MEMORANDUM OF UNDERSTANDING

among the
Georgia Department of Natural Resources
Environmental Protection Division,
Georgia Department of Natural Resources
Wildlife Resources Division
and the
Georgia Forestry Commission

This agreement made and entered into the 11 of July 2008, by and among the Georgia Department of Natural Resources Environmental Protection Division (hereinafter referred to as EPD) and Georgia Department of Natural Resources Wildlife Resources Division (hereinafter referred to as WRD) and the Georgia Forestry Commission (hereinafter referred to as GFC).

Whereas, EPD, WRD, and GFC, recognize the critical importance of prescribed fire for resource management and the resulting benefits to forestry, wildlife management, and agriculture; and

Whereas, EPD, WRD, and GFC, recognize the importance of minimizing the public health and environmental impacts of smoke intrusion into populated areas from prescribed fires; and

Whereas, EPD, WRD, and GFC, in cooperation with federal and private partners, have developed a "Basic Smoke Management Plan, dated April 16, 2008" (Exhibit A)

Now, therefore, in consideration of the mutual benefits to each party hereto, the parties agree to implement the "Basic Smoke Management Plan, dated April 16, 2008". This Agreement shall become effective as soon as signed by all parties. Any party has a right to terminate this agreement upon six (6) months notice.

Director, Environmental Protection Division

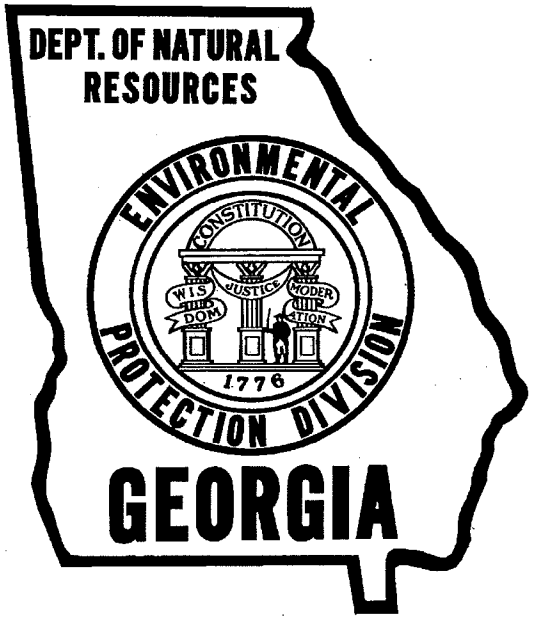
Director, Wildlife Resources Division

Interim Director, Georgia Forestry Commission

Attachment: Exhibit A

BASIC SMOKE MANAGEMENT PLAN

April 16, 2008



Prepared by:

Georgia Department of Natural Resources
Environmental Protection Division
Air Protection Branch

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INTRODUCTION

This Smoke Management Plan (SMP) details Georgia's basic framework of procedures and requirements for managing smoke from prescribed fires. The Georgia Department of Natural Resources and the Georgia Forestry Commission developed this plan with cooperation from Federal military installations located in Georgia, Federal land managers associated with the United States Fish and Wildlife Service, the United States Forest Service, the National Park Service, and groups and associations representing environmental interests or private individuals in Georgia. "The Interim Air Quality Policy on Wildland and Prescribed Fires"[1] and the draft Environmental Protection Agency (EPA) guidance document, "Elements of a Smoke Management Program,"[2] were used to structure the elements of this SMP. The Interim Policy addresses how best to achieve national clean air goals while improving the quality of wildland ecosystems through the increased use of prescribed fire. The Georgia Department of Natural Resources (DNR) and the Georgia Forestry Commission (GFC) are cooperatively responsible for administering this SMP.

The purposes of this SMP are to implement EPA's policy: to minimize the public health and environmental impacts of smoke intrusion into populated areas from fires that are managed to benefit resources or the environment; to avoid significant deterioration of air quality and potential National Ambient Air Quality Standards (NAAQS) violations; and to avoid visibility impacts in Class I areas while providing the citizens of the State of Georgia with healthy air and ecosystems. Additionally, for instances when emissions from a prescribed fire may qualify as an exceptional event, the EPA has stated that a state must demonstrate that a certified SMP was in place at the time of the event, or the state must ensure that the burner employs basic smoke management practices. Implementation of this SMP will, therefore, also facilitate the flagging and other treatment of ambient monitoring data under the Exceptional Events Rule.[3]

Georgia's economy is heavily supported by agriculture and forestry. Both of these key industries utilize prescribed burning to cultivate products needed by the nation and the world. In addition to managing forests and agricultural resources, prescribed burning helps protect lives and property by reducing accumulations of forest fuels and sustains and recovers imperiled species and ecosystems.

[1] U.S. PEA, April 23, 1998
[2] Draft three, U.S. EPA, December 31, 1997
[3] 40 CFR 50.14 and 51.930

Many of Georgia's forests are managed for the ecosystem services they provide to people. Prescribed burning promotes healthy forests which in turn provide clean air, clean water, and conserve soil as well as provide recreational opportunities for Georgia's citizens and visitors. Prescribed burning is necessary to maintain healthy ecosystems and in many cases to meet requirements of the Federal Endangered Species Act. For example, the red cockaded woodpecker is Federally endangered, and Federal property managers must use prescribed fire to enhance its recovery. Prescribed fire is an important tool to maintain habitat for popular and economically important game species, such as the northern bobwhite, wild turkey, and white-tailed deer. Many native animals and plants are dependent on habitats maintained by fire. Fire plays a vital role in statewide wildlife management goals and has been recognized as one of the highest priority conservation actions in Georgia's State Wildlife Action Plan.

I. AUTORIZATION FOR PRESCRIBED BURNING

The Georgia General Assembly recognizes that the forestlands and resources of the state are natural resources of great economic value to the citizens of the state and that prescribed burning is a resource protection and land management tool which benefits the safety of the public, Georgia's forest resources, the environment and the economy of the state. The Assembly enacted the *Georgia Prescribed Burning Act*[4] to authorize and promote the continued use of prescribed burning for community protection and for silvicultural, environmental, and wildlife purposes. The legislature understood that, as the State's population continues to grow, concerns about liability and smoke nuisance complaints could cause prescribed burn practitioners to limit burn activity and reduce the benefits to the State. The *Prescribed Burning Act* tasks GFC with training prescribed burn practitioners, promoting prescribed burning with the public, and protecting prescribed burning from restriction by local ordinances.

Prescribed burning is also regulated in Georgia under the *Georgia Forest Fire Protection Act.*[5] Burn permits are required from GFC for all prescribed fires except agricultural burning and leaf pile burning. According to the *Georgia Forest Fire Protection Act*, all forest fire protection work is under the direction of GFC. The Act gives GFC the authority to go on any land for the purpose of preventing, controlling, or suppressing any uncontrolled fire. An aggressive State wildfire suppression policy has contributed substantially to protecting air quality in Georgia.

Prescribed burning helps achieve many desired resource objectives and can be used to minimize the emissions and adverse impacts of smoke on public health and the environment. The *Georgia Air Quality Act*[6] is designed to preserve, protect, and improve air quality, to control emissions in order to prevent the significant deterioration of air quality, and to attain and maintain ambient air quality standards. This Act authorizes the Georgia Environmental Protection Division (EPD) to issue rules regarding air quality, including the authorization to regulate prescribed burning when subject to the Federal Clean Air Act. Air pollutants of concern from prescribed fire include emissions of precursors for ozone and primary and precursor emissions of particulate matter. Georgia EPD's open burning regulations[7] prohibit all open burning in the State with exceptions, including authorized prescribed burning. Additional restrictions apply to counties that are currently designated as non-attainment areas for the 8-hour Ozone NAAQS or for counties that are found to contribute to the non-attainment status of designated counties. The rule also places restrictions on counties with a population exceeding 65,000. Furthermore, prescribed burning is banned on a seasonal or episodic (depending upon the county) basis during the summer ozone season in multi-county areas in and around Atlanta, Macon, Augusta, and Georgia counties near Chattanooga, Tennessee.

[4] Ga. Code Ann. 12-6-145 – 12-6-149
[5] Ga. Code Ann. 12-6-80 - 12-6-93
[6] Ga. Code Ann. 12-9-1 – 12-9-25
[7] Rules for Air Quality Control, 391-3-1-.02(5), "Open Burning"

A. PERMITTING

The *Georgia Forest Fire Protection Act* requires prescribed burn practitioners to obtain a permit from GFC before initiating a fire. The size, date, type of burn, county location, weather, air quality conditions, and other relevant information are used as criteria to determine if a permit shall be issued. Permits are issued by forest rangers that are trained in fire, weather, and smoke management. According to GFC procedures, all burn projects of one acre or more are screened to determine if air sheds or smoke-sensitive populations are threatened. Permits are issued or denied based on smoke management and fire danger. In order for permits to be issued, all the requirements of Georgia EPD's *Rules for Air Quality Control* concerning open burning and GFC's guidelines must be met. Areas specified by Georgia EPD as especially susceptible to violations of air quality standards will be given special attention to avoid issuance of permits during measured or expected high air pollution periods. Such attention will include a regional review of the previous and current days' ambient conditions for ozone and particulate matter in relation to NAAQS. Although agricultural burning does not require a permit, notification of GFC is required.

GFC has considerable investment in fire weather/smoke management forecasting, training, public relations, and fire permitting. A dedicated fire weather meteorologist provides weather forecasting for 17 geographical locations within the State. Spot weather forecasting is available at GFC's website www.gatrees.org for anywhere in Georgia. Permits and smoke management are administered from 140 locations.

The following are examples of some of the forecasted meteorological parameters used by the fire weather meteorologist for smoke management:

- Mixing Height (MH) - the thickness of the lower layer of the atmosphere where "mixing" occurs.
- Transport Wind Speed (TWS) - the average of all wind speeds between the surface and the mixing height.
- Fog Potential - estimation of the potential for natural fog. It is a function of cloud cover, probability of precipitation, relative humidity, and wind speed.
- Plume Trajectory - the direction that a smoke plume is expected to travel.
- Turner Stability and Atmospheric Tendency - a measure of atmospheric stability determined from opaque cloud cover, cloud ceiling height, surface wind speed and solar elevation angle.
- Smoke Dispersion Index (DI) - a measure of the atmosphere's "diluting power." It is a function of the mixing height, transport wind speed and atmospheric stability class.
- Low Visibility Occurrence Risk Index (LVORI) - an index for probability of low visibility that is dependent upon relative humidity and the smoke dispersion index.

This and other helpful information can be obtained at the GFC website www.gatrees.org.

B. TRAINING REQUIREMENTS

All appropriate GFC personnel are trained in smoke management planning, fire weather forecasting, and determination of smoke sensitive areas. Smoke management indices are provided on the GFC website www.gatrees.org twice daily, seven days per week, and a meteorologist is available for consultation on weekdays. Burn authorizations are plotted on a local map by GFC to identify specific smoke-sensitive areas within the impact area of the planned burn.

GFC's Georgia Prescribed Fire Manager Certification program (authorized by the *Georgia Prescribed Burning Act* and funded by the *Georgia Forest Fire Protection Act*) includes a module on smoke management. Publications including the *Guide for Prescribed Fire in Southern Forests*[8] provide smoke management guidance for individual projects.

C. INTER-AGENCY COORDINATION

The Georgia Department of Natural Resources' Environmental Protection and Wildlife Resource Divisions work directly with GFC to regulate and monitor outdoor burning in the State. The Department of Transportation and the Department of Public Safety work with GFC to monitor smoke on Georgia's highways. Both the EPD and GFC actively participate in "Visibility Improvement for State and Tribal Association" in the Southeast regional planning organization to develop plans for improving visibility in Class I areas in Georgia and nearby states.

Coordination also occurs among the EPD, GFC and Federal land management agencies in the State. Although State laws requiring a permit from GFC for prescribed burning generally do not apply to Federal agencies, Federal land managers have policies and management practices in place to conduct prescribed burning in a manner to benefit natural resources while minimizing air pollution. Lands located in Georgia that are managed by the USDA Forest Service and Department of Interior must be managed by policies that ensure compliance with GFC permit requirements. The Department of Defense (DOD) installations in Georgia comply with other Federal land and ecosystem management requirements that address prescribed burning and air pollution.

[8] United States Department of Agriculture, Forest Service Southern Region, February 1989; Technical Publication R8-TP 11

II. SMOKE MANAGEMENT

The goal of smoke management is to reduce the exposure of Georgia's citizens to air pollution, impaired visibility, and nuisance caused by prescribed fire smoke. Use of the basic smoke management guidelines presented in this document will reduce the impact of smoke from prescribed fires on air quality and visibility. The basic principles of smoke management include identification and avoidance of smoke sensitve areas, minimizing emissions, selection of appropriate meteorological conditions to maximize smoke dispersion, proper evaluation of weather conditions prior to burning, public notification, and air quality monitoring. These tools will also foster understanding between prescribed burn practitioners and adjoining communities of planned burning activity.

The following are essential smoke management components that should be considered when planning prescribed burns.

A. SMOKE MITIGATION

Smoke mitigation comprises those actions that are utilized to minimize fire emissions. The effects of smoke from prescribed fire can be mitigated, when necessary, by planning burns to avoid smoke sensitive areas, providing for good smoke dispersion, and utilizing practices that manage the quantity of emissions that are released.

1. Avoid Smoke Sensitive Areas

Due caution should be practiced whenever wind will carry smoke to smoke-sensitive areas. Wind direction should be considered to minimize smoke intrusion of populated areas, public roads, schools, airports, etc. The authorizing agent and the prescribed burn practitioner should consider location of smoke-sensitive areas prior to authorizing and initiating a prescribed fire.

2. Select Good Smoke Dispersion Conditions

The *Guide for Prescribed Fire in Southern Forests*[9] provides a smoke dispersion index that should be used for prescribed burning in Georgia. GFC daily fire weather forecasts predict the dispersion index each morning and update values each afternoon. When smoke-sensitive areas are present and likely to be impacted by smoke, a value above 40 on the smoke dispersion index is desired. Values above 60 are desired for larger burns or if smoke-sensitive areas are in close proximity to the burn.

[9] United States Department of Agriculture, Forest Service Southern Region, February 1989; Technical Publication R8-TP 11

Atmospheric mixing height, transport wind speed, and atmospheric stability are also important weather factors that influence smoke dispersion. General guidelines are for a minimum mixing height of 1,650 feet; transport winds of at least 9 mph; and a slightly unstable atmosphere. However, prescribed fires may be successful below these minimums depending on proximity of smoke-sensitive areas and the size and type of the area to be burned. The smoke from a prescribed fire belongs to the person that ignited it, and it is his/her responsibility to assure that it causes no negative impacts and, in particular, to make sure the smoke does not impact any smoke-sensitive areas.

Smoke dispersion should be monitored during the burn by the prescribed burn practitioner for any affects on nearby smoke-sensitive areas. The GFC should be notified if problems occur. Practitioners are responsible for negative impact from their smoke and should take steps to mitigate any problems.

If there is a chance that smoke-sensitive areas may be impacted, burning at night should be conducted only on occasions when wind speed is expected to maintain at least 3-5 mph, relative humidity is predicted to be below 80%, and other relevant smoke dispersion parameters are met.

3. Manage Released Emissions

Both the timing and the amount of emissions released by a fire are usually manageable and can help to reduce smoke impacts. The burning technique utilized should be based on atmospheric conditions and total emissions expected to be released in order to minimize affects on smoke-sensitive areas.

One way to reduce total emissions is to reduce the area (i.e., fuels) to be burned. Forest thinning, whole-tree chipping, use of herbicides where appropriate, and mechanical removal or utilization of fuels to achieve desired resource benefits are all potential options. Another effective method to limit emissions is to schedule a burn when some of the forest fuels are not burnable due to moisture content. These options should be considered whenever necessary to prevent intrusion of smoke-sensitive areas.

Where air quality is a concern, forest management practices should be considered in lieu of burning or as a pretreatment to reduce the amount of smoke from the planned burn.

When EPD's air quality monitors indicate actual exceedances or likely exceedances of air quality standards, EPD and GFC will work together to restrict burning as appropriate. GFC will respond appropriately to complaints and suggestions from the public concerning local smoke-

related air quality issues. GFC offers suppression of burn projects when feasible and practical if monitoring reveals significant smoke intrusions.

B. SMOKE DISPERSION EVALUATION

Smoke dispersion evaluation will be the responsibility of the GFC. The GFC employs a full-time fire weather meteorologist and produces a specialized fire weather and smoke dispersion forecast each morning and afternoon. Major smoke dispersion components of the forecast include surface wind direction and speed, smoke dispersion index, transport wind speeds aloft, and mixing height. There is also a low-visibility occurrence risk index for predicting visibility problems. GFC employees who issue burn authorizations are trained to follow published guidelines for smoke dispersion.

Each GFC burn authorization location maintains an area map showing smoke-sensitive locations. A wind direction arrow is affixed to each map allowing an indication of the current wind direction. Burn permit requests that are large enough to have smoke consequences are plotted on the map and analyzed in relation to wind direction, smoke sensitive receptors, and other burn permits already granted for that day. Authorizations may be denied or modified to avoid serious smoke intrusions.

Georgia's Prescribed Fire Manager Certification Program stresses the necessity of evaluating smoke dispersion in the prescribed burn planning process and teaches practitioners how to do it.

Serious smoke intrusions resulting from authorized burns require documentation and written review with the results readily available.

C. PUBLIC NOTIFICATION

Prescribed burn practitioners should notify local residences, businesses, and other populated areas that may be impacted by smoke from their fire. This may be accomplished by personal contact or by leaving notices such as door hangers. Information provided should include the proposed date, time and location of the burn; contact information for the prescribed burn practitioner who is conducting the burn; and why the area is being burned. For larger fires or fires that may create a special interest from the public, additional notification should be provided through the media. GFC maintains a media notification system where fires in excess of 1,000 acres are reported to the GFC Communications Department, which automatically issues a media alert for the affected area. GFC maintains a Memorandum of Understanding with the Georgia Department of Public Safety and the Georgia Department of Transportation whereby all prescribed fires of 100 acres or more are reported for smoke monitoring on Georgia highways.

D. AIR QUALITY MONITORING

EPD monitors levels of air pollution, including particulate matter, across the state. These monitors are located in urban, suburban, and rural locations for various purposes. NAAQS are set by EPA to protect the health and welfare of the population. When the level of an air pollutant exceeds a NAAQS, this is considered an exceedance. Scientific studies have linked high levels of particulate matter, especially fine particles (alone or in combination with other air pollutants), with a series of significant health problems including premature death, respiratory-related hospital admissions and emergency room visits, aggravated asthma, acute respiratory symptoms (including aggravated coughing and difficult or painful breathing), chronic bronchitis, decreased lung function that can be experienced as shortness of breath, and work and school absences. Burning activity can significantly impact the level of particulate matter (both fine particulate matter or PM2.5 as well as PM10, which constitutes fine as well as larger particles) in Georgia.

EPD maintains various types of PM10 and PM2.5 monitors across Georgia. The US Fish and Wildlife Service and Forest Service both maintain fine particulate monitors for tracking visibility conditions in Federally designated Class I areas in Georgia: Okefenokee Wilderness Area and Cohutta Wilderness Area.

In addition to air quality monitoring, prudent prescribed burn practitioners conduct visual monitoring of their individual projects. Smoke management is taught in the Prescribed Fire Manager Certification Program with emphasis on self-monitoring of smoke impact on smoke-sensitive areas. Such visual monitoring by prescribed burn managers can be useful in identifying and avoiding high levels of particulate matter that might be measured at an air quality monitor.

III. PUBLIC EDUCATION AND AWARENESS

The Georgia Prescribed Fire Act tasks GFC to promote public education and awareness of prescribed fires. This does not preclude other agencies or organizations from promoting prescribed fire, and they are encouraged to do so. The Georgia Prescribed Fire Council and many other natural resource organizations are strong advocates of prescribed fire and include public education as part of their mission.

GFC certifies prescribed fire managers through two sessions each year resulting in about 100 practitioners becoming certified annually.

Other public outreach is attained through school programs, public speaking, landowner field days, fair exhibits, Prescribed Fire Awareness Week and through hands-on assistance available to landowners who want to conduct prescribed burns.

IV. SURVEILLANCE AND ENFORCEMENT

GFC responds quickly and appropriately to smoke-related complaints from the public. Projects that are found to be causing significant smoke intrusions are suppressed to the extent practicable. GFC fire patrol aircraft advise forest rangers of any significant smoke intrusions discovered while on routine wildfire patrols. GFC forest rangers discuss smoke intrusions with individual prescribed burn practitioners whenever problems occur. Suggestions to alter the scope of future projects are made. GFC retains the right to void certification of Georgia certified prescribed burners if certain stipulations are not adhered to which may include smoke intrusion into an smoke-sensitive area if investigation reveals a disregard for basic smoke management practices. All outdoor burning is subject to enforcement through law enforcement officers of GFC, DNR and local law enforcement. The enforcement authority is the *Georgia Forest Fire Protection Act,* as well as EPD's authority to enforce Federal and State air quality regulations and laws.

V. SMOKE MANAGEMENT PLAN EVALUATION

GFC and DNR will work closely with stakeholders to routinely evaluate this plan. GFC will provide data on outdoor burning to stakeholders and EPD will provide pertinent air quality monitoring data. The Georgia Prescribed Fire Council was formed to enable collaboration among prescribed burn practitioners and with other interested public and private organizations to address statewide natural resource goals including air quality. DNR and GFC, in coordination with stakeholders, will evaluate the effectiveness of this SMP at the annual Prescribed Fire Council Meeting and revise it as necessary.

Glossary

Air Quality	The characteristics of the ambient air (all locations accessible to the general public) as indicated by concentrations of the six air pollutants for which national standards have been established [i.e., particulate matter (PM), sulfur dioxide (SO_2) nitrogen dioxide (NO_2) ozone (O_3), carbon monoxide (CO) and lead], and by visibility in mandatory Federal Class I areas.
Ambient Air	That portion of the atmosphere, external to buildings, to which the general public has access.
Class I Area	An area set aside under the Clean Air Act (CAA) to receive the most stringent protection from air quality degradation. Mandatory Class I Federal areas are (1) international parks, (2) national wilderness areas that exceed 5,000 acres in size, (3) national memorial parks that exceed 5,000 acres in size, and (4) national parks that exceed 6,000 acres and were in existence prior to the 1977 CAA amendments. The extent of a mandatory Class I Federal area includes subsequent changes in boundaries, such as park expansions.
Dispersion	The removal (by whatever means) of pollutants from the atmosphere over a given area.
Federal Land Manager (FLM)	The Secretary of the Department with authority over such lands. The FLM for the Department of the Interior) has been delegated to the Assistant Secretary for Fish and Wildlife and Parks (includes the US Fish and Wildlife Service and National Park Service). The FLM for the Department of Agriculture has been delegated to the Forest Service, and for the National Forests in Georgia this has been delegated to the Forest Supervisor.
Fuel	Includes combustible vegetative matter such as grass, trees, shrubs, limbs, branches, duff, and stumps
Fuel Loading	An estimate of the entire accumulation of vegetative matter on a given area, expressed in tons-per-acre.
Micrometer	One millionth of a meter (also micron).
Mixing Height	The upper limit of a mixing layer of unstable air within which the vigorous up and down movement of the atmosphere occurs. It is measured from the ground surface and is expressed in feet.
National Ambient Air Quality Standards (NAAQS)	Standards for maximum acceptable concentrations of pollutants in the ambient air to protect public health with an adequate margin of safety, and to protect public welfare from any known or anticipated adverse effects of such pollutants (e.g., visibility impairment, soiling, materials damage, etc.) in the ambient air.
Particulate Matter (PM)	Any airborne finely-divided material, except uncombined water, which exists as a solid or liquid at standard conditions (e.g., dust, smoke, mist, fumes, or smog).
PM2.5	Particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
PM10	Particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers (including $PM_{2.5}$).

Prescribed Fire	The controlled application of fire to existing vegetative fuels under specified environmental conditions and following appropriate precautionary measures, which causes the fire to be confined to a predetermined area and accomplishes one or more planned land management objectives as specified in paragraphs 12-6-146(3), (4) and (7) of the Georgia Prescribed Burning Act or to mitigate catastrophic wildfires.
Regional Haze	Generally, concentrations of fine particles in the atmosphere extending up to hundreds of miles across a region and promoting noticeably hazy conditions; wide-spread visibility impairment, especially in mandatory Class I Federal areas where visibility is an important value.
Smoke Dispersion Index	A measure of the atmosphere's "diluting power". It is a function of the mixing height, transport wind speed and atmospheric stability class.
Smoke Management Program (SMP)	Establishes a basic framework of procedures and requirements for managing smoke from fires that are managed for resource benefits. The purposes of SMPs 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 in accordance with the regional haze rules.
Smoke Sensitive Areas	Population centers such as towns and villages, camp grounds, hospitals, nursing homes, schools, roads, airports, mandatory Class I Federal areas, etc., where smoke and air pollutants can adversely affect public health, safety and welfare.
Transport Wind Speed and Direction	The average speed of the wind (mph) moving through the mixing layer, and the direction from which the wind is coming. When used in conjunction with the observed or forecasted surface wind, it is a smoke drift indicator.
Violation of the PM NAAQS	As revised in 2006, the daily PM_{10} standard is violated when the 99th percentile of the distribution of 24-hour concentrations for a period of one year (averaged over three calendar years) exceeds 150 µg/m3 at any monitor within an area. The NAAQS levels for $PM_{2.5}$ are set at a daily concentration less than or equal to 35 µg/m3, and an annual mean concentration of less than or equal to 15.0 µg/m3. The daily standard is violated when the 98th percentile of the distribution of the 24-hour concentrations for a period of one year (averaged over three calendar years) exceeds 35 µg/m3 at any monitor within an area. The annual standard is violated when the annual arithmetic mean of the 24-hour concentrations from a network of one or more population-oriented monitors (averaged over three calendar years) exceeds 15.0 µg/m3. Compliance with the annual $PM_{2.5}$ NAAQS is based on population-oriented monitors because the health information, upon which the standard is based, relates area-wide health statistics to area-wide air quality as measured by one or more monitors.
Wildfire	An unwanted wildland fire.
Wildland	An area where development is generally limited to roads, railroads, power lines, and widely scattered structures. The land is not cultivated (i.e., the soil is disturbed less frequently than once in 10 years), is not fallow, and is not in the United States Department of Agriculture (USDA) Conservation Reserve Program. The land may be neglected altogether or managed for such purposes as wood or forage production, wildlife, recreation, wetlands or protective plant cover.
Wildland Fire	Any non-structural fire, other than prescribed fire, that occurs in the wildland. Note: Wildland fires include unwanted (wild) fires and naturally ignited fires that are managed within a prescription to achieve resource benefits.