternative treatments and help them evaluate the potential air quality impacts of alternatives to meet particular management objectives.

B. <u>Air Quality Management</u>

State/tribal air quality managers are responsible for adopting plans and rules sufficient to attain and maintain national and State air quality standards, prevent significant deterioration of air quality, remedy existing visibility impairment and prevent future impairment in mandatory Class I Federal areas caused by manmade sources of pollution. This is accomplished mainly by developing SIP's and TIP's. The SIP's/TIP's include all programs and rules required by the CAA to meet and assure maintenance of Federal standards. The SIP's/TIP's are frequently amended as State/tribal rules are revised and new rules are adopted to meet changing CAA requirements. The

EPA has the authority to adopt and implement Federal Implementation Plans (FIP's) to address air quality protection in areas where States or tribes do not adopt plans.

1. Role of State/Local Air Quality Managers

The SIP's are developed in an extensive public process involving workshops and public hearings in which all stakeholders are invited to participate in developing the technical components of the plans including: (1) emission inventories; (2) modeling analyses; (3) attainment demonstrations; (4) transportation and general conformity emission budgets; (5) analyses of air quality data; and (6) control strategy development. State/local air quality managers should solicit information on the planned use of fire for resource management from all wildland owners/managers, just as they obtain information on other emission sources within their jurisdiction, when fires are expected to significantly impact air quality. Air quality managers should also work with adjacent States to mitigate potential impacts from interstate transport of smoke.

2. Role of Tribal Air Quality Managers

Eligible tribes may develop TIP's to administer CAA requirements on Indian lands. The CAA recognizes tribal governments as the most appropriate parties to regulate the environment on Indian lands and grants EPA the authority to approve tribal programs. The EPA has developed strategies for Federally implementing CAA requirements if tribes do not adopt TIP's.

Tribal air quality managers should solicit information on the planned use of fire for resource management within their jurisdiction and the potential for air quality impacts on or from adjacent jurisdictions. They are encouraged to collaborate with other near-by air quality managers to develop regional SMP's which assure that fire activities will not cause adverse air quality impacts at sensitive receptors in the region.

3. Role of Public Land Managers

Public land managers have the responsibility to participate with the other stakeholders and air quality managers in developing SIP's. Public land managers, as experts in what is needed to meet land use and other environmental objectives, need to provide information on the areas that are to be treated with fire, air pollutant emissions estimates, and assistance in developing programs to track emissions, monitor air quality and visibility, and mitigate air quality impacts.

The FLM's of mandatory Class I Federal areas must participate in the development of SIP's for regional haze and visibility impairment. Congress gave FLM's a key consulting role in the administration of visibility protection and "affirmative responsibility to protect air quality related values (including visibility) in mandatory Class I Federal areas." [See section 165 of the CAA.]

VI. SMOKE MANAGEMENT PROGRAMS (SMP's)

The SMP's establish a basic framework of procedures and requirements for managing smoke from fires managed for resource benefits and are typically developed by States/tribes with cooperation and participation by wildland owners/managers. The purposes of SMP's are to mitigate the nuisance and public safety hazards (e.g., on roadways and at airports) posed by smoke intrusions into populated areas; to prevent deterioration of air quality and NAAQS violations; and to address visibility impacts in mandatory Class I Federal areas. Some strong indications that an area needs a SMP are: (1) citizens increasingly complain of smoke intrusions; (2) the trend of monitored air quality values is increasing (approaching the daily or annual NAAQS for $PM_{2.5}$ or PM_{10}) because of significant contributions from fires managed for resource benefits; (3) fires cause or significantly contribute to monitored air quality that is already greater than 85 percent of the daily or annual NAAQS for $PM_{2.5}$ or PM_{10}; or (4) fires in the area significantly contribute to visibility impairment in mandatory Class I Federal areas.

If a State/tribe determines that a SMP is needed, they can adopt any type of program they believe will prevent NAAQS violations and address visibility impairment. For example, general fire regulations may establish basic parameters, such as wind speed, direction, location and distance to sensitive receptors, etc., within which fires can be ignited or naturally ignited fire can be allowed to continue to burn. States/tribes may allow wildland owners/managers to voluntarily notify them of fire plans or may require prior authorization. They may also exempt de minimis fires (fires that will cover fewer than X acres or consume less than Y tons of fuel, as established by the State/tribe) from meeting the regulations. Such regulations leave much discretion to wildland owners/managers as to when to ignite fires, and what management strategy to follow with naturally ignited fires. States/tribes may exercise enforcement authorities when wildland owners/managers are found to have ignited the fire outside of the parameters of the rule, or not to

have appropriately responded to air quality impacts caused by naturally ignited fires.

General fire regulations may be adequate for areas where fires managed for resource benefits rarely cause or contribute to air quality problems. However, when plans to use fire on a large scale could cause significant air quality impacts, or several wildland owners/managers within an airshed are expected to use fires concurrently, a more structured SMP requiring cooperation and coordination of fire activities may be required to minimize emissions and mitigate the air quality impacts.

State/tribal air quality managers, public wildland managers, private and Indian wildland owners/managers, and the general public should collaborate in the development and implementation of State/tribal SMP's. The State/tribal air quality manager must certify in a letter to the Administrator of EPA that at least a basic program has been adopted and implemented in order to receive special consideration under this policy of air quality data resulting from fire impacts, as explained in section VII. The SMP does not have to be incorporated into the SIP/TIP or be Federally enforceable, however. The following describes the basic components (A - F) of a certifiable SMP. There is considerable latitude within the components for individual State/tribal preferences.

A. <u>Authorization to Burn</u>

The SMP should include a process for authorizing or granting approval to manage fires for resource benefits within a region, State, or on Indian lands and identify a central authority responsible for implementing the program. The process may be as simple as receiving applications for permission to burn and granting approval via telephone or facsimile. The SMP central authority must review fire applications, consult with the applicants, if necessary, and promptly make burn/no burn decisions. When authorizing a fire, the authority should consider all open burning activities (land clearing and construction wastes, agricultural wastes, etc.) allowed within an airshed. The central authority should strive to treat public and private wildland owners/managers equitably when authorizing fires. Neighboring States/tribes are encouraged to create partnerships to coordinate fire projects when inter-jurisdictional impacts are expected, so as to meet air quality and fire management objectives. Fire emissions should be minimized and the air quality impacts should be mitigated regardless of political boundaries.

States/tribes may or may not require written burn plans for de minimis fires, especially if the central authority records pertinent fire information. However, written burn plans are strongly recommended for greater than de minimis fires. Burn plans should be prepared by the wildland owners/managers. The central authority should assist private land owners that cannot prepare their own plans. When written burn plans are required, especially for fires on publicly owned lands, they should include such information as the:

- location and description of the area to be burned,
- personnel responsible for managing the fire,
- type of vegetation to be burned,
- area (acres) to be burned,
- amount of fuel to be consumed (tons/acre),
- fire prescription including smoke management components (discussed below),
- criteria the fire manager will use for making burn/no burn decisions,
- safety and contingency plans addressing smoke intrusions.

The central authority's criteria for authorizing fires should be based on existing air quality and the ability of the airshed to disperse emissions (e.g., meteorological conditions) from all burning activities on the day of the burn. For fires lasting longer than one day, predicted meteorological conditions for several days should be considered to avoid aggravating existing problems. Persons receiving authorization to ignite fires must comply with all applicable local, State, tribal and Federal requirements. Persons responsible for managing greater than de minimis fires should be adequately trained in fire and smoke management. Fire managers should be required to follow the authorized burn plan or explain why it was necessary to deviate from the plan.

B. <u>Minimizing Air Pollutant Emissions</u>

The SMP should encourage wildland owners/managers to consider the alternative treatments discussed in section V.A.1., above. Public land managers typically consider and evaluate alternative treatments that may achieve management objectives, their costs and the environmental impacts of each method. States/tribes should assist private land owners to also identify economically feasible treatments that will meet their objectives with minimum air pollutant

emissions. When the use of fire is selected as the best means to accomplish management goals, there are several ways to reduce emissions from a single fire. The approaches fall into four categories and their applicability varies by fuel type, (1) minimize the area burned, (2) reduce the fuel loading in the area to be burned, (3) reduce the amount of fuel consumed by the fire, (4) minimize emissions per ton of fuel consumed. These emission reduction techniques rely almost exclusively on reducing the amount of fuel consumed by a particular fire. The excluded fuels could be consumed by a subsequent fire, however, unless they are removed from the area or biologically decompose. Also, generally these techniques cannot be used to reduce emissions from naturally ignited fires.

Emission reduction techniques are discussed further in the white paper "What Wildland Fire Conditions Minimize Emissions and Hazardous Air Pollutants and Can Land Management Goals Still be Met?" See Section I to obtain a copy.

C. Smoke Management Components of Burn Plans

When burn plans are required they should include the following smoke management components.

1. Actions to Minimize Fire Emissions

The burn plan should document the steps taken prior to the burn and actions that will be taken during and after the burn to reduce air pollutant emissions. This includes measures that will be taken to reduce residual smoke, such as rapid and complete mop-ups, mop-ups of certain fuels, etc.

2. Evaluate Smoke Dispersion

The central authority should evaluate dispersion conditions prior to authorizing fires. Burn plans should evaluate potential smoke impacts at sensitive receptors and time fires to minimize exposure of sensitive populations and avoid visibility impacts in mandatory Class I Federal areas. The plan should identify the distance and direction from the burn site to local sensitive receptor areas and to regional/interstate areas where appropriate. Fire prescriptions submitted prior to the day of the fire must specify minimum requirements for the atmospheric capacity for smoke dispersal such as minimum surface and upper level wind speeds, desired wind direction, minimum mixing height, and dispersion index. It may be necessary to purchase

meteorological services from private companies if they are not available from the National Weather Service.

3. Public Notification and Exposure Reduction Procedures

The plan should identify actions that will be taken to notify populations and authorities (e.g., local air quality managers) at sensitive receptors, including those in adjacent jurisdictions, prior to the fire. The plan should also identify contingency actions that will be taken during a fire to reduce the exposure of people at sensitive receptors if smoke intrusions occur. The central authority should perform these functions, if needed, for some private land owners. Appropriate short-term (less than 24-hour) contingency actions may, among other things, include:

- Notifying the affected public (especially sensitive populations) of elevated pollutant concentrations,
- Suggesting actions to be taken by sensitive persons to minimize their exposure (e.g., remain indoors, avoid vigorous activity, avoid exposure to tobacco smoke and other respiratory irritants),
- Providing clean-air facilities for sensitive persons,
- Halting ignitions of any new open burning that could impact the same area,
- Analyzing the fire situation and identifying alternative management responses upon becoming aware that a fire is out of air quality prescription with regard to the air quality criteria, (Federal land management agencies perform a Wildland Fire Situation Analysis)[3],
- Consulting State/tribal air quality managers regarding appropriate short-term fire management response to abate verified impacts,
- Implementing management responses that will mitigate the adverse impacts to public health,

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[3] A Wildland Fire Situation Analysis (WFSA) is a decision-making process that evaluates alternative fire management strategies considering fire fighter and public safety, risk to property and resources, fire fighting resources available, land management objectives, and environmental, social, economic and political constraints. The environmental and social constraints considered include, among other things, how air quality and/or visibility will be affected at sensitive receptors by each alternative fire management strategy. The positive, neutral or negative effects of each alternative on the criteria above are weighed to select the appropriate management response to the fire. Therefore, while mitigating air quality and visibility impacts must be considered by the FLM when managing a fire that is not within a prescription, they are just two of several important criteria evaluated.

- Reporting the steps taken to mitigate adverse impacts to the public and appropriate State/tribal agencies after they have been completed.

4. Air Quality Monitoring

The plan should identify how the effects of the fire on air quality at sensitive receptors, and visibility in mandatory Class I Federal areas will be monitored. The extent of the monitoring plan should match the size of the fire. For small fires, visual monitoring of the direction of the smoke plume and monitoring nuisance complaints by the public may be sufficient. Other monitoring techniques include posting personnel on vulnerable roadways to look for visibility impairment and initiate safety measures for motorists; posting personnel at other sensitive receptors to look for smoke intrusions; using aircraft to track the progress of smoke plumes; and continued tracking of meteorological conditions during the fire. For large fires expected to last more than one day, locating real-time PM monitors at sensitive receptors may be warranted to facilitate timely response to smoke impacts. If needed, the central authority may perform these monitoring functions for some private land owners.

For additional information on monitoring wildland fire impacts see the white paper "Air Monitoring for Wildland Fire Operations." See Section I to obtain a copy.

D. Public Education and Awareness

The SMP should establish criteria for issuing health advisories when necessary, and procedures for notifying potentially affected populations, including those in adjacent jurisdictions, of planned fires. A program should be implemented to explain the use and importance of fire for ecosystem management, the implications to public health and safety, and the goals of the SMP. Wildland and air quality managers should work with the press to announce pre-fire health advisories, and post-fire results including such things as the management objectives met; smoke intrusions observed, and/or successful minimization of air quality impacts.

E. Surveillance and Enforcement

The SMP should include procedures to ensure that wildland owners/managers will comply with the requirements of the SMP. Fire managers must follow the burn plan, including the fire prescription and smoke management components, or explain any deviations from the plan. Memorandums of understanding may be used to specify the responsibilities of each State/tribal

agency in implementing the SMP.

F. Program Evaluation

The SMP should provide for periodic review by all stakeholders of its effectiveness and revision of the program as necessary. The effectiveness review should be based on observations such as reports of smoke intrusions, nuisance complaints, and monitored air quality impacts. Post-burn reports should be required for fires that exceed their air quality prescription and/or fires that cause smoke impacts at sensitive receptors. Post-burn reports for escaped fires should describe the incident, describe the contingency plan implemented, and provide recommendations to prevent future smoke related problems.

State/tribal SMP's should include procedures for re-evaluating the effectiveness of rules and regulations every 3 to 5 years. Such procedures should involve all the original participants (e.g., wildland owners/managers, air quality managers, the public, etc.) and should review the:

- Acres of fires managed for resource benefits planned for the next 5 years,
- Need to expand the scope of the program to include authorization of other open burning,
- Need for changes in the SMP.

G. Optional Air Quality Protection

The following components are not required in a basic SMP, but States/tribes may adopt more stringent SMP's or include additional smoke management requirements. For example, "special protection zones" may be established to provide better protection against smoke impacts. Special protection zones could be buffers (e.g., 10 - 25 miles) around wildland/urban interface areas, nonattainment areas, or mandatory Class I Federal areas. Additional requirements for burns within a special protection zone may include no burning if high pollution levels already exist in the area. Also, special protections may only be required for burns that will last overnight, for multi-day burns or burns during specific seasons.

States/tribes may also establish "performance standards" that would trigger implementation of additional smoke management requirements if exceeded in an area. The performance standards could set limits on the frequency and intensity (e.g., hours/day, PM concentration, visibility impairment) of smoke intrusions. Implementation of performance

standards may require real-time monitoring of air quality. Additional requirements for fires after the performance standards are exceeded may include better dispersion parameters (e.g., increased wind speed, mixing height, dispersion index, etc.).

VII. ACCOUNTABILITY

A. Role of State/Tribal Air Quality Managers

High PM concentrations attributable to fires managed for resource benefits are valid air quality data that can be used to determine the attainment status of the area represented by the data for both the daily and annual NAAQS. State/tribal air quality managers are responsible for monitoring citizen complaints and air quality trends attributable to fires to determine when a SMP is needed to minimize emissions and mitigate air quality impacts. Air quality managers should initiate the collaborative process needed to develop and adopt regulations for a SMP. If the State/tribal air quality manager certifies in a letter to the Administrator of EPA that at least a basic program (described in section VI) has been adopted and implemented, special consideration will be given under this policy to air quality data resulting from fires managed for resource benefits.

1. Wildfires

High PM concentrations attributable to wildfires (unwanted wildland fires) can be treated as due to a natural event under EPA's Natural Events Policy. The Natural Events Policy provides that when areas violate the PM_{10} NAAQS due to a natural event, EPA will: (1) exercise its discretion, under section 107(d)(3) of the CAA, not to redesignate areas as nonattainment if the State develops and implements a plan to respond to the health impacts of natural events; and, (2) redesignate nonattainment areas as attainment by applying appendix K, on a case-by-case basis, to discount [ambient air quality] data in circumstances where an area would attain but for exceedances that result from uncontrollable natural events. The elements of a State/tribal action plan to respond to the health impacts of natural events are described in the Natural Events policy statement. The EPA plans to revise the Natural Events Policy to also cover $PM_{2.5}$ NAAQS violations.

2. Fires Managed for Resource Benefits

High PM concentrations attributable to fires managed for resource benefits will be given special consideration under this policy, as described in section VII.B., if the State/tribe has

certified to EPA that it is implementing a basic SMP. States/tribes should flag monitored values influenced by fires when submitting the data to EPA's Atmospheric Information Retrieval System. They must also document the basis for flagging the data. Supporting information could include the location of fires relative to the monitor, meteorological data such as wind speed and direction, filter analyses indicating heavy carbon deposits, the sample date (collected during the fire season), and the absence of other carbon sources during that period, among other things. The documentation should address the possible influence of other carbon sources such as wood-fired boilers, residential wood combustion and wildfires. The type and amount of documentation should be sufficient to demonstrate that fires managed for resource benefits caused flagged values to be above the level of the annual NAAQS. The documentation should be made available to the public for review. [For example, newspaper announcements, periodic air quality reports, distribution at public meetings.]

When smoke intrusions cause high PM concentrations, air quality managers have two goals: (1) to reduce immediate impacts on public health, and (2) to take appropriate steps to mitigate future impacts. To meet these goals, air quality managers must contact the wildland owner/manager responsible for the fire(s) to determine the cause of the impacts. The air quality manager should verify that contingency actions to reduce exposure are being implemented, and determine whether, (i) the fire was authorized, (ii) a burn plan (including the smoke management components) was followed, (iii) the prescription failed and why.

If requirements of the SMP were not met, the State/tribe can exercise various enforcement authorities to address the problem. If the fire manager complied with the SMP, the adequacy of the requirements should be reviewed. If air quality data are frequently flagged as resulting from failure of the smoke management components of the burn plan, EPA will call on the State/tribe to work with wildland owners/managers to improve future burn plans and the SMP. When a fire managed for resource benefits breaks out of its fire prescription, and cannot be returned to the prescription, the fire manager will treat it as a wildfire for the purposes of suppression. However, any resulting high PM concentrations must continue to be addressed under this policy, and the data can not be treated as due to a wildfire natural event.

B. <u>Role of the Environmental Protection Agency</u>

1. Impacts with a SMP

If fires managed for resource benefits cause or significantly contribute to violations (see definition) of the daily or annual $PM_{2.5}$ or PM_{10} NAAQS, the State/tribe must submit the following documentation to EPA to avoid a SIP/TIP call or redesignation of the area to nonattainment:

- Evidence supporting the finding that flagged air quality values were due to fires managed for resource benefits,
- Evidence that the fires were subject to a certified State/tribal SMP.

The State/tribe may consider that such fires caused or significantly contributed to violations of the daily NAAQS if 25 percent of all the PM concentrations that are above the level of the daily NAAQS, have been flagged as being due to fire impacts.

The State/tribe may consider that such fires caused or significantly contributed to violations of the annual NAAQS if the sum of the measured concentrations for all days flagged as due to fires, divided by the total number of sample days (fire days plus non-fire days) is greater than or equal to 25 percent of the annual NAAQS (i.e., 4 $\mu g/m^3$ for $PM_{2.5}$ or 12 $\mu g/m^3$ for PM_{10}).

If the evidence is convincing, EPA will exercise its discretion under section 107(d)(3) not to redesignate the area as nonattainment. Rather, following the first NAAQS violation based on 3 calendar years of PM air quality data, EPA will call on the State/tribe to review the effectiveness of the SMP in collaboration with wildland owners/managers and make appropriate improvements to mitigate future air quality impacts. The same procedure will be followed if a second NAAQS violation occurs the following year. If fires cause or significantly contribute to a third consecutive NAAQS violation, EPA will call for the SMP to be made part of the SIP/TIP and be Federally enforceable.[4] If the area was designated nonattainment previously, EPA will also call on the State/tribe to review the effectiveness of the SMP and make appropriate improvements.

2. Impacts Without a SMP

If a certified SMP has not been implemented, EPA will not give special consideration to the high PM concentrations attributed to fires managed for resource benefits that cause or

[4]For example, the first violation of the PM_{10} NAAQS may be determined using air quality data for calendar years 1997-1999. Subsequently, 1998-2000 data for the same area could show a second violation, and data for 1999-2001 could identify a third violation for the area.