

Bureau of Land Management

Reno, Nevada



Air Quality Policies Summary Report for the Vegetation Treatments Programmatic Environmental Impact Statement and Environmental Report

Final Report

September 2003

**Bureau of Land Management Contract No. NAD010156
ENSR Document Number 09090-020-610**

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1.0 INTRODUCTION

This report identifies specific air quality and smoke management policies in the Western States and Alaska, the program area addressed in the BLM's Vegetation Treatments Programmatic EIS. Vegetation management techniques proposed in the *Vegetation Treatment Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS) *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Report* (PER) include biological, manual, mechanical, chemical, and prescribed burning treatments, as well as combinations of these methods, in order to reduce the occurrence of noxious weeds, hazardous fuels, and wildfires. ENSR investigated state and local regulatory program requirements for prescribed burning and other vegetation treatment activities. The specific smoke management requirements that would be necessary of a permittee in the implementation of prescribed burning vegetation treatments are described in this summary report.

2.0 KEY STEPS IN THE PROCESS

In 1996, the Grand Canyon Visibility Transport Commission (GCVTC) submitted a report to the USEPA, *Recommendations for Improving Western Vistas*, which recommended that measures be developed to address the potential effects of fire on air quality and smoke from wildfire and managed burn activities. Recognizing that smoke from these activities can have a serious air quality concern in the areas of public health, public nuisance, visibility, and regional haze, the GCVTC came up with eight specific recommendations to be taken to address fire effects on air quality. One key recommendation was the implementation of an enhanced smoke management program.

The Fire Emissions Joint Forum was subsequently established under the Western Regional Air Partnership (an air quality advisory council of the Western Governor's Association) to implement the GCVTC's suggestions regarding smoke management. The Forum contracted with EC/R Incorporated to develop a list of 30 standard questions to query particular state agencies on their requirements for smoke management from wildlands. Nineteen states and 16 local municipalities were queried during 1999 and 2000, and the result was the publishing of the report, *Wildland Smoke Management Program Survey*, on January 26, 2001. The report documented responses from each governmental agency in response to seven subject areas: burn authorization, minimizing emissions, smoke management, public education, surveillance and enforcement, program evaluation, and air quality protection (Wildland Smoke Management Program Survey, January 26, 2001).

ENSR essentially performed the same process as EC/R in obtaining updated smoke management and other vegetation treatment program information. The BLM provided a list of agencies for ENSR to contact in each particular state or municipality. After establishing initial contact, phone interviews of key air quality personnel were conducted, and the contacts were asked to respond to an e-mail survey which outlined 32 key questions on smoke management and other vegetation treatment policies (Table 1). Surveys contained the same 30 questions as the Western Governor's Association's *Wildland Smoke Management Program Survey*, with an additional two questions regarding air quality requirements for other vegetation treatments (i.e. lawnmowing, harvester use, etc.) and herbicide application. Each previous survey respondent who had answered the original survey questions in 1999 and 2000 was sent the survey again in 2002, and was asked to provide any updated answers and regulations, policies, and procedures for prescribed burning and consequent smoke management. ENSR additionally sent the survey to other states and municipalities who were not originally contacted as part of the initial *Wildland Smoke Management Program Survey*, and asked if they could answer all questions and provide any information on smoke management requirements.

TABLE 1
Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association” Smoke Management Program Components Regarding Vegetation Management

Authorization to Burn
<ul style="list-style-type: none"> • What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?) • Regional Coordination – With what adjacent state, local, or tribal jurisdiction does the central authority coordinate? Are there formal Memorandum of Understanding’s (MOU) in place or more voluntary/courtesy coordination? If so, what does the coordination involve? • Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the smoke management program? • What types of burning (agricultural, silvicultural, other) are covered by the program? • How do land managers apply for authorization to burn? • What are the criteria for getting permission to burn? • Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your smoke management program? Is smoke management training available?
Minimizing Air Pollutant Emissions
<ul style="list-style-type: none"> • What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked? • What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires? • Must the actions taken to minimize emissions before and during fires be documented? How is this information used?
Smoke Management Components of Burn Plans
<ul style="list-style-type: none"> • Are written burn plans required by the smoke management program? What information must be included? • How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your smoke management program? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?” • Must the affected public be notified of planned fires? Please describe. • Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans? • Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?
Public Education and Awareness
<ul style="list-style-type: none"> • Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your smoke management program? What is done on an ongoing basis?

TABLE 1 (Continued)
Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association” Smoke Management Program Components Regarding Vegetation Management

<p style="text-align: center;">Surveillance and Enforcement</p> <ul style="list-style-type: none"> • What actions can be taken by the central authority to monitor compliance with the smoke management program? • What penalties are authorized for non-compliance? • Are post-burn reports required? What information is required?
<p style="text-align: center;">Program Evaluation</p> <ul style="list-style-type: none"> • Does the program include provisions to periodically review its effectiveness? • What are the review criteria?
<p style="text-align: center;">Optional Air Quality Protection</p> <ul style="list-style-type: none"> • Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones? • Does the program establish any performance standards? What are performance standards? How is performance evaluated? • What additional smoke management requirements apply if the performance standards have been exceeded? • Do state and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)? • Is the smoke management program, or the regulations authorizing the program, part of the State’s Implementation Plan (SIP)? • How does the state and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)? • Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)? • When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved? • Are you planning to certify your smoke management program to the EPA? If so, what is your time line?
<p style="text-align: center;">Herbicide Application and Other Vegetative Management Treatment Requirements</p> <ul style="list-style-type: none"> • Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides? • Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?

Eighteen states and fifteen Indian tribal governments were queried in 2002 by ENSR for updated policies and procedures on smoke management and other vegetation treatment programs. A total of 121 governmental agencies were contacted, including state agency air quality departments, forestry departments, city and county health departments, fire agencies, and Indian tribal governmental agencies. A table summarizing agency contact information can be found in Appendix 1. Overall, the responses from the surveys were very good. Contact was established and surveys were sent to 96 of the 121. Of these, 52 completed surveys were submitted to ENSR, while 29 agencies defaulted to their respective state agency. Fifteen agencies that were contacted did not submit a response.

In general, most states have at least some type of burn permitting structure to regulate prescribed burns. The completed survey responses from each state are contained in Appendices 2 through 19. However, none of the tribal governments contacted had any smoke management program currently in place due to staffing concerns. One Tribal agency was in the process of developing a Tribal Implementation Plan (TIP) and was considering including smoke management concerns in the TIP, but it was unclear when or if a formal permitting structure for smoke management concerns would be adopted. One agency (Northern Cheyenne Tribal Council of Montana) stated that most major burn decisions were handled through the Bureau of Indian Affairs Forestry Department. Initial responses from most other Indian tribes regarding smoke management programs were limited.

In July 2003, ENSR made an additional attempt to contact tribal agencies about smoke management and prescribed burning policies through the Institute for Tribal Environmental Professionals (ITEP) at Northern Arizona University. ITEP forwarded a report to ENSR, *Tribal Smoke Management Plan Gathering Effort Report*, dated January 24, 2003, which summarized ITEP's efforts to gather tribal smoke management information at the request of the Western Regional Air Partnership (WRAP). ITEP had contacted 17 tribal agencies in 2002, some of which ENSR had also recently attempted to contact, and reported similar difficulties in gathering information from them. To summarize, ITEP received positive responses from only four tribes, including: one completed SMP (from the Coeur D'Alene Tribe), one SMP developed by a county government (from the Confederated Tribes of the Umatilla Indian Reservation), a four-step protocol (from the Spokane Tribe of Indians), and one draft SMP. One additional tribe confirmed that they did have a SMP, but they could not release it at that time. Four tribes reported that they did not have formal SMPs, while eight tribes were unable to respond at all. A copy of ITEP's report, which includes the Coeur D'Alene Tribe's SMP and additional responses, is included in Appendix 20.

The responses received from all state agencies and local municipalities were reviewed, and common elements from smoke management programs were identified to develop a consensus as to what the typical responsibilities would be expected of a burn permit applicant. In particular, three main subject areas identified in the Western Governor's Association survey were used as the basic template to identify the common requirements related to prescribed burning: *Authorization to Burn*, *Minimizing Air Pollutant Emissions*, and *Smoke Management Components of Burn Plans*. Each subject area is described in further detail in the following sections.

3.0 AUTHORIZATION TO BURN

A number of local municipalities, such as county or city health departments, have been given some jurisdiction in issuing burn permits and enforcing burn permit requirements from the appropriate state level agency. Other municipalities simply default to the state agency for all burn permit authorizations. Authorization typically depends on the scale of burn. For a resident seeking to burn dead vegetation in their backyard, a simple burn permit from the local health and fire departments may be all that is needed. For prescribed burns of the scale that BLM is proposing, most local municipalities default to the state agency for authorization, which require more detailed burn permitting requirements and often the submission of a detailed Smoke Management Plan (SMP).

Applying for an authorization to perform prescribed burning varies from state to state and agency to agency, but most state and local agencies require registration of the burn project with the state agency, usually beginning on an annual planning level, at a minimum. Pre-registration is typically required depending on the acreage of the burn or the amount of particulate matter expected to be emitted during the burn (in tons). The acreage amounts requiring

registration typically vary, from a minimum of 10 acres to 250 acres or more. Usually a land manager for the agency must submit all annual pre-registration activities before a certain date in the year (usually the start of burn season).

For permittees to obtain authorization to perform a burn, they must typically first obtain a burn permit. After submitting a burn permit application, the regulatory agency reviews the application, consults with the applicant, and typically makes restrictions on the burn, eventually resulting in the issuance of a burn permit. Most states have pre-set burn permit application forms available on their web site. At a minimum, the basic burn permit application consists of the following:

- Amount of material to be burned per day
- Type of material to be burned per day
- Why the burn is being performed
- Analysis of burn alternatives
- Potential impacts to and identification of smoke sensitive areas
- Name, address and phone number of burn manager
- Location of burn
- Analysis of local meteorological conditions at the start of and duration of the burn
- Estimated start and end times/dates of burn
- Contingency actions in case of smoke intrusions
- The submittal of a required SMP, depending on the size and/or location of burn to smoke sensitive areas

For small burns (usually less than 10 acres), some states require only the submittal of the burn permit application forms and notification to the state agency when the burn will commence. For large burns, the applicant must typically include pre-burn data, burn permit application, provisions for gathering and submitting post-burn data, and a SMP.

Burn tracking systems are commonly used with most state agencies in order to prioritize and assign an identification number to a burn. Usually the day before or the day of the proposed burn, a yes or no decision is given by the permitting agency. The applicant is either contacted directly by the agency and given the go/no-go decision to burn for that day, or is instructed to telephone a special hot-line number that gives authorization. Frequent communication with the permitting agency prior to obtaining the authorization to burn is fairly common throughout all the states queried.

Occasionally, agencies may require a control technology analysis before an authorization is given (for example, Missoula City County Health Department). Best control measures are identified by the applicant that would minimize the amount of air pollution generated by burning (i.e., utilizing proper burning techniques, identifying adequate dispersion conditions, assuring proper air flow to the burn pile, burning of only authorized material, etc.). Restrictions may be placed on the day of the proposed burn, such as limiting the amount of fuel used, burning only at specified times during the day, or burning only in certain geographic locations or elevations. Some agencies also require the estimation of smoke impacts using a simple computer model (i.e., Colorado requires the use of SASEM – Simple Approach Smoke Estimation Model) which must show at a minimum the conditions under which the burn is to be conducted and the visibility impacts on smoke sensitive areas.

3.1 Criteria for Getting Permission to Burn

In granting approval to start a prescribed burn, the permitting agency typically gives consideration to the following factors:

- Emissions generated from existing fires and local burn conditions (drought, etc.)
- Prescribed natural fires already in progress
- Existing local and regional meteorological and wind dispersion conditions
- Existing and predicted local air quality in the location of the burn and surrounding areas
- The type of burn and amounts of material to be burned
- Location of burn and proximity to populated areas
- Consideration of Class I areas, roads, highways, airports, nonattainment areas for Particulate Matter (PM) and carbon monoxide (CO), and consideration of visibility in Class I areas
- Analysis of protecting the National Ambient Air Quality Standards (NAAQS)

Burn plans, including a SMP, are usually required before permission to burn will be given. SMPs outline the analysis undertaken by the applicant in determining the smoke impacts from a prescribed burn. Standard elements of a basic SMP are described in greater detail in Section 5.0. The prescriptions outlined in the SMP are also considered in granting permission to burn. All outlined procedures set by the permitting agency must be followed, and are usually identified in the burn permit and/or smoke management guidelines. The presence of trained personnel conducting the burn on-site is also a consideration on whether to grant permission to burn.

Typically, by a certain time in the day, the state agency responsible for issuing a burn decision will declare for that day or the next whether it is a burn/no-burn day, or a permissive burn day with restrictions (for example, the California Air Resources Board announces by 3 p.m. each day for all of the air basins in the state whether the following day is a permissive burn or no-burn day, or announces if the decision will be made the next day by 7:45 a.m., if conditions preclude a forecast until the next day). Exceptions can be granted to a denial of a burn permit if not burning could cause imminent and substantial economic loss, as demonstrated by the permittee. Permissions would typically be denied if:

- There is a likelihood of smoke intrusion into designated areas.
- Burning would violate a State Implementation Plan regarding visibility protection of a Class I area.
- Burning would violate another state's air quality standards.
- Dispersion conditions would not allow smoke to dissipate properly within a reasonable timeframe after ignition.

In addition to determining if the conditions are acceptable to burn for that day, state agencies typically place restrictions on when a burn can start and end, depending on if it is a proposed multi-day burn or not. Typically for single day burns, no ignition can be started before dawn and all fires must be extinguished before dusk. Multi-day burns may be allowed to burn through the night depending on the forecast and if given permission in the burn permit.

The basic process in granting permission for a burn occurs in the following manner. A burn permit application is submitted to the state or local permitting agency (state air quality department, city/county health department, local fire agency, state or federal forest service are the most common examples) some specified timeframe before the burn is to be conducted. The permitting agency will review the application, discuss it with the permittee, and based on the deciding factors outlined above, will issue or deny the permit, usually with restrictions or conditions. The burn day is preliminarily established, and daily communication with the agency up to the burn day is usually required. On the day of the burn, the agency will issue the burn forecast and the burn decision (yes/no). If approved, the burn then commences until the objectives of the burn are met, after which time the burn is extinguished.

3.2 Operating Agreements, Burner Qualifications, and Smoke Management Training

Most state air quality agencies queried have some type of operating agreement or MOU in place outlining their shared responsibilities and expectations with neighboring agencies or jurisdictions regarding implementing a smoke management program. Federal and state land managers, Indian tribes, and occasionally private companies are typical signatory parties to a MOU and commonly enter into operating agreements should a prescribed burn take place. Typically, all agencies participating in a prescribed burn are bound to abide by the requirements of a smoke management program. If smoke from a burn is anticipated to have cross-jurisdictional impacts, notification procedures are usually required from a signatory party of a MOU before the burn.

Most SMPs, at the minimum, also require that all personnel involved in a burn be properly trained from a recognized course dedicated to smoke management and prescribed fire management techniques (the National Wildfire Coordinating Group is one good example). Depending on the state, interagency training is offered for state and federal land managers on fire ecology, smoke management, and the effects of air pollution from fires (Colorado, Washington, Idaho, and Arizona are some examples). Some states even offer computer modeling training for land managers that allow burners to analyze proposed burns and prepare burning prescriptions based on model output that minimize air pollutant emissions (for example, the Washington Department of Natural Resources). Each prescribed burn must have a Prescribed Fire Manager or “burn boss,” or other local Fire Management Officer in charge of the burn. That individual (or his designee) is responsible for being on-call 24 hours a day for the duration of the burn, and is usually required to be on site in order to make critical management decisions in the event that the burn gets out of control or if impacts to sensitive areas occur or are threatening to occur.

4.0 MINIMIZING AIR POLLUTANT EMISSIONS

Each land manager conducting prescribed burning for vegetation management purposes must implement as many emissions reduction and dispersion techniques as feasible. These techniques usually are required to be addressed in the SMP and documentation that the technique was implemented is typically required in a post-burn report, depending on the state. The following are some common examples that have been identified as best management practices by many states for reducing emissions and improving smoke dispersion:

- Using mass ignition techniques (for example, aerial ignition by helicopter)
- Implementing alternatives to burning
- Reducing the amount of biomass in the fuel, and minimizing soil content when using slash piles as fuel
- Conducting a burn in a season with meteorological conditions that allow for good smoke dispersion
- Igniting burns with good to excellent ventilation conditions, and using natural or artificially induced draft

- Considering smoke impacts and residual smoke on local communities activities and land users, and suspending operations under poor smoke dispersion conditions
- Minimizing duff consumption, smoldering, and wildland fuel consumption through wildland fuel moisture considerations; using brush blades when utilizing material moving equipment
- Utilizing opportunities that meet the burn prescription at all locations to spread smoke impacts over a broader time period and geographical area
- Implementing maintenance burning in periodic rotation to mimic natural fire cycles
- Ensuring material is dried prior to burning and separating non-combustibles
- Timing burns to coincide with weather patterns and times of day that enhance ventilation and dispersion (for example, burning during optimum mid-day dispersion hours with all ignitions complete by 3 p.m. to prevent trapping smoke in inversions or diurnal wind patterns)
- Limiting any smoke impacts to roads, highways, or airports consistent with guidance from highway and airport personnel
- Determining nighttime impacts and taking precautionary measures
- Using accelerated mop-up techniques to reduce visible smoke
- Using a test fire on site to indicate local mixing depths
- Utilizing predictive modeling performed by a regulatory agency to minimize smoke impacts

4.1 Documenting Emissions Reduction Techniques

Depending on the state, a post-burn report may be necessary. This report usually requires the land manager to report the emission reduction techniques used, any burning alternatives implemented, and specific burning techniques used (i.e. broadcast burns, pile burns, etc.). Annual fire activity reports are typically expected from a land manager, summarizing the burns performed for the year. After receiving a post-burn report, the state agency may typically estimate the amount of emissions produced during the burn and enter the data into a tracking system that would quantify the emissions from all burns during the year.

5.0 SMOKE MANAGEMENT COMPONENTS OF BURN PLANS

Depending on the acreage or tons of pollution to be generated by a prescribed burn, a SMP is usually required. The amount of acreage and expected emission rate required to submit a SMP vary from state to state, from as little as 0.5 tons of particulate matter emitted per day (Utah), or 10 acres (California), to upwards of 250 acres, or 50 acres if within 15 miles of a Class I or non-attainment area for PM or CO (Arizona). Based on survey responses from over 18 state agencies, standard elements of a SMP generally include the following:

- The objectives of the burn
- The name of the burn manager, location of the burn, and a 24-hour contact phone number

- The date and expected time of the proposed burn and identification of trained personnel
- The locations of all sensitive features that might be affected by smoke (Class I areas, non-attainment areas, schools, highways, airports, communities, etc.) and their distances from the burn site
- Identification of any smoke dispersion models used to predict impacts from smoke and submittal of the output of results, if required by the agency
- An estimation of the amount of emissions that will be produced during the burn using either emission factors, models, or engineering judgement
- The type of fuel and ignition techniques to be used (drip, helicopter, propane torch, etc.)
- Planned mitigation methods (such as avoidance, dilution, and emissions reduction) and a contingency plan in the event of intrusion into sensitive areas
- Source of weather forecast information and how they will be used to minimize air quality and other impacts
- Monitoring of weather changes and actions that will be taken if unfavorable weather occurs after ignition
- Necessary public notification procedures (radio, newspaper, television, Internet, etc.)
- Analysis of visibility impacts, especially if near Class I areas
- Identification of burning alternatives and explanation as to why they were not used if burning was chosen as preferred treatment option
- Maps of potential impacts of smoke and expected trajectories of smoke plumes
- Expected duration of burn from start to finish
- An analysis demonstrating that smoke impacts will not violate ambient air quality standards
- How smoke impacts during the burn will be monitored (i.e. using smoke spotters, aerial reconnaissance, etc.)
- Any air monitoring to be conducted using instrumentation
- A list of agencies to be notified before and during the burn and appropriate contact persons.

5.1 Evaluation of Smoke Dispersion Conditions

Another necessary element of a prescribed burn is the evaluation of smoke dispersion conditions. Conditions usually must be evaluated by obtaining meteorological information for the burn day forecast, and forecasts for the duration of the burn. Specifically, the main components usually assessed are wind speed, wind direction, ceiling level, mixing depth, atmospheric stability, and presence of inversions. Dispersion conditions are usually plotted on a map depicting the potential impacts of the smoke plume, highlighting the sensitive areas. Usually daytime and nighttime path and down-drainage flow of smoke mapping is required for areas downwind of the burn site.

Depending on the state, modeling is performed for burns that exceed certain acreage or are located near a sensitive area to demonstrate impacts will be negligible. Also, dispersion conditions on site may need to be verified by land managers by utilizing one of the following measurement techniques: release of a pilot balloon at the burn site; establishment of area-representative or actual burn site remote automated weather stations (RAWS), or equivalent to

obtain real-time data; or smoke plume measurements using formats supplied by permitting agency. If visibility is deemed to be impaired due to a burn by the regulatory agency, then suppression activities must be initiated promptly.

5.2 Public Notice Requirements

Typically, most state agencies require some type of public notification for a prescribed burn activity based on the size of the burn, unless it will occur in a remote area where notice is not required (Alaska is a good example). The public notice must usually be issued through local news media or other means. The notice must include the name of the person conducting the burn, a list of material to be burned, a telephone number to contact before and during the burn, and the expected time, date, and burn location. Radio and newsprint still appear to be the most common notification methods, but the Internet is quickly becoming the easiest tool to disseminate information to the public. Posting signs at the burn site is also typical. If an agency determines that a multiple-day burn may impact communities, then the land manager usually must notify the public within a minimum timeframe before the burn.

5.3 Contingency Plans

Contingency plans are almost always required as part of a SMP. They must outline actions to follow if prescription burn conditions are exceeded, or if the state agency declares an air quality advisory, emergency, etc., or if impacts occur in sensitive areas. Typical contingency plans must contain at a minimum:

- Limitations on a burn; if it is not easily extinguished, then it is not manageable.
- Mandatory consultation and reporting with the state agency in the scenario that intrusions occur or are predicted.
- Identifying actions to minimize impacts. For example, simple extinguishing of the burn, rapid mop up to prevent smoldering, etc.

Submission of smoke intrusion reports is typically performed by the state agency. Enforcement proceedings may be initiated if warranted.

5.4 Monitoring Air Quality Impacts of Prescribed Burns

Monitoring smoke impacts typically consists of observing weather conditions and smoke plume impacts at a minimum. Near smoke sensitive receptors and Class I areas, visual monitoring, documentation of plume direction, and establishment of real-time particulate matter monitors may be required. PM is typically the most frequent parameter monitored by instrumentation. Data is typically collected before, during, and after a burn to evaluate the achievement of specific smoke management objectives outlined in a permittee's SMP.

State agencies operate existing monitoring stations and process complaints as another form of monitoring. Monitoring can consist of simply recording on-site, real-time weather data, such as wind speed, direction, and stability. Alternatively, enhanced monitoring can consist of making smoke plume measurements, utilizing PM or CO monitors, and predicting air quality concentrations through models. In some states, the responsibility of monitoring air quality impacts from fires falls directly upon those agencies (such as Washington's Department of Ecology and Oregon's Department of Forestry). Some states have established trigger levels that determine whether an air quality emergency may arise due to smoke impacts. For example, Montana's Missoula City-County Health Department has established an action level of $80 \mu\text{g}/\text{m}^3$ (8-hour average) for ambient particulate levels that automatically shuts down all outdoor burns. In most cases, if exceedances are found, suppression activities are ordered immediately by the appropriate agency.

Other monitoring techniques of note are posting personnel on vulnerable roadways to look for visibility impairment, placing personnel at sensitive receptors to look for intrusions, and using aircraft to track plume progress.

6.0 SAMPLE RESOURCES FOR SMOKE MANAGEMENT

Several resources are available for obtaining assistance in smoke management from prescribed burning. Good starting points are each state agencies' Internet web sites, specifically the links to a Smoke Management Program page. Several state agencies, such as the California Air Resources Board (<http://www.arb.ca.gov/smp>), the Arizona Department of Environmental Quality (<http://www.adeq.state.az/enviro/air>), the Utah Department of Environmental Quality (<http://www.utahsmp.net>), and the Colorado Department of Public Health and Environment (<http://apcd.state.co.us/smoke/smoke.html>), have invested significant time in developing their smoke management programs and have very informative links to the regulations directly accessible via their web sites. In addition, discussions on the development of smoke management regulations are frequently listed, and burn permit application forms and smoke management guidance documents are frequently available.

A smoke management information tool is being developed by the Pacific Northwest National Laboratory (PNNL), in conjunction with the United States Forest Service and EPA Region 10, called BlueSky-RAINS. BlueSky-RAINS is designed to be an interactive web-based application, which will provide up-to-date information for prescribed burns conducted yesterday and scheduled to be conducted today and tomorrow. The application will provide graphical and tabular information on the source characteristics and emissions from prescribed burns for areas in the Pacific Northwest. It will also provide graphical displays of forecasts of meteorological data from the University of Washington's nightly mesoscale (MM5) model run, and show displays of trajectory plots for smoke plumes from prescribed burns and other non-burn locations. Forward trajectories can extend 48 hours into the future, according to the web site. Also, displays of backward trajectory plots for air parcels passing over selected receptor locations will be possible, and links to National Weather Service forecast offices and other web sites that provide information related to agricultural and forestry burning will be available.

BlueSky-RAINS employs custom mapping capabilities which enable the user to overlay different geographic features and layers over data displays (i.e. county boundaries, major roadways, schools, etc.), enabling easier visualization of potential smoke plume impacts. The web site address for BlueSky-RAINS is <http://www.bluesky.org>. A more detailed description of the capabilities of this application is listed in Appendix 21.

APPENDIX 1

**CONTACT MATRIX AND SUMMARY OF SMOKE
MANAGEMENT PROGRAM PLAN SURVEYS**

Contact Matrix and Summary of SMP Plan Surveys

State/Municipality	Contact Person	Contact- ed?	Method of Communi- cation? (E=email, P=phone)	Date of communi- cation	Survey Sent?	Updated answers to previous WGA SMP Survey?	Est. survey comple-tion date	Phone #	Notes and web site available for information
Alaska Department of Environmental Conservation, Air and Water Quality Division	Ann Lawton alawton@envircon.state.ak.us	Y	E,P	P=3/12/02, E=3/13/02, P=4/8/02	Y	Y - See Survey for noted changes	4/18/2002	907-269- 3066	www.state.ak.us/dec/dawq/aqi
AK - Municipality of Anchorage, Department of Health and Human Services, Environmental Services Division, AQ Program	Larry Taylor TaylorL@ci.anchorage.ak.us	Y	E,P	P=3/11/02, E=3/12/02	Y - Replied 3/12/02	n/a	5/7/2002?	907-343- 3713	Most recent open burn and pesticide/herbicide use regs sent. www.ci.anchorage.ak.us/healthsed/air.cfm.
AK - Fairbanks North Star Borough - I/M Program Air Quality	Paul Rossow AQ Specialist prossow@co.fairbanks.ak.us	Y	E	P=3/14/02, E=3/14/02	Y - No involvement in wildland fires. Replied 3/14/02	n/a	4/18/2002	(907) 459- 1325	www.co.fairbanks.ak.us
Arizona DEQ	Mark Fitch mjf@ev.state.az.us	Y	E,P	P=3/14/02, E=3/14/02	Y - Replied via phone 3/26/02	No - all answers remain same except for herbicide questions (pending).	4/18/2002	602-207- 2374	www.adeq.state.az.us/environ/air. SIP proposal to address Class I area visibility protection by adopting an enhanced SMP is not going to be put forth probably until 2003.
AZ - Maricopa County	Rick Haddow, AQ Open Burn Manager, Compliance Section rhaddow@mail.maricopa.gov	Y	E,P	P=3/15/02, E=3/15/02, P=4/25/02	Y- Replied 4/26/02	n/a	4/26/2002	602-506- 4834	www.maricopa.gov/envsvc/default.asp
AZ - Pima County	Bill Maxwell - Senior Civil Engineering Asst. bmaxwell@deq.co.pima.az.us	Y	P	E=3/18/02, P=3/15/02	Y - Replied 3/19/02.	No answers given - County only regulates backyard fires; state is lead in all major burns.	4/18/2002	520-740- 3340	www.deq.co.pima.az.us. Pima County does not regulate prescribed burns, only "backyard" fires.
AZ - Pinal County	Jean Parkinson, Planning Manager jean.parkinson@co.pinal.az.us	Y	E,P	E=3/26/02, P=3/26/02	Y- Replied 4/2/02	n/a	4/18/2002	(520) 868- 6969	www.co.pinal.az.us
CA ARB (Air Resources Board)	Mr. George Ozanich, Air Pollution Control Specialist, NSAQMD nsaqmd@psln.com	Y	E,P	E=3/18/02, P=3/18/02	Y- Replied 3/28/02	Y - See Survey	4/24/2002	(530) 283- 4654	www.arb.ca.gov/smp/smp.htm
CA - Amador County APCD	Karen Huss, Deputy APCO, khuss@air-amador.org	Y	E,P	E=3/18/02, P=3/18/02	Y- Replied 3/22/02	n/a	4/19/2002	(209) 257- 0112	www.air-amador.org
CA - Antelope Valley APCD	Mr. Bret Banks, Operations Manager bbanks@mdaqmd.ca.gov. Also Joe Cassmassi of SCAQMD: jcassmassi@aqmd.gov. Also: Captain Joe Lindemann, Burn Manager, LA County Fire Dept.	Y - spoke with Cassma ssi 6/4/02	E,P	E=3/19/02, P=3/18/02, P=4/1/02, P=4/19/02, E=6/3/02, P=6/4/02	Y- Default to SCAQMD Survey answers.	n/a	6/11/02?	Antelope Valley:(661) 723-8070; SCAQMD: (909) 396- 3155; LA County Fire Dept.:(818)- 952-6469	www.avaqmd.ca.gov. Antelope Valley Burn Day forecast decisions handled by SCAQMD. Contacted SCAQMD to determine jurisdictional authority and which SMP is correct: LA County Fire Dept. handles most burn permit authorizations for Antelope Valley APCD, but SCAQMD handles Smoke Management concerns after burn permit is issued.
CA - Bay Area Air Quality Management District	Doug Tolar dtolar@baaqmd.gov	Y- Left messag e 5/3/02	E,P	E=3/18/02, P=3/18/02, 4/8/02, 5/3/02	Y- Replied 5/7/02	Y	5/7/2002	(415) 749- 5118	www.baaqmd.gov/. Open burning regulations changed 5/01; there are differences between agricultural burning and prescribed burning for wildland management.
CA - Butte County AQMD	Mr. Stephen Ertle, Burn Program Manager sertle@bcaqmd.org	Y	E,P	E=3/18/02, P=3/18/02, P=4/5/02, E=6/6/02	Y- Default to NEAA 2000 survey reply answers.	n/a	6/13/2002	(530) 891- 2882	www.bcaqmd.org. Same responses as NEAA (North East Air Alliance); Default to NEAA responses given in 2000 survey.

Contact Matrix and Summary of SMP Plan Surveys

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CA - Calaveras County APCD	Lakhmir Grewal, Agriculture Department lgrewal@co.calaveras.ca.us	Y	P	P=3/18/02, P=4/5/02, 4/30/02, E=6/6/02, E=12/12/02	Y- Default to CARB Survey answers.	n/a	Unknown	(209) 754- 6504	www.co.calaveras.ca.us. Default to CARB survey answers.
CA - Colusa County APCD	Ukris Wongse-Ont [uwongse- ont@colusanet.com]	Y	E,P	E=3/18/02, P=4/8/02	Y	n/a	4/30/2002	(530) 458- 0590	www.colusanet.com/apcd/rules_regs.htm. Colusa County APCD SMP requirements are similar to Shasta, Glenn County.
CA - El Dorado County APCD	Mr. Dennis Otani, Program Manager dotani@co.el- dorado.ca.us	Y	E,P	E=3/18/02, P=3/18/02, P=4/24/02, E=4/25/02	Y 3/25/02	n/a	4/26/2002	(530) 621- 6662	SMP Plan at: co.el-dorado.ca.us/emd/apcd/index.html
CA - Feather River Air Quality Management District	Jeff Citron, Burn Coordinator jcitron@fraqmd.org	Y	E,P	E=3/18/02, P=3/18/02, P=4/5/02	Y- Pending as of 4/5/02	n/a	4/18/2002	(530) 634- 7659	www.fraqmd.org
CA - Glenn County APCD	Ed Romano, APCO airpollution@countyofglenn.net	Y	E,P	E=4/5/02, P=4/5/02	N - APCD follows CARB guidelines for Smoke Management.	n/a	n/a	(530) 934- 6500	www.countyofglenn.net/dept/airpoll/default.asp
CA - Great Basin Unified APCD	Jonathan Becknell, Air Quality Specialist II jonbecknell@hotmail.com	Y	E	E=3/19/02, P=4/5/02	Y- Replied as of 4/10/02	n/a	4/18/2002	(760) 872- 8211	No web site at this time.
CA - Imperial County APCD	Jeanette Monoroy, Deputy APCO jeannettemonroy@imperialcounty.net	Y	E,P	E=3/19/02, P=3/19/02, P=4/25/02	Y- Faxed SMP on 4/25/02	n/a	5/6/2002	(760) 482 - 4314	www.imperialcounty.net. Historically prescribed burning has not taken place, mostly just agricultural burning occurs.
CA - Kern County APCD	Steve Beyn steveb@co.kern.ca.us	Y	E,P	E=3/19/02, P=3/19/02	Y- Replied as of 3/20/02	n/a	4/18/2002	(661) 862- 5250	www.kernair.org
CA -Lake County AQMD	Robert Reynolds, APCO bobr@pacific.net	Y	E,P	E=3/19/02, P=3/19/02	Y- Replied 4/10/02	n/a	4/24/2002	(707) 263- 7000	SMP Plan at www.co.lake.ca.us.
CA -Lassen County APCD	Kenneth Smith, APCO lassenag@psln.com	Y	E,P	E=3/19/02, P=3/19/02	Y- Received hard copy of SMP on 3/27/02.	n/a	3/27/2002	(530) 251- 8110	www.co.lassen.ca.us
CA -Mariposa County APCD	David Conway air@yosemite.net	message 3/25/02	P	P=3/19/02	No-regs, policies same as Amador, Calaveras, etc.	n/a	4/19/2002	(209) 966- 2220	Smoke management and regs same as Tuolumne County, Calaveras, Amador, Northern Sierra AQMD/APCDs
CA -Mendocino County AQMD	C. Dean Wohlbach, APCO mcaqmd@co.mendocino.ca.us	Y	E,P	E=3/19/02, P=4/8/02	Y - Replied 4/15/02	n/a	5/3/2002	(707) 463- 4354	www.co.mendocino.ca.us. Called back, filling out survey would be very labor intensive for them for engineering staff to fill out. SMP Plan received in mail 4/15/02.
CA -Mojave Desert AQMD	Mr. Doug Macauley, Mgr. Compliance dmacauley@mdaqmd.ca.gov	Y	E,P	E=3/19/02	Y- Replied as of 3/20/02	n/a	4/19/2002	(760) 245- 1661	www.mdaqmd.ca.gov
CA - Monterey Bay Unified APCD	Amy Taketomo, Senior AQ Planner ataketomo@mbuapcd.org	Y	E,P	E=3/20/02, P=3/20/02, P=4/18/02, E=5/7/02	Y- Replied 5/7/02	n/a	5/7/2002	(831) 647- 9411	www.mbuapcd.org - Also stated to look at Draft EIR report which may summarize some elements of new Smoke Management Program in MBUAPCD
CA - North Coast Unified AQMD	Leonard Herr, AQ Specialist lherr_ncuaqmd@hotmail.com	Y- Left mess. 5/06/02	E,P	P=3/19/02, 5/6/02, E=4/18/02	Y - Replied 5/8/02	n/a	5/13/2002	(707) 443- 3093	www.northcoast.com/~ncuaqmd
CA - Northern Sierra AQMD	Mr. George Ozanich, Air Pollution Control Specialist, NSAQMD nsaqmd@psln.com	Y	E,P	E=3/18/02, P=3/18/02	Y- Reply sent 3/28/02	Y	4/18/2002	(530) 283- 4654	www.ncn.net/~nsaqmd/

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CA - Northern Sonoma APCD	Alex Saschin, George Erdman nsc@sonic.net	Y	E,P	E=3/19/02, P=3/19/02, P=4/30/02, P, E=5/6/02, E=6/6/02, E=12/12/02	Y- Pending as of 6/6/02. Very busy - may not be able to answer.	n/a	6/13/02?	(707) 433- 5911	IF NO REPLY BY 6/13/02, DEFAULT TO CARB SURVEY ANSWERS.
CA - Placer County APCD	Ann Hobbs ahobbs@foothill.net	Y	E,P	E=3/19/02, P=3/19/02	Y- Replied as of 4/9/02	n/a	4/9/2002	(530) 889- 7130	www.placer.ca.gov/airpollution/airpolut.htm
CA - Sacramento Metropolitan AQMD	Sue Engstrom, Ag. Commission Contact sengstrom@airquality.org	Y	E,P	E=3/19/02, 5/9/02, P=3/19/02, E=6/6/02.	Y- Replied 6/6/02.	n/a	6/6/2002	(916) 874- 4815	www.airquality.org/. SMP is undergoing slight revisions for forecasting and modeling-type upgrades to be submitted to ARB in July of 2002.
CA - San Diego County APCD	Mr. Jim Cooksey, Burn Program Mgr. Jimmie.cooksey@sdcounty.ca.gov	Y	Email, P	E=3/25/02, P=3/25/02, E=4/9/02, E= 5/3/02, E=6/6/02.	Y- Replied 4/9/02	n/a	6/13/02?	(858) 650- 4554	www.sdapcd.co.san-diego.ca.us. Proposed rule ready for public workshop on May 9, 2002
CA - San Joaquin Valley APCD	Evan Shipp evan.shipp@valleyair.org. Also: Jose Martinez, Agric. Burn Coordinator jose.martinez@valleyair.org	Y	E,P	P=3/20/02, P,E= 4/30/02, E=6/6/02, P=6/17/02, E=12/12/02, P=12/30/02, E=1/8/03	Y - Replied 6/6/02 and 6/13/02; reply - should have reply by 6/21/02?		6/21/02?	(559) 779- 9882	www.valleyair.org. ANTICIPATE REPLY BY 6/21/02. Survey re-sent to Jose 1/8/03. Replied 1/8/03.
CA - San Luis Obispo APCD	Mr. Andy Mutziger, AQ Specialist amutziger_apcd@co.slo.ca.us	Y	E,P	E=3/20/02, P=3/20/02, P=4/25/02	Y- Replied 5/10/02. Same replies as CARB.	n/a	6/11/2002	(805) 781- 4AIR	www.slocleanair.org. Same survey reply answers as State of CA ARB reply.
CA - Santa Barbara APCD	Craig Strommen strommenc@sbcapcd.org	Y	E,P	E=3/22/02, P=3/22/02, Left message 4/25/02, E=6/6/02	Y- Replied 6/10/02	n/a	6/10/2002	(805) 961- 8800	www.sbapcd.org
CA - Shasta County APCD	John Waldrop, Air Pollution Inspector aqmd@co.shasta.ca.us	Y	E,P	E=3/25/02, P=3/25/02	Y- Replied as of 4/12/02	n/a	4/12/2002	(530) 225- 5674	www.co.shasta.ca.us/Departments/Resourcegmt/drm/aqmain.htm
CA - Siskiyou County APCD	Randy Akana, APC Specialist rakana@co.siskiyou.ca.us	Y	E,P	E=3/25/02, P=3/25/02, P=4/30/02, E=6/6/02, E=12/12/02	Y- Replied 12/13/02 No response given	n/a	Unknown	(530) 841- 4025	www.co.siskiyou.ca.us/agcomm/airpollution.htm. SCAPCD has responsibility for burn permits during non-fire season, while CDF (Calif. Dept. of Forestry) has responsibility during fire season. Forest management burning above 6000 ft doesn't require a permit during non-fire season. No response due to budget cuts.
CA - South Coast AQMD	George Wright, Supervisor Inspections gwright@aqmd.gov	Y	E,P	E=3/28/02, P=3/28/02, Left message 4/25/02, E=6/3/02	Y- Pending as of 6/3/02.		DEFAULT TO 2000 SURVEY ANSWERS	(909) 396- 3005	www.aqmd.gov
CA - Tehama County APCD	Gary Bovee, Assistant APCO gbovee@tehcoapcd.net	Y	E,P	E=3/25/02, P=3/25/02	Y- Replied 3/26/02	n/a	3/26/2002	(530) 527- 3717	www.tehcoapcd.net
CA - Tuolumne County APCD	Bill Sandman, Deputy APCO bsandman@co.tuolumne.ca.us	Y	E,P	E=3/25/02, P=3/25/02	Y- Replied 3/25/02.	n/a	5/9/2002	(209) 533- 5691	www.mymotherlode.com

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CA - Ventura County APCD	Kent Field, Meterological Section kent@vcapcd.org; Mallory Ham	Y - left message 5/6/02, 12/30/02	E, P	E=3/25/02, P=3/25/02, 4/25/02, 5/6/02, E=6/10/02, E=12/12/02, P=12/30/02, P=1/9/03	Y- Pending as of 6/11/02	n/a	Unknown	(805) 645- 1400; (805) 622-6960 direct	www.vcapcd.org Default to CARB per phone conversation with Mallory Ham 1/9/03.
CA - Yolo-Solano County AQMD	David Smith, Burn Program Mgr. dsmith@ysaqmd.org	Y	E, P	E=3/25/02, P=3/25/02	Y- Same requirements of Sac. Metropolitan AQMD.	n/a	5/9/2002	(530) 757- 3650	www.ysaqmd.org
CO - Dept. of Public Health and Environment APCD	Coleen Campbell, APCD coleen.campbell@state.co.us	Y	E, P	E=3/26/02, P=3/26/02, Left message 4/25/02	Y- Replied 4/26/02	Y	4/30/2002	(303) 692- 3224	www.apcd.state.co.us/smoke/smoke.html. State of CO has new regulation for large burns. OPEN BURN BAN IN EFFECT UNTIL LATE 2002.
CO - City of Boulder - Boulder Fire Dept.	Rod Moraga, Burn Program Manager moragar@ci.boulder.co.us	Y	E, P	E=3/26/02, P=3/26/02	Y- but did not reply.	Stated no answers should be given since answers would not pertain to the BLM.	n/a	(303) 441- 3350	www.ci.boulder.co.us.
CO - Boulder County Health Dept.- Air Quality Program	Bonnie Greenwood bsghe@co.boulder.co.us	Y	P	P=3/26/02, Left message 4/25/02	No - As of 7/1/02, all burn authorizations default to state.	n/a	4/26/2002	(303) 441- 1180	www.co.boulder.co.us/health/enviro/mainair.htm
City of Denver Dept. of Public Health, Div. Of Env. Protection	Tumu Johnson, Env. Protection Specialist	N	P	P=3/26/02	No; NO BLM LAND IN CITY OR COUNTY OF DENVER	n/a	3/26/2002	(720) 865- 5444	www.ci.denver.co.us/Environmental_Protection/
Regional Air Quality Council (Denver)	N/A	N	N/A	N/A	No; NO BLM LAND IN CITY OR COUNTY OF DENVER	n/a	3/26/2002		
CO - El Paso County Dept. of Health and Environment, AQ Program	John James johnjames@epchealth.org	Y	E, P	E=3/26/02, P=3/26/02	Y- Reply sent 3/26/02	n/a	4/26/2002	(719) 578- 3199	www.elpasocountyhealth.org/environment
CO - City of Fort Collins, Poudre Fire Authority	Rick Baldwin, Asst. Fire Marshall rbaldwin@fcgov.com	Y	P	P=3/26/02, P,E=4/29/02, E=6/6/02	Y- Pending as of 6/6/02	n/a	Unknown	(970) 221- 6581	No web site at this time.
CO - Jefferson County Health Dept., Dept. of Health and Environment, Env. Health Services, AQ Control Division	Jeff Morse, Env. Health Specialist jmorse@co.jefferson.co.us	Y	E, P	E=3/26/02, P=3/26/02	Y- no prescribed burns regulated by county.	n/a	n/a	(303) 271- 5777	206.247.49.21/ext/dpt/health/ehs/ehs_air_openburn.htm. All prescribed burns handled by State; only regulated open burning is household pile burns.
CO - Larimer County Health Dept. Environmental Health Division, AQ Program	Doug Bjorlo, Env. Health Specialist dbjorlo@larimer.org	Y	E, P	E=3/26/02, P=3/26/02, E=6/6/02	Y- Pending as of 6/6/02	n/a	6/11/2002	(970) 498- 6783	www.co.larimer.co.us/health/. BURNS (PRIVATE AND RESIDENTIAL) ARE ISSUED IN CONJUNCTION WITH ALL LOCAL FIRE AGENCIES; LARGE BURN AUTHORITY (BLM, ETC.) DEFAULTS TO STATE; DEFAULT TO STATE OF CO SURVEY REPLY. OPEN BURN BAN IN EFFECT UNTIL LATE 2002.
CO - Mesa County Health Dept. Environmental Health Service, AQ Program	Perry Buda, AQ Specialist pbuda@co.mesa.co.us	Y	E, P	E=3/26/02, P=3/26/02, E=6/6/02, E=12/12/02	Y- Pending as of 6/6/02; reply on 12/12/02	n/a	6/21/2002?	(970) 248- 6960	www.co.mesa.co.us defaults to State
CO - Pueblo City-County Health Dept. Environmental Health Division	Emmitt Hance, Env. Health Specialist	Y	P	P=3/26/02	No	n/a	3/26/2002	(719) 583- 4323	www.geocities.com/HotSprings/3867/pcchd.htm. State of CO is lead on issuing permits; County contact (Mr. Hance) and Fire Dept. are simply notified after the fact after burn permit is issued.

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CO - Tri-County (Adams, Arapahoe, Douglas) Health Dept. Environmental Health	Lynn Robio-Wagner	Left message 4/25/02, 6/7/02	P	P=3/26/02, 4/25/02, 4/29/02, 4/30/02, 6/7/02	No	n/a	6/10/2002	(720) 322-1550	www.tchd.org. ALL BURN AUTHORITY DEFAULTS TO STATE; DEFAULT TO STATE OF CO SURVEY REPLY.
CO - Weld County Health Dept. Public Health and Environment	Phil Brewer, Air Specialist	Y	P	P=4/15/02, 5/6/02, E=4/15/02, P=6/10/02	Y- Pending as of 6/10/02	n/a	N/A	(970) 304-6410	www.co.weld.co.us. PERMITTING DEFAULTS TO STATE OF CO, USE STATE OF CO REPLY.
ID - Dept. of Env. Quality - AQ Div.	Diane Riley, AQ Analyst driley@deq.state.id.us	Y	E	E=3/27/02	Y- Replied 4/4/02; original survey answers are current; additional info. was provided to be considered.	No - all answers remain mostly the same.	4/19/2002	(208) 373-0502	Proposed changes to SMP rules are currently being debated: http://www2.state.id.us/deq/rules/58-0101-0201.htm . Target date for closing negotiations on Open Burning reg changes is 5/31/02. Operating guide for Montana-Idaho smoke management is at www2.state.id.us/deq/rules/58-0101-0101.htm . Also has a Wildfire Natural Events Action Plan at www2.state.id.us/deq/air/smoke/NEAP/NEAP.htm .
KS - Dept of Health and Env. Bureau of Air and Radiation	Russ Brichachek, Unit Supervisor rbrichac@kdhe.state.ks.us	Y	E,P	E=3/27/02, P=3/27/02, P=4/30/02, E=6/7/02, E=12/12/02	Y- Replied 12/16/02	n/a	6/14/2002?	(785) 296-1544	www.kdhe.state.ks.us/bar/
KS - Johnson County Env. Dept. AQ Program	Michael Boothe, AQ Program Mgr. Michael.boothe@jocoks.com	Y	E,P	E=3/27/02, P=3/27/02	No - no specific County prescribed burn requirements. See State requirements.	n/a	3/27/2002	(913) 492-0402	www.jocoks.com. There are no specific County prescribed burn requirements; Fire Dept.would issue a burn permit. The burn permits requirements if issued follow the state guidelines and local fire code.
KS - Topeka Shawnee County Health Agency Env. Health Div.	Perry Piper Env. Health Specialist perry.piper@co.shawnee.ks.us	Y	P, E	P=3/27/02, 5/1/02, E=5/1/02, E=6/6/02, E=12/12/02	Y - Replied 12/12/02	n/a	6/14/2002?	(785) 368-2054	www.co.shawnee.ks.us/healthagency/envirohealth.htm Agency does not regulate "wildland or agricultural" open burns
KS - Wichita-Sedgwick Dept. of Community Health, Environmental Health Division	Randy Owen, Env. Health Specialist owen_r@ci.wichita.ks.us	Y	E,P	E=4/8/02, P=3/28/02	Y- Replied 4/11/02	n/a	4/11/2002	(316) 268-8448	www.sedgwick.ks.us
KS - Wyandotte County-Kansas City Unified Government	Justus Welker, Env. Scientist jwelker@wycokck.org	Y	P	E, P=4/18/02, 4/30/02, 6/7/02, E=12/12/02, P=12/30/02, P=1/9/03	Y- Pending as of 6/7/02	n/a	Unknown	(913) 573-6700	www.wycokck.org/departments/public_health/index.html Replied via e-mail 6/19/03. No official SMP. Little prescribed burning since a mostly urbanized county.
MT - Department of Environmental Quality, Permitting and Compliance Division, Air and Waste Management Bureau	Robert Habeck, AQ Specialist	Y	E,P	E, P=4/18/02	Y- Replied 4/18/02	Y	5/13/2002	(406) 444-7305	www.deq.state.mt.us/pcd/awm/index.asp
MT - Great Falls Cascade County City-County Health Dept. Air Pollution Control Program	Brian Clifton, Supervising Sanitarian	Y	P	P=4/18/02	N - Major burns regulated by State DEQ.	n/a	4/18/2002	(406) 454-6950	www.co.cascade.mt.us. County Air Pollution Control Program handles only backyard fires, major burns are regulated by state. When a major burn is performed, County asks you contact Health Dept. and Sheriff Dept (Fire Dept.) to inform them of a burn.
MT - City and County of Missoula, Health Dept. Air Pollution Control	Shannon Therriault therriaults@ho.missoula.mt.us	Y - left message 5/6/02	E,P	E, P=4/18/02, 5/6/02, E=6/10/02	Y- Replied 6/14/02	Y	6/14/2002	(406) 523-4755	www.co.missoula.mt.us/EnvHealth/AirQ/eqindex.html.
MT - Yellowstone County Air Pollution Control	Steve Duganz, Burn Program Director sduganz@co.yellowstone.mt.us	Y	P	P=4/18/02, P, E=4/25/02	Y - Replied 4/25/02	n/a	5/30/2002	(406) 256-6841	www.co.yellowstone.mt.us/airpollution/burnpermits/burn.html. Burn permits needed year round. No SMP, simple requirement to obtain open burn permit, call local Fire Dept. before burn, and no night burning.

Contact Matrix and Summary of SMP Plan Surveys

State/Municipality	Contact Person	Contacted?	Method of Communication? (E=email, P=phone)	Date of communication	Survey Sent?	Updated answers to previous WGA SMP Survey?	Est. survey completion date	Phone #	Notes and web site available for information
NE - Department of Environmental Quality, Air Quality Section	Renee Hancock Renee.Hancock@NDEQ.State.NE.US	Left message 4/18/02	P	P=4/18/02, E, P=4/25/02	Y- Replied 5/10/02	n/a	5/10/2002	(402) 471-2189	www.deq.state.ne.us/. Permit needed also from Local Fire Chief.
NE - Lincoln-Lancaster County Health Department, Env. Health Div., Air Quality	Mr. Rick Thorson, Asst. Chief for Env. Public Health rthorson@ci.lincoln.ne.us	Y	E,P	E, P=4/18/02	Y - Replied 4/30/02	n/a	4/30/2002	(402) 441-8040	www.co.lancaster.ne.us/city/health/envirom/index.htm
NE - City of Omaha, Air Quality	Chester Black, AQ Control Manager	Y	P	P=4/18/02	N - No BLM land in City of Omaha nor anywhere near it.	n/a	n/a	(402) 444-6015	www.ci.omaha.ne.us/departments/public_works/default.htm
NV - Division of Environmental Protection, Bureau of Air Quality	Curtis Payne, Ambient Monitoring/Planning Branch cpayne@govmail.state.nv.us	Y	E,P	E, P=4/18/02, 5/6/02, 5/22/02	Y-replied 5/22/02	Y- only question #2.	5/22/2002	(775) 687-4670	ndep.state.nv.us/baq/smoke.htm
NV - Clark County Department of Air Quality Management	Rodney Langston, Senior Air Quality Planner langston@co.clark.nv.us.	Left message 4/18/02, 5/1/02, 6/10/02	P	P=4/18/02, 5/1/02, 6/10/02, E=12/12/02	N - typically prescribed burning is not allowed; agricultural burning is limited (noxious weeds removal) outside of Las Vegas Valley non-attainment area. 12/12/02 Sent open burning regulations	n/a	n/a	(702) 455-1661	www.co.clark.nv.us/air_quality/index.htm. Technically no prescribed burning in Las Vegas Valley non-attainment area; typically Clark County does not allow prescribed burning on any level. 12/12/02 permits prescribed burning by gov't agencies where burn plans are approved in advance
NV - Tahoe Regional Planning Agency Environmental Compliance Division	Jesse Jones, jjones@trpa.org	Y	P	P=4/25/02, P,E=4/29/02, P=6/10/02	Y - did not respond, see notes.	n/a	N/A	(775) 588-4547	www.trpa.org. No BLM Land in the Tahoe Valley. TRPA does not regulate smoke management programs, all permitting would default to state DEP. DEFAULT TO STATE OF NV SURVEY REPLY.
NV - Washoe County Health District AQM Division	Linda O'Brien lobrien@mail.co.washoe.nv.us	Y	P	P=4/25/02, E, P=5/6/02	Y- Replied 5/14/02	n/a	5/17/2002	(775) 784-7206	www.co.washoe.nv.us/Health/
NM - Environment Department, Environmental Protection Division, Air Quality Bureau	Vicky Komie vicky_komie@nmenv.state.nm.us	Left message 4/25/02	E,P	E=4/25/02, P=Left message 4/25/02, E=6/10/02	Y - No reply.	No.	6/14/2002	(505) 955-8009	www.nmenv.state.nm.us/aqb/aqb_home.html. DEFAULT TO STATE OF NM SURVEY REPLY OF 2000.
NM - City of Albuquerque, Environmental Health Department, Air Pollution Control Division	Mark Dear, Compliance Supervisor mdear@cabq.gov	Left message 4/26/02	E,P	E=4/26/02, P=Left message 4/26/02, E=6/10/02	Y - No reply.	No.	6/15/2002	(505) 768-1958	DEFAULT TO ORIGINAL SURVEY REPLY OF 2000.
ND - Department of Health, Div. Of Air Quality	Chuck McDonald	Y	P	P=4/26/02	N - Answers are up to date.	No - Only change is: at year end, burners must submit post burn report summarizing acreage burned.	n/a	(701) 328-5188	www.health.state.nd.us/ndhd/envirom/ee/. Emission factors for end of year burns reports are being debated by NDHD, no concrete plan yet.
OK - Dept. of Environmental Quality, AQ Division	Linn Wainner linn.wainner@deq.state.ok.us	Y	E,P	E=4/26/02, P=4/26/02, E=6/10/02	Y - Replied 6/14/02	n/a	6/14/2002	(405) 702-4100	www.deq.state.ok.us/AQDnew/permitting/aqpermit.htm
OK - Oklahoma City and County Health Dept. Environmental Program	None listed	Y	P	P=4/26/02	N - City and County burn requirements default to state DEQ standards.	n/a	4/26/2002	(405) 297-3439	www.okc-cityhall.org/. Burn permits issued by Fire Marshall.
OK - Tulsa City and County Health Dept. AQ Control Section	John Ethridge jethridge@tulsa-health.org	Left message 4/26/02	P	P=4/26/02	No - No BLM Land in City or County of Tulsa or anywhere near.	n/a	n/a	(918) 595-4308	www.ci.tulsa.ok.us/Contact+us/General.asp

Contact Matrix and Summary of SMP Plan Surveys

State/Municipality	Contact Person	Contact- ed?	Method of Commu- nication? (E=email, P=phone)	Date of communi- cation	Survey Sent?	Updated answers to previous WGA SMP Survey?	Est. survey comple-tion date	Phone #	Notes and web site available for information
OR Dept. of Forestry	Mike Ziolk Mike.E.Ziolk@state.or.us	Spoke 4/29/02	E,P	E=4/26/02, P=4/26/02, E=6/10/02	Y - Replied 6/13/02	Y	6/13/2002	(503) 945- 7200	www.odf.state.or.us/odfinfo.htm#What.
OR - Lane County Regional Air Pollution Authority	John Morrissey mojo@lrapa.org	Y	E,P	E=4/29/02, P=4/26/02	Y - Replied 5/2/02. Responses are same as State of OR.	n/a	5/2/2002	(541) 736- 1056 x 211	www.lrapa.org/programs/backyardburn.htm. Appears LRAPA does not regulate burns set or permitted by any public agency for weed abatement and fire hazard prevention. State of OR survey response is same for Lane County.
SD - Dept. of Environment and Natural Resources - DES AQ Program	Rick Boddicker Rick.Boddicker@state.sd.us, also Natural Resources Engineer chris.hanson@state.sd.us	Y	E,P	E=4/26/02, P=4/26/02, E=12/12/02	Y - Replied 12/13/02; Smoke Management Program not completed	n/a	6/14/02?	(605) 773- 5935	www.state.sd.us/denr/DES/AirQuality/openburn.htm#WILDLAND. SMP proposed to be implemented this summer (date unknown). SMP not completed. No response given.
TX - TNRCC Office of Permitting, Remediation and Registration	Phil Harwell pharwell@tnrcc.state.tx.us	Y	E,P	E=4/26/02, P=4/26/02, E=6/10/02	Y - Replied 6/12/02	n/a	6/12/2002	(512) 239- 1517	www.tnrcc.state.tx.us/admin/directory/phone/permit.html#airpermits. Each region and county may have different prescribed burn requirements from state. NO BLM LAND IN TX.
TX - City of Austin Planning, Environmental and Conservation Services, Air Quality Program	n/a	Left messag e 4/26/02	P	P=4/26/02	n/a	n/a	n/a	(512) 974- 1898	www.ci.austin.tx.us/airquality/contactus.htm. No BLM Land in city limits nor anywhere near.
TX - City of Dallas Environmental and Health Services, Air Pollution Control Program	Barbara Trahan	Left messag e 4/29/02	P	P=4/29/02	No - No open burning allowed.	n/a	n/a	(214) 948- 4435	www.dallascityhall.com/dallas/eng/html/environmental_services.html. No BLM Land in city limits nor anywhere near.
TX - City, County of El Paso Health and Environmental District, Air Quality Program	Jesse Moncada, TNRCC El Paso Region Burn Coordinator jmoncada@tnrcc.state.tx.us	Y	P	P=4/29/02, 4/30/02, E=4/30/02, E=6/10/02	Y - Pending as of 6/10/02; anticipate reply by 6/21/02	n/a	6/21/02?	(915) 834- 4968	www.tnrcc.state.tx.us/admin/directory/region/reglist.html#6. City and County burn requirements are handled by State regional office contact. APPEARS THERE IS NO BLM LAND IN TX. IF NO ANSWER BY 6/14/02, STATE NO REPLY GIVEN BY TNRCC.
TX - City of Fort Worth, Dept. of Environmental Management, Air Quality Division	Sandra Lopez, City of Fort Worth, Dept. of Environmental Management, Air Quality Division, 5000 MLK Freeway, Ft. Worth, TX 76116	Y	P, Mail	P=4/29/02, Mail=4/29/02, P=Left mess. 6/10/02	Y - via mail 4/29/02. NO REPLY GIVEN.	n/a	Unknown	(817) 871- 5450	www.fortworthgov.org/DEM/airpg.htm. STATE NO REPLY GIVEN (NO BLM LAND NEAR CITY OF FORT WORTH).
TX -Galveston County Health District, Air Pollution Control Department	Ms. Diana Stevens	Y	P	P=4/29/02	N - No changes to Galveston County response (see notes).	No; League City burning requirements disallow any open burning.	n/a		www.gchd.org. No changes to Galveston County requirements. League City has exceptions to open burning, but for commercial purposes (non residential), no burning is allowed.
TX -Harris County Health District, Air Pollution Control Department	Mr. Michael Shively, Texas Agriculture Extension Service	N	n/a	n/a	N - No changes to Harris County response (see notes).	n/a	n/a	n/a	www.hd.co/harris.tx.us/pcd/faq.htm. Harris County does not require permits nor written burn plans for legal burns. There are no local burning regulations; the county follows Texas state regulation 1, Chapter 111, Visible Emissions for open burning.
TX -City of Houston, Dept. of Health and Human Services, Bureau of AQ Control	n/a	N	n/a	n/a	N	n/a	n/a	n/a	No BLM land within city boundaries nor near it.
TX -City of Houston, Dept. of Health and Human Services, Bureau of Air Policy	n/a	N	n/a	n/a	N	n/a	n/a	n/a	No BLM land within city boundaries nor near it.
TX - Houston-Galveston Area Council Air Quality Programs	n/a	N	n/a	n/a	N	n/a	n/a	n/a	No BLM land within city boundaries nor near it.
TX - City of Lubbock Health Department, Fire Marshall Office	Ed Henderson, Fire Marshall Office	Y	P	4/30/2002	No - No open burning allowed	n/a	n/a	(806) 775- 3000	www.ci.lubbock.tx.us/departments/departments_overview.asp. No BLM land within city limits nor anywhere near. No open burning allowed at all.
TX - San Antonio Metropolitan Health Dist. Environmental Services	David Newman, Env. Management Division Manager	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No BLM land within city limits nor anywhere near.
TX - South East TX Regional Planning Commission - Air Quality Advisory Committee	Bob Dickinson, Director of Transportation and Environmental Resources bdickinson@setrpc.org	Left messag e 4/30/02	P	P=4/30/2002	n/a	n/a	n/a	(409) 727- 22384	www.setrpcaqac.org/. NOTE: AQ Advisory Council has no regulatory nor jurisdictional authority, nor do they issue burn permits. No contact was made.

Contact Matrix and Summary of SMP Plan Surveys

	State/Municipality	Contact Person	Contact- ed?	Method of Communi- cation? (E=email, P=phone)	Date of communica- tion	Survey Sent?	Updated answers to previous WGA SMP Survey?	Est. survey completion date	Phone #	Notes and web site available for information
	UT - Utah Dept. of Environmental Quality, Division of Air Quality	Greg Zschaechner gzschaechner@worldnet.att.net	Left messag e 4/30/02	E, P	E=4/26/02, P=4/26/02	Y - Reply sent 5/10/02.	Y	5/29/2002	(801) 539- 4151	SMP Plan at www.utahsmp.net .
	UT - Salt Lake Valley Health Department, Bureau of APC	Blake Waters, Supervisor bwaters@co.slc.ut.us	Y	E, P	E, P=5/1/2002, E=6/10/02, E=12/12/02	Y - Pending as of 6/10/02, Replied 12/12/02	n/a	Unknown	(801) 313- 6682	www.slvhealth.org/html/eh/html/airpol.html . DEFAULT TO STATE OF UT SURVEY REPLY OF 2000.
	WA - Dept. of Natural Resources	Mark Gray mark.gray@wadnr.gov	Y	E, P	E, P=5/1/2002	Y - Replied 5/30/02	No	5/30/2002	(360) 902- 1000	www.wa.gov/dnr/contact/
	WA - Benton County Clean Air Authority	Terry Flores	Left messag e 5/1/02	P	P=5/1/2002	N - Burn permit authority defaults to state	n/a	n/a	(509) 943- 3396	Burn permitting defaults to state DNR.
	WA - Northwest Air Pollution Authority	Julie O'Shaughnessy, Compliance Manager julie@nwair.org	Left messag e 5/1/02	E, P	E=5/1/02, P=5/1/02	N - Burn permit authority defaults to state	n/a	n/a	(360) 428- 1617	www.nwair.org/services/outdoor.html . Burn permitting defaults to state DNR.
	WA - Olympic Air Pollution Control Authority	Rebecca Hersha, AQ Specialist rhersha@oapca.org	Y	E, P	E=5/1/02, P=5/1/02	Y - Replied 5/10/02, Burning defaults to state DNR.	n/a	n/a	(360) 438- 8768	www.oapca.org/OpenBurning.html . Burning defaults to state DNR.
	WA - Puget Sound Clean Air Agency	Jim Nolan	Y	E, P	E=5/1/02, P=5/1/02, 5/2/02	N - Burn permit authority defaults to state	n/a	n/a	(206) 689- 4035	www.pscleanair.org . PSCAA is prohibited from establishing regulations; burn permitting defaults to state DNR.
	WA - Southwest Clean Air Agency of WA	Mr. Brian Fallon, Burn Permit Specialist	Left messag e 5/1/02	E, P	E=5/1/02, P=5/1/02	Y - Burn permit authority defaults to state	n/a	n/a	(360) 574- 3058 x38	www.swcleanair.org/ . Burn permitting defaults to state DNR.
	WA - Spokane County APC Authority	Matt Holmquist, Compliance Administrator, also Crystal Alford mgholmquist@scapca.org	Y	E, P	E=5/2/02, P=5/2/02	N - Burn permit authority defaults to state	n/a	n/a	(509) 477- 4727	www.scapca.org/ Burn permitting defaults to state DNR.
	WA - Yakima Regional Clean Air Authority	Gary Pruitt, Operations Manager gary@yrcaa.org	Y	E, P	E=5/1/02, P=5/1/02	Y - Burn permit authority defaults to state	n/a	n/a	(509) 574- 1410	www.co.yakima.wa.us/cleanair/default.htm Burn permitting defaults to state DNR.
	WY - Wyoming Dept. of Env. Quality, AQ Division	Ms. Darla Potter	Left messag e 5/2/02	P	P=5/2/02, 6/4/02	No	N - only change regarding regional haze questions.	6/4/2002	(307) 777- 7758	deq.state.wy.us/aqd.htm . The state anticipates developing a Smoke Management Program in conjunction with the Regional Haze SIP depending on the recent (May 2002) court proceedings regarding regional haze, but at this time, no SMP in place.

Contact Matrix and Summary of SMP Plan Surveys

State/Municipality	Contact Person	Contacted?	Method of Communication? (E=email, P=phone)	Date of communication	Survey Sent?	Updated answers to previous WGA SMP Survey?	Est. survey completion date	Phone #	Notes and web site available for information
Tribal Governments - Affiliated Tribes of Northwest Indians	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	www.atntribes.org. Affiliation has no regulatory authority. No contact made.
Tribal Governments - Confederated Tribes of Siletz Indians	Mike Kennedy, Manager Natural Resources Dept. mikek@ctsi.nsn.us	Y	P	P=5/3/02	N	n/a	5/3/2002	(541) 444-2532	www.ctsi.nsn.us/WhatWeDo/Natural_Resources/natural_resources.html. Tribe burn permits default to state, tribe follows state policies and SMP, and also obtains burn plan approval from Bureau of Indian Affairs (BIA).
Tribal Governments - Flathead Indian Nation	Randy Ashley, AQ Program Manager	Left message 5/2/02	P	P=5/2/02	No	n/a	6/14/02?	(406) 676-2550	tlc.wtp.net/salish.htm. Contact unsuccessful.
Tribal Governments - Fort Peck Indian Reservation (Assiniboine and Sioux Tribes)	Deb Madison, Office of Env. Programs	Not yet	P		No	n/a	6/14/02?	(406) 768-5155	fpth.d2g.com/envirhlth.htm. Contact unsuccessful.
Tribal Governments - Inter Tribal Council of AZ	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	www.itcaonline.com/mission.html. Council has no regulatory authority. No contact made.
Tribal Governments - Jamestown S'Klallam Tribe (Olympic Peninsula Washington)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No BLM Land anywhere near tribal boundary.
Tribal Governments - Jemez Pueblo (northern NM), Dept. of Resource Protection	Ben Wear, Manager AQ Program, also Murdat Herdad, Director	Y - left message 5/7/02	P=5/7/02	n/a	No	n/a	n/a	(505) 834-7530	Repeated contacts attempted, no response received, contact discontinued.
Tribal Governments - Moapa Paiute Band (southern NV)	Unknown	Not yet	P	n/a	No	n/a	n/a	(702) 865-2787	Cannot get Dept. to answer phone. Contact unsuccessful.
Tribal Governments - Navajo Nation Air Quality Control Program	Walter Laughter, Environmental Specialist	Y	P	P=5/2/02	No - no SMP in place	n/a	n/a	(928) 729-4246	www.cia-g.com/~nilchi. No Smoke Management requirements, nor any burn regulations developed.
Tribal Governments - Northern Cheyenne Tribal Council (SE MT) Dept. of Natural Resources, Env. Protection Division, AQ Division	Jay Little Wolf, Tribe AQ Administrator elminoguy@hotmail.com; Terry Spang, Fire Management Officer (BIA) mail364984@pop.net	Y	E, P	E,P=5/7/02, E=6/11/02 (BIA), E=12/12/02, P=12/29/02, P=1/3/03	Y - pending reply from BIA as of 6/11/02	n/a	6/18/02?	(406) 477-6506; (406)477-6244	www.ncheyenenne.net/northern_cheyenne_tribal_council.htm. TIP (Tribal Implementation Plan) proposed to be submitted this year may address Smoke Management concerns. No formal permitting in effect for AQ Department, although BIA (Bureau of Indian Affairs) has verbal coordination with AQ Dept. when burns are issued through BIA Forestry Dept. BIA is answering for Tribe since most major burn decisions on reservation are handled by BIA. No response given as of 1/14/03.
Tribal Governments - Spokane Indian Tribe (E WA)	Kevin Ritzer, Fire Management Dept.	Y	P	P=5/7/02	No; NO SMP Plan.	n/a	6/14/02?	(509) 258-4566	Fire Management handles prescribed burns. AQ Dept. may perform modeling of smoke with PUFF and MM5.
Tribal Governments - Southern Ute Indian Tribe (S CO), Env. Programs Division, AQ Dept.	Virgil Fraser	Y - left message 5/9/02	P	P=5/9/02	No	n/a	6/14/02?	(970) 563-0100	www.southern-ute.nsn.us. Contact unsuccessful.
Tribal Governments - Suquamish Tribe (NW Puget Sound WA)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No BLM Land anywhere near tribal boundary.
Tribal Governments - Taos Pueblo (N NM)	Pueblo Office of Env. Protection, AQ Department Amadeo Shije	Y - left message 5/7/02	P	P=5/7/02	No - need to contact Taos Pueblo Env. Office directly	n/a	6/14/02?	(505) 758-9593	www.aipc-poep.com. Contact unsuccessful.
Tribal Governments - Yavapai-Apache Nation (C AZ)	Unknown	No	P	P=5/8/02	No	n/a	n/a	(928) 567-0594	Contact unsuccessful.

Appendix 2

State of Alaska Survey Responses

**Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”
EC/R Incorporated - January 26, 2001**

From communication with Alaska DEC 3/19/02

Smoke Management Program Components Regarding Vegetative Management

^A DEC Pesticide Control Regulations (18 AAC 90)

[1] Alaska Department of Environmental Conservation, Open Burning Policy & Guidelines at <http://www.state.ak.us/dec/dawq/aqi/openburn.htm>

[2] Comments received from the Alaska Department of Environmental Conservation dated March 19 and April 12, 2002.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Alaska Department of Environmental Conservation (DEC) is responsible for regulations and permits to address environmental protection. [1] • The Alaska Department of Natural Resources (DNR) is responsible for regulations and permits to address fire safety concerns. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • DEC does not coordinate with Canada, our only neighbor, primarily because very little smoke passes their borders into populated areas. [2] • Regional coordination within the state occurs through the monthly meetings of the Alaska Wildland Fire Coordinating Group (AWFCG), comprised of representatives of all agencies that use fire as a management tool (BIA, NPS, US FWS, Chugachmiut, BLM/AFS, DNR F&G, DNR Forestry, USDA FS). DEC is an <i>ad hoc</i> member, and does not have voting privileges. However, there is an <i>ad hoc</i> Air Quality Committee of the AWFCG that is a forum to discuss air quality issues. [2] • Coordination primarily occurs between DEC and each land manager on a case-by-case basis, or through AWFCG. We also collaborate on press releases, public education, and other issues during wildfire events or prior to large controlled burns. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The current smoke management program requires that all burners adhere to state regulations governing nuisance smoke, NAAQS, and operating with an approval from the state. A written approval requires public notification, minimization of smoldering, and weather coordination for optimum conditions. [2] • The state recognizes the need to develop an Alaska SMP to control open burning and, due to interagency concerns over such a document, the Air

	Quality Committee of the Alaska Wildland Fire Coordinating Group will be developing the document. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Open burning within the state is addressed by the DEC regulations, policies and guidelines. [2]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Controlled (prescribed) burning to manage forest, land, vegetative cover, fisheries, or wildlife habitat, other than burning to combat a natural wildfire, requires written DEC approval if the area to be burned exceeds 40 acres yearly. [1] • For land clearing, notification of at least one day in advance of burning attempts should be provided to the DEC. If burning is not conducted for that day, remodification is required on the day burning commences. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Written permission requires that the burn follow specific state regulations. Permission can be denied if the burn will not adhere to regulations, particularly if a sensitive area would be impacted. Written permits can be revoked and enforcement may be pursued for burns in deliberate violation of regulations. [2]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • No operating agreements are in effect. [2] • No special requirements are specified by DEC for burner qualifications, except that any prior burning must have been done in accordance with state regulations. [2] • No smoke management training is available within the state for any agencies. [2]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • It is the policy of the DEC to encourage other methods of disposal where possible. [1] • The DEC supports the maximum recycling and utilization of wood and forest products to reduce the volume of material requiring burning. [1] • No incentives are given for using alternatives, although some sensitive areas require “creative” measures to ensure that NAAQS are not exceeded. [2] • Emissions in general are not tracked. Alaska does not have any applicable fuels data for emission calculations. [2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize	<ul style="list-style-type: none"> • When open burning is permitted by the DEC, the permittee must provide for the most efficient combustion possible for the material to be burned. [1]

impacts from fires?	<ul style="list-style-type: none"> • A person may not cause or permit any emission that is injurious to human health or welfare, animal or plant life, or property, or that would unreasonably interfere with the enjoyment of life or property. [1] • Except for controlled burning or firefighting, a person conducting open burning must ensure that: 1) the material is dried or kept covered to the greatest extent possible prior to burning; 2) before igniting the burn, noncombustibles are separated; 3) natural or artificially induced draft is present; 4) to the greatest extent practicable, combustibles are separated from grass or peat layer; and 5) combustibles are not allowed to smolder. • Open burning in a way that gives off toxic or acidic gases or particulate matter is prohibited. [1] • Open burning is prohibited in an area if the DEC declares an air quality advisory (due to inadequate air ventilation) stating that burning is not permitted in that area for the day. [1] • Burn plans for prescribed fires address smoke management concerns and identify potentially impacted sensitive areas. Smoke management techniques are used prior to and during prescribed burns, including timing the burns to coincide with weather patterns that enhance ventilation and dispersion. If a sensitive area is impacted, DEC consults with the burn agency to assess fire suppression prior to completing the prescription.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Documentation of actions taken is important if smoke in populated areas becomes an issue. We do not correlate emission reduction techniques with emission data (because we don't have any). [2]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Each prescribed burning applicant will have an operational plan of action documenting the weather conditions under which the use of prescribed fire will be authorized, and contingency actions to follow if prescriptive conditions are exceeded. Plans for burning that may impact sensitive areas, such as population centers or airports, will require more specific detail than plans for remote areas. [1] • A complete burn plan is required for land clearing open burns planned for each year. [1] • Burn plans must address the following control concerns which may be modified to fit the specific open burning situation: 1) the location, duration,

	and inclusive dates for the burn(s); 2) the location of all sensitive features that might be impacted by smoke; 3) where weather forecasts will be obtained and how it will be used to prevent smoke impacts; 4) how weather changes will be monitored and what will be done to reduce or mitigate smoke impacts if unfavorable weather occurs after ignition; 5) considerations for visibility impacts; 6) how coordination with air quality authorities having jurisdiction will be accomplished; 7) procedures that will be used to coordinate with other concerned agencies; 8) how the public will be informed prior to, during, and after the burn; 9) actions to enhance the active fire phase and reduce the smoldering phase; 10) actions to validate predicted smoke dispersal conditions; 11) alternative disposal options for material being open burned. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • For land clearing, the applicant may be required to obtain meteorological information for the burn day, specifically wind speed, wind direction, and ceiling level, both for the start of the burn and forecasted for the duration of the burn. If the wind direction would allow smoke to impact on sensitive areas, burning may be denied for that period. [1] • Except for firefighter training, open burning of materials in a way that gives off black smoke is prohibited without written DEC approval. The person who conducts open burning must establish reasonable procedures to minimize adverse environmental effects and limit the amount of smoke generated. [1] • Open burning is prohibited between November 1 and March 31 in a wood smoke control area. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • All approved fires require public notice unless it is waived in writing due to burn area remoteness. [2] • A person required to provide public notice of open burning must issue the notice through the local news media or by other appropriate means if the area of the open burning does not have local news media. The public notice must be issued as directed by the DEC and must: state the name of the person conducting the burn; provide a list of material to be burned; provide a telephone number to contact the person conducting the burn before and during the burn; and the expected time, date, and location of the open burning. [1]
14. Are contingency plans required to reduce	• Each prescribed burning applicant will have an operational plan of action

exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<p>documenting contingency actions to follow if prescriptive conditions are exceeded. [1]</p> <ul style="list-style-type: none"> • If the DEC declares an air quality advisory, it will (1) require that the burn be extinguished immediately; (2) suspend all new ignitions in the area; (3) request voluntary emission curtailments from any person issued a permit whose facility's emissions might impact the area subject to the advisory; and (4) publicize actions to be taken to protect public health. [1], [2] • Limitations may have to be placed on the burn for easy shutdown. [1] • Placing limitations on all burns is part of the contingency plan. If a burn is not easily extinguished, then it is not of a manageable size and is therefore not under control. Failure to be able to extinguish a burn may result in enforcement actions. [2]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The DEC will, in its discretion, declare an air episode and prescribe and publicize curtailment action when the concentration of an air contaminant in the ambient air has reached, or is likely in the immediate future to reach established concentrations. [1] • The term "established concentrations" is a misnomer because we only have monitors in four towns. We use visibility and public complaints in other areas to determine when a burn needs to be extinguished. We have the ability to monitor PM10 in emergencies, but funding and staff are limited. We have a new group organized specifically for monitoring of water and air. We follow EPA SOP requirements. [2] • Concentrations are established in the rules for three episode types and four air contaminants. The episode types are: Air alert, Air warning, or Air emergency. The contaminants are: sulfur dioxide, PM10, PM10 from wood burning (wood smoke control areas), and carbon monoxide. (Please see table at the end of this survey for the concentrations triggering an air episode) [1] • Concentrations for PM2.5 will be added after the data collection period is concluded. [2]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of	<ul style="list-style-type: none"> • Public education and outreach is a large part of SMP and air compliance. DEC policy is geared more toward public education versus enforcement. Programs are usually focused for specific air criteria for specific locations

your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	(i.e. wood stove smoke and wood stove program for Juneau). Elements consist primarily of fact sheets, special pamphlets, media stories, and websites. The television and newspaper media have been very helpful in assisting DEC with air quality issues and educating the public. DEC policy is to focus on “customer service” to best serve the public. Open burn approvals for large prescribed burns require public meetings and newspaper notification prior to ignition, as well as “interpreters” near the burn. This decreases public complaint calls and encourages interaction with the public. [2]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Public complaints generally “monitor compliance” during controlled burns. A good working relationship between DEC and land managers has greatly assisted compliance and emission reduction techniques. Alaska is in the process of developing a SMP which will have criteria outlining compliance requirements for the program. Should these criteria fail to adequately protect public health, the Air Quality Committee of the Alaska Wildland Fire Coordinating Group (which is chaired by DEC) will re-evaluate the criteria and make additional requirements as needed. [2]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Response to a “Notice of Violation” (NOV) is usually all that is required in order to ensure that the permittee prevents the incident from recurring. [2]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Burn reports are submitted for controlled burns when they are available, although very little post-burn evaluation is done in the state. The Alaska SMP will outline the process for reporting post-burn information. Burn tracking and emission estimates are needed from all burners. DEC will try to encourage post-burn reporting as much as possible. [2] • For land clearing, a summary report listing types of fuels and quantities burned, days burning occurred, and the meteorological conditions during the burn may be required by the DEC as part of the approval conditions. [1]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The program consists of only one person. Budget cuts do not allow for adequate program evaluation at this time. [2]
21. What are the review criteria?	<ul style="list-style-type: none"> • Not applicable. [2]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special	<ul style="list-style-type: none"> • The Alaska SMP will describe criteria for “sensitive area” designation,

protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	including Class I areas, hospitals, airports, etc. Additional smoke management requirements for burns that may impact sensitive areas are always addressed by the burner in their burn plans. [2]
23. Does the program establish any performance standards? What are performance standards? How is performance evaluated?	• Not applicable. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	• Not applicable. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	• Nuisance regulations apply to prescribed fires, but not to prescribed natural fires. Criteria for establishing a “nuisance” includes documentation from a safety or health authority in the area, photos, and number of complaints (particularly those with health effects). [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	• Not at this time. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	• The state DEC Open Burn position is one FTE statewide. The position is funded by 50% SIP funds and 50% General Funds. Currently, there are no fees charged for open burn permits, and no other administrative costs charged to burners. The DEC is not able to collect punitive penalties for violations of the open burn regulations. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	• Not at this time. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions	• Not at this time. [2]

achieved?	
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• Yes, by December 2003. [2]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	The use of herbicides on federal lands is usually addressed in their EIS/EAs if they are using it. The ADEC does not have any specific AQ regulations regarding the use of herbicides, except that they not create a nuisance or public/env threat. Pesticide definition includes the term herbicide. No one shall apply a pesticide in a manner that results in pesticide drift; or apply when the wind speeds exceed the maximum wind speed stated in the labeling; or seven miles per hour, if no wind speed is stated in the labeling; pesticides must be applied over the target area and at the customary height for the target; emergency dumping is allowed but must be reported. ^A
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	The ADEC does not have any specific AQ regulations regarding the use of herbicides, except that they not create a nuisance or public/env threat. Biological (grazing?) veg mgmt is generally not done here. Any manual veg mgmt/removal is greatly encouraged by ADEC, and will be tracked in the SMP as an alternative to burning (decreasing emissions).

**Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”
EC/R Incorporated - January 26, 2001**

**From communication with Municipality of Anchorage, Alaska 3/19/02
Smoke Management Program Components Regarding Vegetative Management**

[1] Alaska Department of Environmental Conservation, Open Burning Policy & Guidelines at <http://www.state.ak.us/dec/dawq/aqi/openburn.htm>

[2] Comments received from the Alaska Department of Environmental Conservation dated March 19 and April 12, 2002.

^a Municipality of Anchorage Regulations, Chapter 15.35.100 Stationary Source Emissions – Open Burning

^b Municipality of Anchorage Regulations, Chapter 15.75 Pesticide Control

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Municipality of Anchorage (MOA) Fire Chief and MOA Air Pollution Control Officer (or Air Quality Department, Environmental Services Division, Department of Health and Human Services). ^a
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	MOA Fire Chief and APCO
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The current smoke management program requires that all burners adhere to state regulations governing nuisance smoke, NAAQS, and operating with an approval from the state. A written approval requires public notification, minimization of smoldering, and weather coordination for optimum conditions. [2] • The state recognizes the need to develop an Alaska SMP to control open burning and, due to interagency concerns over such a document, the Air Quality Committee of the Alaska Wildland Fire Coordinating Group will be developing the document. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<p>Open burning for the disposal of trees and brush on property being developed for commercial or residential purposes or on property where the trees and brush were grown is allowed provided that:</p> <p>a. Open burning shall be allowed only outside the Anchorage bowl area and only during the periods from April 1 through May 31 and August 15 through October 31;</p> <p>b. The person responsible for such open burning shall obtain a written permit for such fire from the fire chief and upon terms and</p>

	conditions specifically approved by the director and shall comply with all the laws and regulations of the director, the fire chief and all other governmental agencies regarding such fires. ^a
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Controlled (prescribed) burning to manage forest, land, vegetative cover, fisheries, or wildlife habitat, other than burning to combat a natural wildfire, requires written DEC approval if the area to be burned exceeds 40 acres yearly. [1] • For land clearing, notification of at least one day in advance of burning attempts should be provided to the DEC. If burning is not conducted for that day, remodification is required on the day burning commences. [1] • The person responsible for such open burning shall obtain a written permit for such fire from the fire chief and upon terms and conditions specifically approved by the director and shall comply with all the laws and regulations of the director, the fire chief and all other governmental agencies regarding such fires.²
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Written permission requires that the burn follow specific state regulations. Permission can be denied if the burn will not adhere to regulations, particularly if a sensitive area would be impacted. Written permits can be revoked and enforcement may be pursued for burns in deliberate violation of regulations. [2]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • No operating agreements are in effect. [2] • No special requirements are specified by DEC for burner qualifications, except that any prior burning must have been done in accordance with state regulations. [2] • No smoke management training is available within the state for any agencies. [2]
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • It is the policy of the DEC to encourage other methods of disposal where possible. [1] • The DEC supports the maximum recycling and utilization of wood and forest products to reduce the volume of material requiring burning. [1] • No incentives are given for using alternatives, although some sensitive areas require “creative” measures to ensure that NAAQS are not exceeded. [2]

	<ul style="list-style-type: none"> • Emissions in general are not tracked. Alaska does not have any applicable fuels data for emission calculations. [2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • When open burning is permitted by the DEC, the permittee must provide for the most efficient combustion possible for the material to be burned. [1] • A person may not cause or permit any emission that is injurious to human health or welfare, animal or plant life, or property, or that would unreasonably interfere with the enjoyment of life or property. [1] • Except for controlled burning or firefighting, a person conducting open burning must ensure that: 1) the material is dried or kept covered to the greatest extent possible prior to burning; 2) before igniting the burn, noncombustibles are separated; 3) natural or artificially induced draft is present; 4) to the greatest extent practicable, combustibles are separated from grass or peat layer; and 5) combustibles are not allowed to smolder. • Open burning in a way that gives off toxic or acidic gases or particulate matter is prohibited. [1] • Open burning is prohibited in an area if the DEC declares an air quality advisory (due to inadequate air ventilation) stating that burning is not permitted in that area for the day. [1] • Burn plans for prescribed fires address smoke management concerns and identify potentially impacted sensitive areas. Smoke management techniques are used prior to and during prescribed burns, including timing the burns to coincide with weather patterns that enhance ventilation and dispersion. If a sensitive area is impacted, DEC consults with the burn agency to assess fire suppression prior to completing the prescription.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Documentation of actions taken is important if smoke in populated areas becomes an issue. We do not correlate emission reduction techniques with emission data (because we don't have any). [2]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Each prescribed burning applicant will have an operational plan of action documenting the weather conditions under which the use of prescribed fire will be authorized, and contingency actions to follow if

	<p>prescriptive conditions are exceeded. Plans for burning that may impact sensitive areas, such as population centers or airports, will require more specific detail than plans for remote areas. [1]</p> <ul style="list-style-type: none"> • A complete burn plan is required for land clearing open burns planned for each year. [1] • Burn plans must address the following control concerns which may be modified to fit the specific open burning situation: 1) the location, duration, and inclusive dates for the burn(s); 2) the location of all sensitive features that might be impacted by smoke; 3) where weather forecasts will be obtained and how it will be used to prevent smoke impacts; 4) how weather changes will be monitored and what will be done to reduce or mitigate smoke impacts if unfavorable weather occurs after ignition; 5) considerations for visibility impacts; 6) how coordination with air quality authorities having jurisdiction will be accomplished; 7) procedures that will be used to coordinate with other concerned agencies; 8) how the public will be informed prior to, during, and after the burn; 9) actions to enhance the active fire phase and reduce the smoldering phase; 10) actions to validate predicted smoke dispersal conditions; 11) alternative disposal options for material being open burned. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • For land clearing, the applicant may be required to obtain meteorological information for the burn day, specifically wind speed, wind direction, and ceiling level, both for the start of the burn and forecasted for the duration of the burn. If the wind direction would allow smoke to impact on sensitive areas, burning may be denied for that period. [1] • Except for firefighter training, open burning of materials in a way that gives off black smoke is prohibited without written DEC approval. The person who conducts open burning must establish reasonable procedures to minimize adverse environmental effects and limit the amount of smoke generated. [1] • Open burning is prohibited between November 1 and March 31 in a wood smoke control area. [1]
13. Must the affected public be notified of planned	<ul style="list-style-type: none"> • All approved fires require public notice unless it is waived in writing due

fires? Please describe.	<p>to burn area remoteness. [2]</p> <ul style="list-style-type: none"> • A person required to provide public notice of open burning must issue the notice through the local news media or by other appropriate means if the area of the open burning does not have local news media. The public notice must be issued as directed by the DEC and must: state the name of the person conducting the burn; provide a list of material to be burned; provide a telephone number to contact the person conducting the burn before and during the burn; and the expected time, date, and location of the open burning. [1]
<p>14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?</p>	<ul style="list-style-type: none"> • Each prescribed burning applicant will have an operational plan of action documenting contingency actions to follow if prescriptive conditions are exceeded. [1] • If the DEC declares an air quality advisory, it will (1) require that the burn be extinguished immediately; (2) suspend all new ignitions in the area; (3) request voluntary emission curtailments from any person issued a permit whose facility's emissions might impact the area subject to the advisory; and (4) publicize actions to be taken to protect public health. [1], [2] • Limitations may have to be placed on the burn for easy shutdown. [1] • Placing limitations on all burns is part of the contingency plan. If a burn is not easily extinguished, then it is not of a manageable size and is therefore not under control. Failure to be able to extinguish a burn may result in enforcement actions. [2]
<p>15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?</p>	<ul style="list-style-type: none"> • The DEC will, in its discretion, declare an air episode and prescribe and publicize curtailment action when the concentration of an air contaminant in the ambient air has reached, or is likely in the immediate future to reach established concentrations. [1] • The term "established concentrations" is a misnomer because we only have monitors in four towns. We use visibility and public complaints in other areas to determine when a burn needs to be extinguished. We have the ability to monitor PM10 in emergencies, but funding and staff are limited. We have a new group organized specifically for monitoring of water and

	<p>air. We follow EPA SOP requirements. [2]</p> <ul style="list-style-type: none"> • Concentrations are established in the rules for three episode types and four air contaminants. The episode types are: Air alert, Air warning, or Air emergency. The contaminants are: sulfur dioxide, PM10, PM10 from wood burning (wood smoke control areas), and carbon monoxide. (Please see table at the end of this survey for the concentrations triggering an air episode) [1] • Concentrations for PM2.5 will be added after the data collection period is concluded. [2]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Public education and outreach is a large part of SMP and air compliance. DEC policy is geared more toward public education versus enforcement. Programs are usually focused for specific air criteria for specific locations (i.e. wood stove smoke and wood stove program for Juneau). Elements consist primarily of fact sheets, special pamphlets, media stories, and websites. The television and newspaper media have been very helpful in assisting DEC with air quality issues and educating the public. DEC policy is to focus on “customer service” to best serve the public. Open burn approvals for large prescribed burns require public meetings and newspaper notification prior to ignition, as well as “interpreters” near the burn. This decreases public complaint calls and encourages interaction with the public. [2]
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Public complaints generally “monitor compliance” during controlled burns. A good working relationship between DEC and land managers has greatly assisted compliance and emission reduction techniques. Alaska is in the process of developing a SMP which will have criteria outlining compliance requirements for the program. Should these criteria fail to adequately protect public health, the Air Quality Committee of the Alaska Wildland Fire Coordinating Group (which is chaired by DEC) will re-evaluate the criteria and make additional requirements as needed. [2]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Response to a “Notice of Violation” (NOV) is usually all that is required in order to ensure that the permittee prevents the incident from recurring. [2]

19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Burn reports are submitted for controlled burns when they are available, although very little post-burn evaluation is done in the state. The Alaska SMP will outline the process for reporting post-burn information. Burn tracking and emission estimates are needed from all burners. DEC will try to encourage post-burn reporting as much as possible. [2] • For land clearing, a summary report listing types of fuels and quantities burned, days burning occurred, and the meteorological conditions during the burn may be required by the DEC as part of the approval conditions. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	• Not applicable
21. What are the review criteria?	• Not applicable.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	• The Alaska SMP will describe criteria for "sensitive area" designation, including Class I areas, hospitals, airports, etc. Additional smoke management requirements for burns that may impact sensitive areas are always addressed by the burner in their burn plans. [2]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	• Not applicable.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	• Not applicable.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Nuisance regulations apply to prescribed fires, but not to prescribed natural fires. Criteria for establishing a "nuisance" includes documentation from a safety or health authority in the area, photos, and number of complaints (particularly those with health effects). [2] The director may suspend or prohibit open burning at any time based on air quality considerations, or, upon consultation with the fire chief, for fire safety reasons.^a
26. Is the smoke management program, or the	• Not applicable

regulations authorizing the program, part of the State's implementation plan (SIP)?	
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	The fire chief shall establish guidelines and may establish an appropriate fee schedule for the issuance of written permits authorized under this section. ^a
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	Local districts do not.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• Not at this time. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• Not applicable
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	The use of herbicides on federal lands is usually addressed in their EIS/EAs if they are using it. The ADEC does not have any specific AQ regulations regarding the use of herbicides, except that they not create a nuisance or public/env threat. Pesticide definition includes the term herbicide. No one shall apply a pesticide in a manner that results in pesticide drift; or apply when the wind speeds exceed the maximum wind speed stated in the labeling; or seven miles per hour, if no wind speed is stated in the labeling; pesticides must be applied over the target area and at the customary height for the target; emergency dumping is allowed but must be reported. ^b
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for	The ADEC does not have any specific AQ regulations regarding the use of herbicides, except that they not create a nuisance or public/env threat.

<p>vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?</p>	<p>Biological (grazing?) Veg mgmt is generally not done here. Any manual veg mgmt/removal is greatly encouraged by ADEC, and will be tracked in the SMP as an alternative to burning (decreasing emissions).</p>
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Appendix 3

State of Arizona Survey Responses

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Communication with AZ DEQ 3/26/02. All answers from original 2000 survey stayed the same.

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

[1] Rules for Smoke Management Program. Arizona Department of Environmental Quality, Air Quality Assessment Section. Title 18, Chapter 2, Article 15, available at: <http://www.adeq.state.az.us/environ/air/assess/smp.html>.

[2] Comments received from Arizona Department of Environmental Quality dated August 20, 1999.

[3] Comments received from Arizona Department of Environmental Quality dated September 14, 2000.

Other available information:

- Electronic copies of the Burn Plan Form, Burn Request Form, and a Burn Accomplishment Form are also available at <http://www.adeq.state.az.us/environ/air/assess/smp.html>.
- Electronic copies of the Arizona Administrative Code, guidelines, and permit application form regarding open burning are available at www.adeq.state.az.us/environ/air/permit/openburn.html.

Special Note:

- This survey was reviewed by the Arizona Department of Environmental Quality. For more information, contact Mark Fitch, AZ DEQ, Air Quality Division, 3003 N. Central Avenue, Phoenix, AZ, 85012-2905.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	• The Department of Environmental Quality (DEQ) has the central authority to make burn/no burn decisions on state/ federal wildlands or burns on private lands assisted by state/ federal land managers. The DEQ has no authority on tribal lands in Arizona. [1][3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	• The DEQ may enter into a memorandum of agreement with any Indian tribe. [1] • Provide interest posting of burn approvals (state site and SWICC). [3] • There are no formal MOUs. [3] • Will call New Mexico if there is a large burn near the border. [3]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	• Federal and state land managers are required to conduct prescribed burning according to Arizona Administrative Code, R18-2 Article 15 which applies to all areas of the state except Indian Trust lands. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	• Prescribed/controlled burning of forest and rangeland fuels on federally managed lands and all state lands, parks and forests. [1][3]

	<ul style="list-style-type: none"> • Prescribed natural fires (wildland fire that is ignited by natural causes and allowed to continue burning using the same controls as for prescribed burning) projected to attain a size of 50 acres of timber fuel or 250 acres of brush or grass fuel. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Each year land managers must register with the DEQ all planned burn projects for the following year. Each planned year extends from August 1 of the registration year to July 31 of the following year. Managers should register burn projects before August 1 of each year. [1] • Next, the manger must submit a Burn Plan form to DEQ no later than 14 days before the date on which the manager requests permission to burn or have a burn plan on file from the previous year. [1][2] • Lastly, the manager must complete and submit to DEQ a Burn Request form by 2 p.m. local time of the business day preceding the burn day. [1][2][3] • The DEQ then makes a decision on the request issuing by 5 p.m. of the business day prior to the burn day, a notice of approval, approval with conditions, or disapproval. [2]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The manager must have registered with the DEQ, submitted a Burn Plan form (no later than 14 days before the manager requests permission to proceed with a registered burn project), and submitted a Burn Request form (by 2 p.m. of the business day preceding the burn). [1] • The DEQ will evaluate a burn on based on a smoke dispersion evaluation which considers the following: (1) emissions from burns in progress and previous burns on a day-to-day basis, (2) emissions from active prescribed natural fires, (3) emissions from wildfires greater than 100 acres, (4) local burn conditions, (5) burn and smoke management prescriptions from the Burn Plan, (6) Local air quality, (7) Local meteorological conditions, (8) Type and location of area to be burned, (9) Protection of visibility in Class I Areas, and (10) Smoke impacts in Class I Areas, roads, highways, airports, PM and carbon monoxide non-attainment areas. [1][2] • The DEQ will approve, approve with conditions, or disapprove a burn on the same business day as the Burn Request submittal based on the

	<p>DEQ's Smoke Dispersion Evaluation. [1]</p> <ul style="list-style-type: none"> • The manager must receive burn approval from the DEQ, however if the manager does not receive approval by 10 p.m. of the business day preceding the burn, the burn is deemed approved. [1] • All burns must be conducted by trained personnel. Requirements are stated in the rule. [1][2]
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<ul style="list-style-type: none"> • The smoke management program rules are applicable only to Federal and state land managers. [1] Therefore, the program rules are essentially an operating agreement between the DEQ and the Federal and State land managers. • Indian tribes may opt to enter into a memorandum of agreement to implement the program rules. [1] • Interagency Agreement for the Air Resource and Interagency Smoke Management Program establishes the Interagency Smoke Management Coordinator (ISMC) and the assistant ISMC at DEQ. [3] • All burns must be conducted by personnel trained in prescribed fire and smoke management techniques to the minimum level required by the Federal or state land manager in charge of the burn. [1] • A Prescribed Fire Manager or other local Fire Management Officer of the Federal or state land manager having jurisdiction over prescribed burns must have smoke management training obtained through either 1) completion of a National Wildfire Coordinating Group or Federal/state land manager-equivalent course dedicated to smoke management or 2) attendance at an DEQ-approved smoke management workshop. [1]
Minimizing Air Pollutant Emissions	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<ul style="list-style-type: none"> • DEQ tracks FLM NEPA documents for this purpose. [3] • The regulations do not discuss specific alternatives to fire as a land management tool; however, one of the BMP that managers must consider is reducing biomass by using techniques such as yarding or consolidation of unmerchandisable material, multi-product timber sales or public firewood access, when economically feasible. [1] • The SMP does not discuss incentives or disincentives for burning alternatives and emission reduction techniques. • Yes, emission reductions are tracked qualitatively. On or before August

	15 of each year, each Federal or state land manager must submit to DEQ a report generally describing the emissions reductions for each project from the previous year as a result of using BMP. [1]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The manager must implement as many best management practices (BMP) for emission reduction as are feasible for the specific burn. A list, of 15 measures considered BMPs, is included in the program rules. See attached pages B-7 and B-8 for the list. [1] • The Burn Accomplishment form must include the BMPs used to manage smoke from the burn. [1] • If weather conditions cease to conform to those in the smoke management prescription of either the Burn Plan or an approval with conditions, the Federal or state land manager must cease ignitions and take appropriate action to reduce further smoke impacts, unless after consultation with the DEQ, the smoke management prescription is modified. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The manager must implement as many BMP for emission reduction as possible for the specific burn and include the techniques used in the Burn Accomplishment report. [1] • Data is used to develop a database to qualitatively track emission reductions. [3]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • The manager must complete and submit to DEQ a Burn Plan form no later than 14 days before the date on which the manager requests permission to burn. The Burn Plan form must contain (1) an emergency telephone number that is answered 24 hours a day, (2) burn prescription, (3) smoke management prescription, (4) the number of acres to be burned, the type of fuel and the ignition technique to be used, (5) a map depicting the potential impact of the smoke. (6) modeling of smoke impacts for burns greater than 250 acres in size or greater than 50 acres in size if within 15 miles of a Class I Area, (7) the name of the official submitting the burn plan on behalf of the Federal or state land manager, and (8) any other information needed by the DEQ. [1] (See web site for approved form for burn plans.) [3] • A burn plan must also be submitted for a prescribed natural fire. [1]

<p>12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”</p>	<ul style="list-style-type: none"> • The burn plan must include 1) a map depicting the potential impact of the smoke and a map, with smoke sensitive areas delineated, of the daytime and nighttime smoke path and down-drainage flow for an area of 15 miles from the burn site and 2) modeling of smoke impacts for burns greater than 250 acres per day, or greater than 50 acres per day, if the burn is within 15 miles of a Class I Area, a PM or carbon monoxide non-attainment area, or other smoke sensitive area. [1] • DEQ will approve, approve with conditions, or disapprove a burn by evaluating the following factors: (1) emissions from burns in progress and residual emission from previous burns on a day-to-day basis, (2) emissions from active prescribed natural fires and consideration of potential long-term emissions, (3) emissions from wildfires greater than 100 acres and consideration of potential long-term growth, (4) local burn conditions, (5) burn and smoke management prescription from burn plan, (6) existing and predicted local air quality, (7) local and synoptic meteorological conditions, (8) type and location of areas to be burned, (9) protection of the national visibility goal for Class I Areas, and (10) minimization of smoke impacts in Class I Areas, roads or highways, airports, PM and CO non-attainment areas, and other smoke-sensitive areas. [1] • The DEQ may require the manager to monitor weather and air quality before or during a prescribed burn to accurately predict smoke impacts. [1] • For burns greater than 250 acres per day, or greater than 50 acres per day if the burn is within 15 miles of a Class I Area, a PM or carbon monoxide non-attainment area or other smoke sensitive area, the manager must employ the following types of monitoring to predict smoke impacts: (1) The release of pilot balloons at the burn site to verify needed wind speed, direction or stability, (2) Establishment of burn site or area-representative remote automated weather stations (RAWS) or their equivalent, having telemetry that allows retrieval on a real-time basis by the DEQ, and (3) Smoke plume measurements using a format supplied by the DEQ. [1]
<p>13. Must the affected public be notified of planned</p>	<ul style="list-style-type: none"> • Information on approved burns is available on the internet. [2]

fires? Please describe.	<ul style="list-style-type: none"> • Local land management agencies have lists of contacts/concerned public they communicate with when burning. • Most agencies also use local radio to inform the public of fire activity. [2]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • For prescribed natural fires, consultation with DEQ is required if smoke intrusions occur or are predicted. [2] • For prescribed fires, land managers report smoke impacts on the accomplishment form and are trained to communicate to DEQ when smoke intrusions occur. The ISMC tracks the status of burns and smoke effects through public complaints and direct interaction with the burners. [2]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The DEQ may require Federal or State land managers to monitor weather and air quality before and during a burn if necessary to accurately predict smoke impacts. • For burns greater than 250 acres per day, or greater than 50 acres per day if the burn is within 15 miles of a Class I Area, an area that is non-attainment for PM or carbon monoxide, or other smoke-sensitive area, monitoring must employ: (1) the release of pilot balloons at the burn site to verify needed wind speed, direction or stability, and (2) smoke plume measurements. [1] • The DEQ may use remote automated weather station (RAWS) data to verify current and previous meteorological conditions at or near the burn site. [1] • The manager must make the monitoring information available to the DEQ on the business day following the burn ignition. [1] • The number and location of public complaints are used to monitor air quality impacts of fires. [2] • DEQ has required PM monitoring on some burns. [3] • No trigger points beyond NAAQS. [3] • Public complaints affect decision making. [3] • DEQ is establishing monitoring sites with real-time telemetry to track air quality conditions and smoke effects. [3]
Public Education and Awareness	
16. Has a public education and awareness program	<ul style="list-style-type: none"> • The DEQ and Federal and State land managers may cooperate to

<p>been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?</p>	<p>inform the general public of the smoke management program. The program must include smoke impacts from prescribed fire and the role of prescribed fire in natural ecosystems. [1]</p> <ul style="list-style-type: none"> • The SMP does not elaborate any further than described above on the issue of public education and awareness. • No public education program established currently. [3] • Internet posting and field offices inform public where to go for information on burning activity. [3] • ARS 18-2-15 went through formal Arizona rulemaking which includes public hearings. [3] • No ongoing public outreach beyond web-site. [3]
<i>Surveillance and Enforcement</i>	
<p>17. What actions can be taken by the central authority to monitor compliance with the smoke management program?</p>	<ul style="list-style-type: none"> • The DEQ may conduct unannounced burn site inspections to verify the accuracy of Daily Burn request data and to match burn approval with actual conditions and smoke dispersion. [1] • The DEQ may use remote automated weather station data to verify current and previous meteorological conditions at or near the burn site. [1] • The DEQ may audit burn accomplishment data, smoke dispersion measurements, or weather measurements from previously conducted burns, if necessary to verify conformity with, or deviation from, procedures and authorizations approved by DEQ. Deviation from DEQ's procedures and authorizations constitute a violation of the rules; violations may include a 5-day moratorium on ignitions by the responsible manager. [1] • Aerial surveillance is frequently used to monitor compliance and DEQ will use monitoring sites to verify impacts. [2][3]
<p>18. What penalties are authorized for non-compliance?</p>	<ul style="list-style-type: none"> • Noncompliance may cause (1) containment or mop-up of any active burns, (2) a 5-day moratorium on ignitions of the responsible party, and (3) civil penalties of not more than \$10,000 per day per violation. [1]
<p>19. Are post-burn reports required? What information is required?</p>	<ul style="list-style-type: none"> • For each burn approval, the manager must submit a Burn Accomplishment form by 2 p.m. of the business day following the approved burning. [1] • The Burn Accomplishment form must contain (1) any known conditions

	or circumstances that could impact the daily burn decision process, (2) subsequent acreage accomplishments, and (3) the BMP used to manage the smoke from the burn. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The regulations do not specifically include provisions to periodically review their effectiveness; however, the DEQ maintains a record of Burn Requests, Burn Approvals/Conditional Approvals/Denials and Burn Accomplishments for 5 years. [1] • Complaints about smoke from burning are tracked and investigation of complaints is required to determine the cause of complaint. [2] • Program assessment occurs through annual evaluation of ISMC position. Daily interactions between DEQ and land managers through the coordinator keep program review on a constant basis. [2]
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Smoke-sensitive areas must be delineated on a map (included in the Burn Plan) depicting the potential impact of the smoke for 15 miles from the burn site. [1] • The Burn Plan requires modeling of smoke impacts for burns greater than 50 acres per day, if the burn is within 15 miles of a Class I Area, roads, highways, airports, areas that are non-attainment for PM and carbon monoxide and other smoke-sensitive areas. [1] • The DEQ will approve, approve with conditions or disapprove a daily Burn Request based on a DEQ Smoke Dispersion Evaluation which takes into consideration protection of the national visibility goal for Class I Areas pursuant to 169A(a)(1) of the Act, and minimization of smoke impacts in Class I Areas, roads, highways, airports, areas that are non-attainment for PM and carbon monoxide and other smoke-sensitive areas. [1]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Operationally, prevention of consecutive day smoke impacts of sensitive areas are the goal of the decision making process. [2]
24. What additional smoke management requirements apply if the performance standards	<ul style="list-style-type: none"> • Generally results in disapproval of subsequent day burn request. [3]

have been exceeded?	
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Yes, we use complaints from the public as the criteria to establish that smoke from a prescribed or prescribed natural fire is a nuisance. [2] [3] • DEQ tracks these complaints, as a mean to review how well the program is working. [2] • Number of complaints is not a trigger—individual occurrence and nature of complaints, external verification of conditions is also used prior to action. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Arizona's SMP is part of our Payson PM10 SIP. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • DEQ does not use fees to run our program. [2] • The budget for DEQ Program comes from a MOA with Fed/State land managers, and the State. [2] • Program has grown as areas requested have grown. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • DEQ tracks burning actions on a daily basis. [2] • From post burning reports, due within 24 hours of the burn, DEQ calculates the PM10 emissions from each burn. [2] [3] • DEQ uses: acres burned, fuel moisture, fuels <3" in diameter, fuels > or equal to 3" in diameter, fuel type and AP42 emission factors to calculate air pollutant emissions. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • We do not have a way to quantitatively track this information at this time beyond qualitative tracking of BMP use. [2] [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Yes, Fall of 2000. [3]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or	No.

ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From communication with Maricopa County, Arizona 4/26/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Maricopa County, Arizona
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	REQUIRE ALL FIRE DISTRICTS TO APPROVE ALL PERMITS AND AUTHORIZE EACH BURN ON THE DAY OF THE BURN NO MOU’S
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	NO NO
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	AIR CURTAIN DESTRUCTOR, DANGEROUS MATERIAL,DITCHBANK,FENCE ROW,TUBBLE WEEDS,LAND CLEARANCE
5. How do land managers apply for authorization to burn?	APPLY FOR Maricopa County BURN PERMIT
6. What are the criteria for getting permission to burn?	MEET RULE 314 OPEN OUTDOOR FIRES AND SITE INSPECTION BY AIR QUALITY INVESTIGATOR
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	NO.NO YES
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to	RULE 314 REGULATING OPEN FIRES AND PERMIT FEES

burning and emission reduction techniques? Are emission reductions tracked?	
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Restrict material types that are authorized to burn. (no trash etc.) Restriction of burns while air stagnation advisories are in effect and during higher carbon monoxide and particulate concentrations from ambient air monitoring network.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	No.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	No
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	National weather service forecast. Visibility and pollutant concentrations track each other. So poor visibility and high pollution concentrations would limit burn authorizations. No visibility does not solely impact burn/no burn.
13. Must the affected public be notified of planned fires? Please describe.	No
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Operator must limit smoke from burn. Emissions must be below 20 percent opacity.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	Fire no directly monitored. Monitoring done by Maricopa County . Monitoring for CO, NO2, SO2, PM10, PM2.5, Ozone. WS&D Baro, Hum. Thresholds are the National Ambient Air Quality Standards. If thresholds are approached a no burn day will be issued.
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file	Public awareness program in place. Workshops and internet. Complaint line to file all complaints. A public outreach program to develop SMP

complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis? Compliance officer investigations	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Field compliance officers
18. What penalties are authorized for non-compliance?	Notice to Appear, Notice of Violation
19. Are post-burn reports required? What information is required?	NO
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	Yes
21. What are the review criteria?	Information sharing with local fire districts about current operating permits
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Protection zone would be determined by location of fire near community
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No
24. What additional smoke management requirements apply if the performance standards have been exceeded?	None
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	No no Any complaint and the observation of smoke and opacity

26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	yes
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	Federal grant
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	No
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	No
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	No
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	Unknown
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	None.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From communication with Pinal County AQCD, Arizona 4/2/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Pinal County Air Quality Control District (PCAQCD)
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	PCAQCD has a delegation of agreement from the State of Arizona
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	There is no smoke management program for land managers. Each burn permit has a list of conditions for burning.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Open burning permits cover residential, commercial, agricultural, training exercise fires, building demolition, and destruction of hazardous materials.
5. How do land managers apply for authorization to burn?	Submit an application by mail, phone, or in person.
6. What are the criteria for getting permission to burn?	Prior written approval from the fire department/district having jurisdiction, verify that there is not a “no burn restriction” in force, follow conditions in permit. Arizona Guidelines for Open Burning.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	No
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or	PCAQCD is currently in the process of increasing the open burning permit fees so that other alternatives will be considered, such as

disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	chipping, composting or land filling. We are beginning to track emission reductions by the number of burn permits issued.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Allowable burn times are 9:00 a.m. to 4:30 p.m. Wind speed range must be between 5 mph and 15 mph. All burning extinguished during periods of inadequate atmospheric smoke dispersion, periods of excessive visibility impairment, or periods when smoke is blown into populated areas.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	No
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	No
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	At the discretion of the Control officer
13. Must the affected public be notified of planned fires? Please describe.	No
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	No – all burning must be extinguished
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	No
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of	No

your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	N/A
18. What penalties are authorized for non-compliance?	Class I Misdemeanor (\$250.00/day)
19. Are post-burn reports required? What information is required?	No
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	No
21. What are the review criteria?	N/A
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Currently, PCAQCD is considering implementing a burn ban during the winter inversion season in areas of "near nonattainment." No additional smoke management requirements apply.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No
24. What additional smoke management requirements apply if the performance standards have been exceeded?	N/A
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes No At the Control officer's discretion

26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	No
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	Permit fees for open burning
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	The state includes the emissions in the emission inventory.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	None No
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	N/A
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	Only the requirements of the Arizona Department of Agriculture (no specific air quality regulations – just aircraft application requirements, etc.)
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	Only the requirements of the Arizona Department of Agriculture (no specific air quality regulations).

Appendix 4

State of California Survey Responses

**Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”
EC/R Incorporated - January 26, 2001**

**From Communication with Mr. George Ozanich of NSAQMD on 3/28/02 (Mr. Ozanich answered for California Air Resources Board-CARB)
Smoke Management Program Components Regarding Vegetative Management**

[1] Title 17, Smoke Management Guidelines, California Code of Regulations, March 14, 2001.

[2] Comments received from CARB, November 9, 2000

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Air Resources Board (ARB) will specify each day of the year as a permissive burn day, or a no-burn day for each air basin or other specified area. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The Smoke Management Guidelines for Agricultural and Prescribed Burning (Guidelines) provide direction to air pollution control and air quality management districts (air districts) in the regulation and control of agricultural burning, including prescribed burning, in California. [1] • Each air district must adopt a smoke management program (SMP) consistent with the Guidelines. The Guidelines are intended to provide flexibility to air districts in the development and implementation of their smoke management programs. [1] • In general, by September 1, 2000, all air districts must implement the prescribed burning elements of their programs and, by July 1, 2001, all air districts must adopt SMPs. Program approvals will be made by the ARB.[1] • Two or more air districts choosing to implement a regional SMP must execute a MOU that sets forth procedures for the coordination, implementation and enforcement of shared responsibilities. The MOU must describe the following: a list of district and region boundaries; participating federal and/or state land managers, and other local entities within the region; the decision-making structure of the regional SMP; and the joint workplan for implementing the regional SMP. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Each air district must adopt a smoke management program (SMP) consistent with the Guidelines. Each air district or region shall develop its SMP in coordination with the ARB and appropriate fire protection agencies, the land managers having jurisdiction within the district, any

	<p>other affected parties, and the public. [1]</p> <ul style="list-style-type: none"> • The Guidelines are not intended to permit open burning on days when such burning is prohibited by public fire protection agencies for purposes of fire control or prevention. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The Guidelines regulate agricultural burning, which includes prescribed burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • A valid permit must be obtained from a district or designated agency prior to burning. Each applicant for a permit must provide information requested by the district and the designated agency. [1] • Air district SMPs must include procedures for acquiring information on amounts of material burned on each day, on planned and unplanned wildfires, and other information needed to establish the burn authorization for the following day. [1] • Air district SMPs must require registration of all planned burn projects annually or seasonally, including areas considered for potential naturally-ignited wildland fires managed for resource benefits, with updates as they occur. • Air district SMPs must require submission of smoke management plans (burn plans) within 72 hours of the start of the fire for naturally-ignited wildland fires managed for resource benefits that are expected to exceed 10 acres.[1] • Air district SMPs must require the permit applicant to file with the district a statement from the Department of Fish and Game certifying that the burn is desirable and proper if the burn is to be done primarily for improvement of land for wildlife and game habitat. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The ARB will announce by 3:00 p.m. every day for each of the state's air basins or other specified areas whether the following day is a permissive burn day or no-burn day, or whether the decision will be announced on the following day. If conditions preclude a forecast until the next day, the decision will be announced by 7:45 a.m.[1] • Burning must comply with all conditions specified on the permit, which must have district approval consistent with the Guidelines. [1] • An air district may, by special permit, authorize burning on days designated by the ARB as no-burn days if the denial of such permit

	<p>would threaten imminent and substantial economic loss. [1]</p> <ul style="list-style-type: none"> • Air district SMPs must include procedures for authorizing burning, including a procedure for authorizing individual prescribed burns no more than 24 hours prior to ignition of fire. [1] • Air district SMPs must require district review and approval of smoke management plans (burn plans). [1]
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<ul style="list-style-type: none"> • Air district SMPs must require, as appropriate, daily coordination between the land manager or his/her designee and the air district or the ARB for multi-day burns which may impact smoke sensitive areas, to affirm that the burn project remains within the conditions specified in the smoke management plan (burn plan), or whether contingency actions are necessary. [1]
<i>Minimizing Air Pollutant Emissions</i>	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<ul style="list-style-type: none"> • Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of non-burn alternatives. [1] • Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain an evaluation of alternatives to burning considered. [1]
<p>9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?</p>	<ul style="list-style-type: none"> • In the case where, by special permit, an air district authorizes burning on days designated by the ARB as no burn days, a district will limit the amount of material which can be burned in any one day and only authorize burning which is not likely to cause or contribute to exceedences of air quality standards or result in smoke impacts to smoke sensitive areas. [1] • Air district SMPs must include a daily burn authorization system that regulates burning in order to minimize smoke impacts on smoke sensitive areas, avoid cumulative smoke impacts, and prevent public nuisance. [1] • Air district SMPs must include procedures for addressing cross-jurisdictional smoke impacts by coordinating with neighboring air districts, regions, or states. [1] • Air district SMPs must provide plans for analysis and periodic

	<p>assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices. [1]</p> <ul style="list-style-type: none"> • Air district SMPs must provide, if necessary, procedures for prioritizing burning that districts can use to minimize smoke impacts. Efforts to reduce smoke emissions must also be considered. [1] • Air district SMPs must require vegetation to be in a condition that will minimize the smoke emitted during combustion when feasible. [1] • Air district SMPs must require material to be burned to be piled where possible, unless good silvicultural practices or ecological goal dictate otherwise. [1] • Air district SMPs must require piled material to be burned to be prepared so that it will burn with a minimum of smoke. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Districts SMPs must include plans to provide for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [2]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Air district SMPs must require the submission of smoke management plans for all burn projects greater than 10 acres or estimated to produce more than one ton of particulate matter. These plans must contain, at a minimum, the following information: location, types, and amounts of material to be burned; expected duration of the fire from ignition to extinction; identification of responsible personnel, including phone contacts; and identification and location of all smoke sensitive areas. [1] • Air district SMPs must require the submission of more detailed smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain the information above and the following additional information: identification of meteorological conditions necessary for burning; the smoke management criteria the land manager or his/her designee will use for making burn ignition decisions; projections, including a map, of where the smoke from burns is expected to travel; specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan; an evaluation of alternatives to burning considered; and discussion of public notification

	procedures. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Air district SMPs must include a daily burn authorization system that will not allow more burning on a daily basis than is appropriate for the meteorological or air quality conditions. Meteorological conditions to be evaluated include wind speeds and directions at the surface and aloft, and atmospheric stability. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain discussion of public notification procedures. [1] • Air district SMPs must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Air district SMPs must include a description of the meteorological and air quality monitoring data to be used to provide data for determining the basinwide meteorological and air quality conditions. [1] • Air district SMPs must require smoke management plans (burn plans) to include appropriate monitoring as required by the district for the following burn projects: projects greater than 250 acres; projects that will continue burning or producing smoke overnight; projects conducted near smoke sensitive areas; or as otherwise required by the district. [1]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP?	<ul style="list-style-type: none"> • Air district SMPs must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1] • The ARB has established a working group which will develop recommendations for public education and outreach efforts. The ARB also has a web site where information relating to ARB's smoke management program is posted. [2]

What is done on an ongoing basis?	<ul style="list-style-type: none"> • The revisions to Title 17 (ARB's smoke management guidelines) went through an extensive public outreach process, including three program scoping sessions, 15 workshops, and 23 meetings with affected stakeholders. [2]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Air district SMPs must include procedures for enforcement. The Guidelines do not further elaborate on enforcement procedures. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Air district SMPs must include procedures for enforcement. The Guidelines do not further elaborate on enforcement procedures. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • A report of burning conducted pursuant to the Guidelines each year must be submitted to the ARB by each air district. The report will include the estimated tonnage or acreage of each waste type burned from open burning in agricultural operations and the estimated tonnage of waste from prescribed burning, and the county where the burning was performed. [1] • When an electronic reporting system is established by the ARB, it will be used for providing reports of burning. • A yearly report of air district special permits, which authorize burning on days designated by the ARB as no burn days, must be submitted to the ARB by each air district. The report must include the number of special permits issued, dates of issuance, person(s) to whom the permit was issued, an estimate of the amount of wastes burned pursuant to the permit, and a summary of why denial of each permit would have threatened imminent and substantial economic loss. [1] • Air district SMPs must require a post-burn smoke management evaluation by the burner for fires greater than 250 acres. [1]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The Guidelines are intended to assure adequate state oversight, including initial program approval and periodic program assessment. [1] • Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [1]
21. What are the review criteria?	See Question 20.

Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Burns greater than 10 acres must identify the location of smoke sensitive areas. [2]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The ARB's smoke management program provides a collaborative framework to provide for increased opportunities for managed burning while allowing California to meet health-based air quality standards and federal visibility requirements. No specific "performance standards" however have been adopted. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Not applicable. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The State and many local counties do have nuisance regulations which apply to smoke impacts from prescribed and agricultural burning. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • The districts' current smoke management rules are included as part of the SIP. New rules adopted due to the new requirements of the revisions to Title 17 will supersede the old rules when new PM and regional haze SIPs are submitted. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Costs associated with implementation and operation of the SMP are addressed by individual districts. As provided by State law, districts can recover costs associated with the compliance with State requirements by fees on sources that engage in burning through permit fees. The structure for assessing fees varies by district. The ARB is also committed to working with all stakeholders, including districts and affected sources, to fund the SMP and is developing funding proposals to provide technical and monitoring support. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the	<ul style="list-style-type: none"> • The State compiles estimates of prescribed burning emissions. These estimates are computed by local districts. The level of effort and completeness of these estimates varies. All of the districts compile

emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	annual estimates, but these estimates are not necessarily updated each year. Generally the emission estimates include seasonal profiles which can be used to apportion annual emissions by month based on historical burning trends. Daily estimates are not computed. In most regions, prescribed fire emissions are based upon either permitted acreage, or post burn annual summaries. It is not yet common practice to base emission estimates on fire-specific post-burn reports that include information on fuel type, condition, and consumption. However, the State is involved in efforts to substantially improve the completeness and uniformity of prescribed burning emission estimates. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Not at the current time. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Information not provided.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	None.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	None.

Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From communication with AMADOR COUNTY APCD, California 3/22/02

Smoke Management Program Components Regarding Vegetative Management

AMADOR AIR DISTRICT (AKA AMADOR COUNTY APCD) RESPONSES 3/22/02

KAREN HUSS – 209-257-0112

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	The California Air Resources Board makes the initial burn day decision. Fire agency information is taken into account during fire season by the local air district. The local air district can also be more stringent than the California Air Resources Board if local conditions necessitate. The local air district broadcasts the burn day decision over a telephone recording system for the general public. In addition, the local air district makes a daily authorization decision for each burn with an approved smoke management plan.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	The local air district informs adjacent air district each day when large burns are planned and authorized to begin. The burn agencies and the air districts (an Alliance with voluntary participation) in this air basin meet two times a year to discuss planned burns and coordinate implementation of the smoke management programs.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Land managers are required to participate in the smoke management program if their burning activities fall within the jurisdiction of the program. Burners not covered under the SMP are generally required to obtain a 1 page air district permit prior to burning.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural, forest management and wildland vegetation management activities.
5. How do land managers apply for authorization to burn?	There is a one page form included in the smoke management plan application that is used for daily authorization requests.
6. What are the criteria for getting permission to burn?	The daily authorization form must be submitted and all criteria in the smoke management plan application submitted and approved must be met, this includes meteorological conditions, special permits, etc.
7. Have operating agreements been established between the central authority and land managers?	No.

Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	This aspect of the smoke management program has not been fully developed. Emission reductions can be shown in the smoke management plan application.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Emissions are reduced by best management practices.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	The smoke management plan application form requests information regarding emissions. A post burn evaluation form is required for specific categories of burns. The goal is to use the information to learn what works and what doesn't work.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	SEE the smoke management plan application form attached to this questionnaire.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	SEE the attached form.
13. Must the affected public be notified of planned fires? Please describe.	Some public notification is required (different levels for different burns). SEE the attached form.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	SEE the attached form. The local air district or the burn agency can require implementation of the contingency plan if impacts are confirmed.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are	The local air district and the burn agency monitor impacts. Most monitoring is visual only to determine if the public is being impacted. No thresholds have been set.

taken if they are exceeded?	
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<p>No formal program has been established.</p> <p>This agency has tried to develop a smoke sensitive persons list to identify persons near potential burn projects that need advanced notice of a burn to allow them to leave the area or close their house up.</p> <p>This agency provides its telephone number on its burn/no burn day general information telephone recording.</p> <p>When the SMP was considered, it was publicly noticed. Additionally, the burn agencies were involved and allowed to comment prior to the air district's governing board approving the SMP. The California Air Resources Board had much more public involvement in developing the overall state requirements, which the air district based its program on.</p>
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	The California Air Resources Board staff are intimately involved in identifying the best meteorological conditions for burns being conducted in the air district. The air district is required to submit reports to the state regarding the SMP. The state can audit the air district operations at any time. The air district monitors burns and can take enforcement action if the smoke management plan is not followed or if a nuisance is confirmed.
18. What penalties are authorized for non-compliance?	There is a potential for monetary fines.
19. Are post-burn reports required? What information is required?	SEE the attached form.
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	Yes.
21. What are the review criteria?	None have been developed yet.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described?	Smoke sensitive receptors in general (not really an established zone). SEE the attached form.

What additional smoke management requirements apply in special protection zones?	
23. Does the program establish any performance standards? What are performance standards? How is performance evaluated?	There is no quantitative standard set. Qualitatively, a burn is successful if it accomplishes the natural resource objective without impacting smoke sensitive receptors (humans).
24. What additional smoke management requirements apply if the performance standards have been exceeded?	
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes. Complaint based criteria, documented/confirmed impacts. No set number has been established.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	Not sure about the state regulation. Some the local rules are probably included in the SIP.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	The air district utilizes its state funding to subsidize the program currently.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	An annual report of tons/acres of material burned is forwarded to the state for emissions inventory purposes.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	The burn agency does this as part of its smoke management plan application.

30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	I believe the state will do this. Timeline?
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	Not at the local air district level.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	Not at the local air district level.

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Communication with Bay Area AQMD, California 5/7/02

Smoke Management Program Components Regarding Vegetative Management

[1] Regulation 5: Open Burning, amended March 6, 2002

[2] Regulation 5 Open Burning Notification Form

[3] Open Burning Advisory-Prescribed Burning for Wildland Vegetation Management and Wildlife Management. Available at <http://www.baaqmd.gov/enf/compliance/burnchgs.htm>.

[4] BAAQMD Permissive Burn Periods-Summary Table. Available at <http://www.baaqmd.gov/enf/compliance/openburn.htm>.

[5] BAAQMD Open Burning. Available at <http://www.baaqmd.gov/enf/compliance/opnbntbl.htm>

[6] Help Keep the Air Clean-Open Burning Information (brochure)

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	The public officials who have the authority to approve a proposed burn are as follows: State Forester or Public Fire Official for range management (prior BAAQMD notification required), Fire Official for forest management, State Fish & Game for wildlife management, State or Federal Fire Official for wildland vegetation management prior BAAQMD notification required). [4][6] Any proposed burn may also be restricted by local fire or other officials. [5]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	The District coordinates with the California Air Resources Board (ARB). [1] For wildlife management, the CA Dept. of Fish and Game declares the fire necessary and provides the Air Pollution Control Officer (APCO) with the burn information. [1] The APCO coordinates with the CA Dept. of Fish & Game and the Solano County Mosquito Abatement District to extend the burn period in the event that heavy winter rainfall prevents burning. [1] For fires conducted within the boundaries of the Suisun Resource Conservation District (SRCD), the total daily acreage to be burned is determined by the APCO during the Fall Burning period. [1] There are not any formal MOU's in place at this time. BAAQMD staff

	<p>may also coordinate the approval of prescribed burn smoke management plans and inter-district notification of such burns with adjacent air districts when a proposed burn overlaps air district jurisdictions or when smoke from a burn may impact the air shed of an adjacent air district. This coordination would involve a discussion about concerns with the plan and possible conditions of approval for the plan.</p>
<p>3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?</p>	<p>To conduct a prescribed burn for wildland vegetation management, the burner must submit a prescribed burn plan to the APCO for review at least 30 calendar days prior to the proposed burning. The burn plan must include a smoke management plan. [1]</p> <p>Open burning is limited to days when air pollution caused by controlled fires would be minimized. [6]</p> <p>Yes. The "other" requirements are specified in District Regulation 5 and applicable to the allowable fire types other than Marsh Management and Wildland Vegetation Management fires.</p>
<p>4. What types of burning (agricultural, silvicultural, other) are covered by the program?</p>	<p>The regulations allow the following types of fires on permissive burn days: agricultural (disease and pest, crop replacement, orchard pruning, and attrition, double cropping), range management, forest management, wildlife management and wildland vegetation management. [1]</p> <p>Also see definition of prescribed burning in Regulation 5, Section 213 for fires greater than 10 acres subject to prescribed burning requirements. Smoke management requirements for all other types of burning (both agricultural and non-agricultural) are part of our open burning program and are specified in Regulation 5.</p>
<p>5. How do land managers apply for authorization to burn?</p>	<p>Before any fire is set, the burn must be authorized by the public official having jurisdiction in the burn area. A fire permit may also be required by local ordinances. [6]</p> <p>Generally a burn can only be allowed by the public official specified in Regulation 5 as having the authority to approve a fire <u>and</u> only by the public official having jurisdiction at the burn site. To get authorization, the land manager must obtain a written burn permit or receive verbal approval from the public official that can be documented.</p> <p>To conduct a prescribed burn for wildland vegetation management, the burner must submit a prescribed burn plan to the APCO for review at</p>

	<p>least 30 calendar days prior to the proposed burning and, prior to ignition, notify the APCO on the day of each burn. [1]</p> <p>Also, see Regulation 5, Sections 401.15 and 408 for prescribed burning.</p>
6. What are the criteria for getting permission to burn?	<p>An allowable burn day must be declared during the allowed time of year for the specific type of burn. [4][6]</p> <p>Note that three allowable fire types may be conducted on a no-burn day (see Section 5-401.7, 5-401.16 and 5-401.17)</p> <p>A burn can only be authorized by the public official specified in Regulation 5 as having the authority to approve a fire <u>and</u> only by the public official having jurisdiction in the burn area.</p>
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<p>No operating agreements with land managers have been established.</p> <p>No, there are not any specific District requirements for burner qualifications in our current open burning program or the SMP for prescribed burning and marsh burning. However, there is a prescribed burning requirement that in essence only allows a state or federal agency to conduct this type of fire, or when there is cooperative agreement or contract between the burner involving a state or federal agency (see Section 5-401.15).</p> <p>Yes, smoke management training is available in-house for District staff and fire agencies/land managers that conduct burns through our Industry Compliance School. Staff and land managers may also attend or participate in training sponsored by other entities.</p>
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<p>For prescribed burning, each prescribed burn plan is scrutinized to see if alternatives to burning were considered or already utilized. Prescribed burn applicants may also be queried over the phone regarding the necessity of a burn and the feasibility of alternatives given the accessibility of equipment to the burn site. One incentive for the use of alternatives to burning is the requirement for most of the allowable fires that the use of fire must be necessary to achieve the purpose of a proposed burn. In effect, this means that in authorizing a given burn, the public official determined that alternatives to burning were not practical or feasible. Another incentive is the authorization criteria specified in Section 5-401.6 for fire hazard reduction burns associated with CA</p>

	<p>Public Resources Code 4291. This regulatory language was developed to encourage the use of non-burning alternatives. Besides the applicable conditions in Section 5-111, additional requirements were added to several allowable fire types to ensure the use of emissions reduction techniques (e.g., see the limitations imposed on burning in Sections 5-401.5 and 401.13).</p> <p>In addition, under the SMP for prescribed burning a new provision require a prescribed burn smoke management plan to include an evaluation of alternatives to burning (see Section 5-408.1(j)). Emission reductions from the use of alternatives and emission reduction techniques are not currently tracked.</p>
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<p>No burning should take place before sunrise. [1] No additional materials or fuel should be ignited or added to a fire after 2 hours before sunset. [1] Wind velocity must be 5 miles per hour or greater except for crossfiring, or when the wind direction at the site would cause smoke to drift toward a populated area. [1] Piled material must dry for a minimum of 60 days prior to ignition. [1] Material to be burned must be free of dirt or soil. [1] Ignition material is limited to those listed by the State Director of Forestry and all fires should be ignited so as to burn as rapidly as possible. [1] Ignition must be initiated at or near the top of the piled material. [1] Tonnage, volume or acreage of material burned on any given day and/or at any specified site is subject to limitations set by the APCO, but may not exceed any limits set by the ARB. [1] In addition, District staff routinely imposes conditions of approval to prescribed burn smoke management plans for the purpose of minimizing emissions and impacts from prescribed burning activities.</p>
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<p>Yes, certain actions taken to minimize emissions from prescribed burns must be documented. For example, a requirement to record meteorological observations such as wind direction and air temperature is frequently imposed. The information may be used to document a violation of District requirements as part of an enforcement action, and to</p>

	evaluate the success or failure of a given burn project's prescription.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<p>Yes. Any person seeking to conduct a prescribed burn for wildland vegetation management must submit a prescribed burn plan to the APCO for review at least 30 calendar days prior to the proposed burning. The burn plan must contain the following information: location and specific objectives of the burn; acreage or tonnage, type, and arrangement of vegetation to be burned; direction and distances to nearby sensitive receptor areas; fuel condition, combustion and meteorological prescription elements for the burn; projected schedule and duration ignition, combustion and burn down; specifications for monitoring and of verifying critical parameters; specifications for disseminating project information; certification by a resource ecologist, biologist, or forester that the proposed burning is necessary to achieve the specific management objective(s) of the burn plan; and smoke management plan. [1]</p> <p>See also Section 5-408.1 for prescribed burning.</p>
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<p>For prescribed burns, the evaluation of smoke dispersion conditions depends on each prescribed burn smoke management plan. If the plan describes how the burner will evaluate smoke dispersion, then District staff will either approve the evaluation methodology or technique as proposed or conditionally approve the methodology by imposing specific conditions of approval of the plan. If the burn plan doesn't describe how the burner will evaluate smoke dispersion, then District staff will determine whether or not an evaluation is necessary. If staff determines that such an evaluation is necessary, then a requirement for the evaluation will be imposed through specific conditions of approval for the prescribed burn smoke management plan.</p> <p>Yes, the District's burn decisions do consider visibility and regional haze.</p>
13. Must the affected public be notified of planned fires? Please describe.	<p>Yes, one of the prescribed burn smoke management plan requirements in Section 5-408.1(g) states that the plan must include "specifications for disseminating project information to public." District staff's determination of the adequacy of the notification specifications provided in the plan depends on what the proposed specifications are and on other pertinent</p>

	components of the plan, such as the size and location of burn, distances and directions to smoke sensitive areas, the burn projects prescription, etc.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Yes (see Regulation 5, Section 401.8(h)). If there are smoke intrusions, the burner must implement the contingency actions specified in their approved prescribed burn smoke management plan.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	Yes. Section 5-408.1(f) states that the plan must include "specifications for monitoring and verifying critical parameters including meteorological conditions and smoke behavior before and during the burn." The extent of such monitoring depends on the individual prescribed burn plan, so the monitoring could range from only visual observations of the smoke plume to the use of continuous monitoring equipment for particulate matter and CO. The main threshold is a public nuisance. Five "confirmed" complaints are the minimum criteria for a public nuisance violation. A Notice of Violation may be issued and contingency actions should be enacted.
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<p>A public outreach effort for the new Regulation 5 requirements is currently being developed. Elements include press releases, compliance assistance advisories, public meetings with affected parties (local fire agencies, land managers, agriculture industry and trade associations), and the use of District web site. The BAAQMD has prepared a brochure titled "Open Burning Information" which includes the following: when to burn, an open burning calendar, a review of Regulation 5, information on open burning and air pollution, a list of telephone numbers for more information, the telephone number to call for burn/no burn day information. [6]</p> <p>The BAAQMD web site contains information that may be of interest to the public, including general burning information, Regulation 5 and a permissive burn periods summary table. The home page for the BAAQMD is available at http://www.baaqmd.gov.</p> <p>Bay area citizens can report illegal fires by calling the BAAQMD complaint hotline at 1-800-334-ODOR. [6]</p> <p>Previously the development process involved public workshops and</p>

	public hearings. The District's Compliance Assistance Program is on-going (e.g., Compliance Hotline, training).
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	District staff conduct inspections, respond to complaints, and take enforcement action as needed to monitor compliance.
18. What penalties are authorized for non-compliance?	Under state law, violations of the BAAQMD's open burning regulations may be subject to civil penalties of up to \$10,000 per day. [6] The District's Legal Division Mutual Settlement Staff states anywhere from \$500-1000 per violation, if violation occurs on a number of days the fine is multiplied by that base. Additional fines may be assessed for willful intent or negligence. Also if there is a compliance history, a surcharge will be applied.
19. Are post-burn reports required? What information is required?	For prescribed burning for wildland vegetation management the burner must provide, within 30 calendar days of the burn, the total acreage and the volume or tonnage of vegetation actually burned. [1] See Section 5-408.5 for prescribed burning.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	The program description has not been written yet, but the effectiveness of every District program is periodically reviewed, as needed.
21. What are the review criteria?	The criteria have not been determined yet, but possible criteria may include compliance rate, and the frequency and type of complaints and of incidents caused by smoke.
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	No. Point Reyes National Seashore has been designated a Class 1 area according to the federal regional haze regulations. But generally, any populated area that may be impacted by smoke emissions from open burning activities can be considered a special protection zone.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	N/A.

25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes. See answer to Question 15.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	No.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	The SMP is funded through a one time state subvention fund provided by ARB. For the upcoming fiscal year (FY02/03) and in subsequent years, staff anticipates that the SMP will be funded through District general fund expenditures until additional revenue sources are identified.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	The District does maintain an inventory for open burning activities. We do not currently maintain an emissions inventory specifically for prescribed burning, but plan to using information from prescribed burn smoke management plan (See Section 5-408.1(k) and (l)). Contact the State Air Resources Board for their emissions inventory information.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	No.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	Yes, the District is planning to have its SMP certified. Currently there is not a timeline.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated	No.

vegetation with herbicides?	
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Communication with Butte County AQMD 6/6/02

Smoke Management Program Components Regarding Vegetative Management

The answers for this survey are identical to the North East Air Alliance AQMD, per direction of Butte County Burn Program Manager.

Source of summary information:

[1] Northeast Air Alliance Smoke Management Plan.

[2] Comments received from USDA Forest Service, Quincy, CA on August 3, 2000 and Susanville, CA on September 22, 2000.

Special Notes:

- A smoke management plan is not required for prescribed burn projects less than 10 acres in size.
- This survey was reviewed by the USDA Forest Service. For more information, contact LouAnn Charbonnier, USDA-FS, 159 Lawrence Street, P.O. Box 11500, Quincy, CA, 95971, or Larry Hood, USDA-FS, Lassen National Forest, 2550 Riverside Drive, Susanville, CA, 96130.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The appropriate air district official approves or disapproves the smoke management plan, which is part of the overall burn plan review process. The smoke management plan serves as a conditional permit to burn, when used in conjunction with its standard single-page permit to burn. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none">• The smoke management plan is a cooperative agreement among the Northeast Air Alliance (NEAA) members. [1]• The NEAA coordinates with the appropriate air districts in review and approval of the smoke management plan. Individual air districts may require supplemental information if the proposed burn project is extremely large, likely to adversely impact smoke sensitive areas such as a Class I airshed, likely to have multi-jurisdictional smoke impacts, or contain other site-specific complexities which would require the need for further information. [1]• Region 5 has a MOU with the California Air Resource Board. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none">• A smoke management plan is required for all prescribed burn (forest management, range improvement and wildland vegetation management burning) conducted by land managers within the area encompassed by the NEAA. [1]
4. What types of burning (agricultural, silvicultural,	<ul style="list-style-type: none">• Forest management (described as the use of open fires as part of

other) are covered by the program?	<p>forest management practice to remove forest debris or for forest management practices which include timber operations, silvicultural practices, or forest protection practices), range improvement (described as the use of outdoor fires to remove vegetation for wildlife, game or livestock habitat or for the initial establishment of an agricultural practice on previously uncultivated land) and wildland vegetation management (described as the use of prescribed burning conducted by a public agency, or through a cooperative agreement with a private manager or contract involving a public agency, to burn land predominately covered by chaparral, trees, grass, or standing brush) burning as well as wildfire managed for resource benefit (described as the use of naturally occurring fire exceeding ten acres in size to achieve resource management objectives) are covered by the smoke management plan. [1]</p>
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Land managers must complete the smoke management plan and submit it to the appropriate air district official. For wildfire managed for resource benefit, the smoke management plan must be submitted within 72 hours of project declaration. The smoke management plan contains the following 15 sections: I. General Information, II. Project Information, III. Emissions Estimates, IV. Wind Prescription, V. Smoke Dispersal Surveillance and Monitoring, VI. Identification of Smoke Sensitive Areas, VII. Mitigations, VIII Evaluation of Alternatives to Burning, IX. Contingencies, X. Public Notification, XI. Complaint Procedures, XII. Contacting Responsible Officials, XIII. Certification, XIV. Maps, XV. Reports and XVI. Approvals. [1] • For burn projects primarily implemented for wildlife and game habitat improvement, the land manager must file with the appropriate air district a statement from the California Dept. of Fish and Game certifying that the burn is desirable and proper and specifying if any brush treatment or other objectives which are desired. The USDA Forest Service is not required to get a statement from California Dept. of Fish and Game [1][2] • The land manager must comply with all applicable air district and State of California regulations. The smoke management plan is one part of an overall burn plan review process. Individual air districts may require

	supplemental information if the proposed burn project is extremely large, likely to adversely impact smoke sensitive areas such as a Class I airshed, likely to have multi-jurisdictional smoke impacts, or contain other site specific complexities which would require the need for further information. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> The land manager must have an approved smoke management plan, be in compliance with all State, District and local regulations and submit the certification from the California Dept. of Fish and Game (if necessary). [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> Title 17 and R5 Supplement 5140 (draft) establishes some additional qualifications needed if burning in a nonattainment area. [2]
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> Evaluation of alternatives to burning are addressed in the applicable National Environmental Policy Act (NEPA) documents. This document is attached to the SMP or a detailed narrative of how alternatives to burning were considered is included in the SMP. [2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> The following mitigation actions may be required for an approved smoke management plan: the number of acres or piles to be burned per day may be limited; the number of piles to be burned at one time may be limited; the hours between ignition of piles/units may be specified; mop-up may be required after a certain number of hours of ignition; ignition times may be limited. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> The actions taken to minimize emissions before and during fires are specified in the smoke management plan. [1]
Smoke Management Components of Burn Plans	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> Written burn plans are required by the air districts. The smoke management plan does not discuss what information must be included. [1]
12. How must smoke dispersion conditions be	<ul style="list-style-type: none"> Smoke monitoring is required if the project is conducted near smoke

evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<p>sensitive areas or if the smoke from the project may impact smoke sensitive areas, smoke monitoring is required on all projects over 250 acres/day and on those projects that would continue burning or producing smoke overnight. [1]</p> <ul style="list-style-type: none"> • Smoke dispersal surveillance and monitoring is accomplished by the following methods indicated in the smoke management plan: balloon, RAWS, aircraft, visual monitoring, weather forecast and on-site weather observations. [1] • A test burn is conducted on a small portion of the project area prior to project implementation. [1] • As part of the smoke management plan, the land manager must provide a wind prescription that describes ideal, acceptable and unacceptable wind direction and identification of potential meteorological conditions that would inhibit acceptable smoke dispersal. [1] • The smoke management plan asks the land manager to indicate if the burn project is likely to impact a Class I airshed. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Public notification actions are required to advise the public and known sensitive receptors that prescribed burning will be conducted in their vicinity and to assure the public that measures will be taken to minimize the smoke impacts. The land manager must comply with all the public notification actions indicated in the smoke management plan. These actions may include notification by radio, newspaper, television, posters/flyers/letters, personal contact and signing. [1] • If potential impacts are identified in Section VI (Identification of Smoke Sensitive Areas) of the smoke management plan, additional notifications may be required within the potentially impacted area. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • If adverse smoke impacts affect any smoke sensitive area the following contingency actions may be required: halt ignitions (except as needed to maintain control of the fire), allow the fire to burn to contingency control lines, suppress the fire, begin immediate mop-up, begin mop-up within a certain number of hours of problem identification and complete mop-up within a certain number of initiation. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being	<ul style="list-style-type: none"> • Smoke monitoring is required on all projects over 250 acre/day, those that would produce emissions over multiple days, and projects near

monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<p>smoke-sensitive areas. The land manager must list the method/location of visual monitoring and the interval between dispersal monitoring observations in the smoke management plan. [1]</p> <ul style="list-style-type: none"> • The land manager must provide a wind prescription that describes ideal, acceptable and unacceptable wind direction and identification of potential meteorological conditions that would inhibit acceptable smoke dispersal. [1]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • A public education and awareness program has been identified by the NEAA as a future action item. Currently public notification of burning is done through one or more of the following, which is identified in the SMP: radio, newspaper, television, posters/flyers/letters, personal contact, and signing.
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • All smoke related complaints must be forwarded immediately to the appropriate air district and a log of all complaint calls related to a burn project is kept in the project file folder for a period of one year from the conclusion of the burn project. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • None at this time. When fully implemented penalties in CA State Health and Safety Code will apply. [2]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • A post-burn smoke management evaluation/summary is required to be kept in the project folder and is subject to review by the appropriate air district. The available information does not discuss what information is required. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Post burn smoke management evaluations are subject to review by the Air District. California Air Resources Board (CARB) will periodically review statewide effectiveness. [2]
21. What are the review criteria?	<ul style="list-style-type: none"> • Title 17 of the California Administrative Code. [2]

Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The smoke management plan does not describe smoke sensitive areas but does ask the land manager to identify them on a map. [1] • The smoke management plan asks the land manager to indicate if the burn project is likely to impact a Class I airshed. [1] • If adverse smoke impacts affect any smoke sensitive area the following contingency actions may be required: halt ignitions (except as needed to maintain control of the fire), allow the fire to burn to contingency control lines, suppress the fire, begin immediate mop-up, begin mop-up within a certain number of hours of problem identification and complete mop-up within a certain number of initiation. [1]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Performance standards are to maintain State and Federal ambient air quality standards and avoid public nuisance per State Health and Safety Code section 41700. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Unknown. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Yes. [2] • Yes. [2] • Each Air District determines criteria. One district uses 3 un-orchestrated complaints as nuisance criteria. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Unknown. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • This varies by Air District. Currently some charge permit and acreage fees. Other districts fund programs through general program revenues. Once Title 17 is finalized permit fees will be implemented and it is anticipated that more districts will be supported by fees. The basis for fees will be determined by each district and will probably be a combination of permit fees, and acreage fees that may vary by type of burn. [2]
28. Does the State and/or local districts maintain	<ul style="list-style-type: none"> • Section III of the smoke management plan asks land managers to

daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	estimate total PM10 emissions in tons. [1] • Some Air Districts maintain an inventory and some do not. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• Actions vary greatly by project but methods utilized for minimizing emissions include biomass thinning, and removal of unutilized material. Section VII Mitigations in the SMP include options for limiting ignition to specified number of acres/piles per day; limiting number of acres/piles burned at one time; hours between ignition of piles/units; limiting ignition times. Section IX of the SMP includes contingencies for mop up. There are no mechanisms in place at this time to record emission reductions achieved. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• Not at this time. [2]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From Communication with Colusa County APCD, California 4/8/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Regulatory authority for Smoke Management lies with the Colusa County APCD. Burn No Burn decisions are generally made by the burning agency however, the AQMD can request a no Burn.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	California Air Resources Board Interagency Fire Forecast Warning Unit (local Weather) California Dept. Forestry and Fire.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	All burns with an area greater than 10 acres or 1 ton of PM10 require a smoke management plan.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Forest Management, Range improvement, Wildland Vegetation Management, Management of Naturally ignited fires for resource benefit
5. How do land managers apply for authorization to burn?	A Smoke Management Plan must be filed with APCD.
6. What are the criteria for getting permission to burn?	A burn day must be declared by the State Air Resources Board/APCD, The weather must match the parameters identified in the Smoke Management Plan.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	There is no specific Qualification required by the air Dist. But most agencies have trained burn bosses. The California ARB provides training specific to smoke management.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to	ERC’s are not tracked. If several agencies are wanting to burn in the same window, priority will be given to an agency that has used alternatives to burning i.e. chipping, biomass or other thinning

burning and emission reduction techniques? Are emission reductions tracked?	techniques.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Pre fire thinning, logging, proper prescription, biomass of useable material.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	It is documented in the Smoke Management Plan
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Not required but often provided.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Regional haze is taken into account. We look for wind directions that will minimize impacts to class 1 areas. Class 1 areas must be identified in SMP's.
13. Must the affected public be notified of planned fires? Please describe.	Yes, The SMP must designate sensitive receptors and the method of notifying them when burning will occur.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Yes, some contingency plans consist of burning reduced acreage, having the burn unit broken into parcels so that it is easier to stop burning if needed. Some times a contingency can be to increase ignition speed resulting in a hotter fire therefore more elevation to the plume.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	All burns must have surveillance and monitoring plans. Usually visual monitoring is used. The air district will often take photographs of Rx burns to use as reference for following burns in the same area. All burns over 250 acres require that the agency submit a post burn smoke evaluation.
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file	No Development of the SMP was done by a work group consisting of regulators, public agencies, private forest management companies, and weather people. The initial sounding board and workshopping was through public meetings when the CARB was enacting Title 17.

complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	We review SMP's and post burn reports. We often attend burns to observe smoke dispersion.
18. What penalties are authorized for non-compliance?	No specific penalties for prescribed burning. Open burn regulations can be enforced.
19. Are post-burn reports required? What information is required?	Yes, Date, time, acreage, smoke direction, whether notifications were completed, if complaints were received, if the goal of the burn was attained.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	Not really
21. What are the review criteria?	
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Class 1 areas are classified by EPA. We take into account the wind direction when authorizing burns in these areas
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	
24. What additional smoke management requirements apply if the performance standards have been exceeded?	
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes, no, State health and safety code definition of nuisance is applied
26. Is the smoke management program, or the	Yes

regulations authorizing the program, part of the State's implementation plan (SIP)?	
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	All funding is currently being paid out of the Counties general fund.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	We track actual acres on a yearly basis. We report acreage on a yearly basis to the State of CA.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	No
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

***Answers from communication with El Dorado APCD, California 4/25/02, and "El Dorado County Air Pollution Control District Smoke Management Program" document (Program pending approval by CARB).**

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	El Dorado County APCD. Local fire agency may require burn permit.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	CDF (California Department of Forestry) and Local Fire Districts. The SMP plan was prepared in conjunction with Mountain Counties Air Basin Technical Advisory Committee through the Mountain Counties Air Basin Smoke Management Alliance. CARB sets meteorological forecast info. If smoke may affect adjacent districts/states, the district will fax or by other means send the Controlled Burn/Prescribed Fire Notification form as soon as practical and prior to ignition; agency concerns will be incorporated into burn authorization.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Yes. Must also: obtain the burn authorization from District in advance. To validate specific smoke transport conditions existing on each site the land manager must launch a helium balloon, set a test fire, rely on local weather forecasts, RAWs or other validation method as specified in SMP.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural and prescribed burning.
5. How do land managers apply for authorization to burn?	All Agricultural and prescribed burning requires a valid air permit. An approved Smoke Management Plan serves as a conditional permit to burn when combined with the air permit.
6. What are the criteria for getting permission to burn?	Must register planned burn (spring and fall), completing air permit application and smoke management plan application.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is	Land managers submit a daily report to the District during burn season listing project name, date, location, and acres or amounts of material burned. The district participates in the MCABSMA which provides a forum to develop agreements with public and private land management

Smoke Management training available?	agencies for more detailed smoke management activities and associated tools.
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	All alternatives must be identified in SMP. No emission reductions are tracked.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Actions may include: Minimum drying times/fuel moistures, piling and/or windrowing materials, active mop up of smoldering, pretreatment of fuels, and other appropriate techniques.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	As documented in SMP.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<p>Yes. Burn projects less than 10 acres in size or that will emit less than one ton of particulate matter may only need to obtain an air permit. Burn projects greater than 10 acres or that will emit in excess of one ton of particulate matter must complete a District Smoke Management Plan. Before issuing an authorization to burn, the District, at its discretion, may require additional smoke management procedures to be used if a burn:</p> <ul style="list-style-type: none"> a) is greater than 100 acres in size, b) may impact smoke sensitive areas, or c) presents other potential problems. <p>Each land manager/burner will follow the minimum smoke management guidelines listed below for each burn project.</p> <p>1) Meteorological Prescription: Provide a detailed meteorological prescription that must be met to proceed with the burn. At a minimum, the prescription must include the acceptable wind direction. Other considerations may include wind speed, temperature profile, winds aloft, humidity, temperature, actual and predicted inversions, burn day status, and forecast precipitation. The District may require weather forecasts to be obtained to make smoke management decisions for the burn project.</p>

	<p>2) Contingency Actions: What actions will a land manager/burner take if smoke from the burn project produces unacceptable smoke impacts. Actions may include: stopping further ignitions, active fire suppression, rapid mop up, and other appropriate techniques that are discussed with the District. 3) Smoke Mitigation: What actions will be taken to minimize smoke from the burn. These may include: minimum drying times/fuel moistures, piling and/or windrowing materials, active mop up of smoldering, pretreatment of fuels, and other appropriate techniques.</p> <p>4) Burning Alternatives: Describe the alternatives to burning which have been considered for this burn project and the basis of why the alternatives were not feasible or justified. Alternatives are listed in the SMP. Additionally for projects requiring NEPA/CEQA environmental documentation, alternatives to burning may be addressed in the air quality section of such documents. The location of the documents is to be noted in the SMP.</p> <p>5) Smoke Sensitive Receptors: A description of the smoke sensitive receptors, such as towns, schools, or roads, is required. A map showing these receptors and the predicted smoke travel should be submitted.</p> <p>6) Public Notification: Describe how the potentially affected public will be notified of the burn project. This may include one or all of the following: media announcements, phone contact lists, road signs, Internet posting and other appropriate techniques.</p> <p>7) Complaint Handling Procedures: A procedure shall be developed that insures that all complaints regarding smoke impacts received by a company or individual conducting the burn are promptly reported to the District.</p> <p>8) Smoke Monitoring: Describe the procedures that will be used to monitor and track the smoke transport from the burn project, which may include: a smoke spotter to check on downwind sites, ambient air monitoring, aerial monitoring, or other appropriate methods.</p> <p>d) Naturally Ignited Wildland Fires: A District Smoke Management Plan shall be completed and submitted within 72 hours from the start of a burn if the size of the fire is expected to exceed ten acres in size and will be managed for resource benefit. When a natural ignition occurs on a no-</p>
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	<p>burn day, the initial “go/no-go” decision to manage the fire for resource benefit will be a “no-go” unless:</p> <p>1) After consultation with the District, staff decide, for smoke management purposes, that the burn can be managed for resource benefit; or 2) For periods of less than 24 hours, a reasonable effort has been made to contact the District, or if the District is not available, the Air Resources Board (ARB); or 3) After 24 hours, the District has been contacted, or if the District is not available, the ARB has been contacted and concurs that the burn can be managed for resource benefit.</p> <p>A “no-go” decision does not necessarily mean that the fire must be extinguished, but that the fire cannot be considered as a prescribed fire.</p>
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<p>The District may require land managers to enter their burn project with ARB to obtain a 48 hr forecast, 72 hour outlook, and 96 hour trend. The District may also utilize special weather forecasts obtained by burn agencies through the Interagency Fire Forecast and Warning Unit, especially for burn projects that are large or located near sensitive receptors. Each land manager must in SMP: Provide a detailed meteorological prescription that must be met to proceed with the burn. At a minimum, the prescription must include the acceptable wind direction. Other considerations may include wind speed, temperature profile, winds aloft, humidity, temperature, actual and predicted inversions, burn day status, and forecast precipitation. The District may require weather forecasts to be obtained to make smoke management decisions for the burn project.</p> <p>Smoke sensitive receptors need to be identified in the SMP.</p>
13. Must the affected public be notified of planned fires? Please describe.	<p>Prior to authorizing the burn permit, SMP Plan will address notification. This may include one or all of the following: media announcements, phone contact lists, road signs, Internet posting and other appropriate techniques.</p>
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<p>See #2 of Question 11.</p>
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being	<p>Currently there are two (2) particulate matter (“PM”) monitoring stations located within the District. Both are operated by ARB and are located in</p>

monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	Placerville and Echo Summit. Additionally, District staff makes visual observations regarding visibility and how much smoke is impairing an area. See #8 of question 11.
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	This Program was prepared in conjunction with the air districts participating in the Mountain Counties Air Basin Technical Advisory Committee. Public and private land management agencies have been given the opportunity to comment on this Program through their participation in the Mountain Counties Air Basin Smoke Management Alliance ("MCABSMA"). This also included those agencies within the El Dorado County portion of the Lake Tahoe Air Basin. Additionally, the District provided a 30-day public notice and comment period prior to District Board of Directors adoption in a public hearing. The District plans to continue participating in the MCABSMA which provides a forum to develop agreements with public and private land management agencies for more detailed smoke management activities and associated tools. The MCABSMA Charter is attached as Appendix A.
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<p>Subject to the constraints of time and availability District staff conduct on-site inspections of a representative number of agricultural and prescribed burns each year. Such inspections are prioritized based on the following criteria:</p> <p>1) active burns that are generating complaints;</p> <p>2) active burns that are large (100+ acres) or located near sensitive receptors; 3) active burns that are conducted in an area or by a source that historically generates many complaints; and 4) planned burns representing a variety of sources and fuels.</p> <p>b) Inspections of active burns document that meteorological conditions are within acceptable parameters; that the amount of acreage and/or fuel given in the burn registration and authorization is what is actually being burned; and that the burn is not impacting any sensitive receptors.</p> <p>c) Inspections of a planned burn documents that the projected acreage and/or fuel loading is consistent with that reported in the burn</p>

	<p>registration; that the meteorological prescription is reasonable for the location; and that actions taken to reduce fuel loading and/or smoke emissions have been carried out.</p> <p>d) If unacceptable smoke impacts occur to a smoke sensitive area from an authorized burn, and such impacts are verified by District staff, then the burner is promptly notified and required to institute the contingency actions as outlined in the SMP where possible.</p>
18. What penalties are authorized for non-compliance?	Notices of Violation issued for violations of the District's Smoke Management Program are handled according to the District's Mutual Settlement Program.
19. Are post-burn reports required? What information is required?	<p>For those burns that are either in excess of 250 acres, created smoke impacts or were burned on No Burn Days, the responsible burn agency must complete a District Project Post Burn Form. These are to be completed and returned to the District within 30 days from the completion of the burn project. This information will then be reviewed and can assist in issuing burn authorizations for similar projects.</p> <p>The District maintains a daily log, recording burn authorizations, location of the burns, amounts of material burned, wildfires occurring that day, and any other relevant information related to smoke impacts. This data is used in the burn authorization process for subsequent days and in evaluating the success and efficiency of the smoke management program. The District also maintains maps indicating burn locations in the District for easy reference of daily burning, location of smoke sensitive receptors, and potential cumulative smoke impacts from other burning in the region.</p>
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	See #19.
21. What are the review criteria?	N/a
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	See #5 of question 11.

23. Does the program establish any performance standards? What are performance standards? How is performance evaluated?	No.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	N/A
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<p>The Smoke Management Program ("Program") is intended to describe El Dorado County Air Pollution Control District's ("District") methods of implementing §80100-80330 of the California Code of Regulations Title 17, Smoke Management Guidelines for Agricultural and Prescribed Burning, and of ensuring compliance with District Regulation III - Open Burning Rule 300. The District derives its authority to implement and enforce this Program from Regulation III, Rule 300 Open Burning. This rule requires applicants for agricultural and prescribed burning to supply such information as is required by the District prior to setting or allowing an outdoor fire. Additionally, sections 300.3 F., Smoke Management; section 300.3 C., Minimum Drying Times; Exceptions to Rule 300, section 300.1 B., Exemption, Agricultural Burning, section 300.1 C., Exemption, Burning Permit, section 300.1 D., Exemption, Minimum Drying Times; section 300.1 E., Nonagricultural Burning; section 300.1 F., Exemption, Wildland Vegetation Management, require the District to regulate burning under specific conditions related to agricultural and prescribed burning activities.</p> <p>Nuisances – Complaints may lead to an inspection.</p>
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	SMP is not part of the SIP.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	At this time, El Dorado County APCD does not charge fees for its smoke management program.

28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	Yes, annual. At end of calendar year burners are required to submit annual burn reports to the district. This data is then transmitted to the California Air Resources Board who prepares an annual burn report each year.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	See #9. Minimizing emissions: actions No mechanisms are in place to calculate and record air pollutant emissions reductions.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	Unknown.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From communication with Feather River AQMD, California on 4/9/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Calif. Health & Safety Code describe provisions for burn day decisions. Calif. Air Resources Board makes daily decisions. Local fire districts may declare no burn decisions due to fire safety (high winds)
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	No central authority (ARB?), burn placements are coordinated with neighboring air districts. No MOU however voluntary coordination exists.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Yes, per Title 17. No requirements for burners not covered under SMP.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural, forest management, wildland mgt., etc.
5. How do land managers apply for authorization to burn?	Submittal of burn permit application with SMP. Approval of permit and SMP lead to allocation of acres on favorable days.
6. What are the criteria for getting permission to burn?	Favorable burn days, available acreage to burn, burn location, wind direction.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	No agreements. No burner qualification requirements. Training for SMP available through ARB/USFS.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are	Potential impacts to smoke sensitive areas. Emission reductions listed in SMP but not tracked.

emission reductions tracked?	
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Fuel moisture, favorable burn day status, test fires, use of forecasts/current met factors, dispersion.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Yes per SMP.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Yes, per std. Plan.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Evaluated per downwind impacts. Visibility impairments/haze not accounted for in SMP. Burn/no burn decisions do not consider these.
13. Must the affected public be notified of planned fires? Please describe.	Per plan.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Per plan.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	Smoke monitored. Burner responsible for monitoring. AQMD staff may monitor burn. Monitoring smoke dispersions, impacts, visibility. No reqt's, subjective though based on complaints. Data used to promote better burning in future, less impacts. No threshold/trigger levels established. Complaints generated are investigated.
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP?	Local media, District web site, ARB web site. Public contacts District, Fire Dept., and/or ARB regarding complaints. Sacto Air Basin AQMD's generated SMP (check w/ARB).

What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Per ARB.
18. What penalties are authorized for non-compliance?	Per Calif. Health and Safety Code.
19. Are post-burn reports required? What information is required?	Req'd for acreage >250 acres. Per SMP.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	Per ARB.
21. What are the review criteria?	Per ARB. Annual review.
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Yes, smoke sensitive/urban areas. Geographical boundaries describe zones. Criteria for optimum burning.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	Minimizing smoke impacts.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	Review of SMP and actual burn/smoke impact results.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes. Nuisance conditions defined in District Rule 2.13. "In accordance with Section 41700 of the Calif. Health & Safety Code a person shall not discharge for any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property."
26. Is the smoke management program, or the regulations authorizing the program, part of the	Not certain.

State's implementation plan (SIP)?	
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	Permit, acreage fees. Basis is burn acres only.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	Yes. Emission calculations based on post burn reports.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Yes, in SMP.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	No.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	Not certain to first two questions. No to final question.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	Not certain.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

**From communication with Great Basin Unified APCD, California on 4/5/02
Smoke Management Program Components Regarding Vegetative Management**

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	The GB District APCO has the regulatory authority to make burn decisions (i.e. Allowing burning on ARB-declared “marginal” or “no-burn” days, or disallowing burning on ARB-declared “permissive” days).
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	There is a MOA in place with GBUAPCD, CARB, Inyo National Forest, Humboldt-Toiyabe National Forest, Stanislaus National Forest, Eldorado National Forest, BLM, City of Los Angeles Dept. of Water & Power, Death Valley National Park and, hopefully soon, Southern Region of California Dept. of Forestry (local CDF office voluntarily coordinates). GBUAPCD also coordinates with the Smoke Management Coordinator of the Nevada Division of Environmental Protection, Bureau of Air Quality and with neighboring California Air Quality Districts.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Compliance with GBUAPCD’s burn rules is mandatory, so by default, participation in the SMP is also. Certain aspects of the SMP, such as the exact format of submitted SM Plans, is not mandatory so long as all the required information is provided.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Specific rules exist for incinerators; agricultural, forest management, range improvement, and wildland management burning; and non-industrial wood waste at landfills. Allowable burning by exception includes training in firefighting, open burning and detonation of explosives waste materials on military bases, creating special effects for filming, disposal of contraband, recreational or ceremonial fires, or abating a public health hazard.
5. How do land managers apply for authorization to burn?	Submittal of a Smoke Management Plan and/or a comprehensive burn plan.
6. What are the criteria for getting permission to burn?	Permission is granted when the applicant addresses each of the required elements of the Smoke Management Plan suitable for the size of the burn and potential impact to smoke-sensitive receptors.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	A formal MOA is in effect with land managers. No burner qualifications are stipulated for land managers. Private parties are required to have burn permits from the responsible fire protection agency in their areas. No formal training is provided by GBUAPCD, but questions are readily answered by staff. CARB provides formal training.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to	GBUAPCD has suggested chipping of brush to one land manager and

fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	offered to provide funding for the chipper. No emissions reductions are tracked.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	An appropriate drying time is required for vegetative waste in agricultural burning.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Such actions are not formally documented at this time.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Burn plans are required for burns that are larger than one acre or have more than one ton of potential particulate emissions. Basic information about location, size, duration, proximity of smoke-sensitive receptors, wind direction, etc. are required for all plans and with escalating burn size, additional details for contingency plans, public notification, etc.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Smoke dispersion modeling is not required for burn plans but has been requested by, or provided to, GBUAPCD on occasion when large burns are planned relatively near to a town. Visibility issues were the factor for prohibiting burning on Sundays, legal holidays and the last weekend of April (opening day of local fishing season).
13. Must the affected public be notified of planned fires? Please describe.	Procedures for public notification is requested for all burns for which a burn plan is required (burn size > 1 acre or 1 ton PM10).
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Suspension of the ignition of burns is required if smoke begins to impact smoke-sensitive receptors. Specific contingency plans are required as part of the SM Plan for burns > 100 acres or 10 tons PM10.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	The only monitoring criterion is wind direction during the burn, which triggers the suspension of ignition. This is done both by the burners and by GBUAPCD. PM10 concentrations are not typically monitored, but on one occasion in 2001 an impact was documented in an area where a GBUAPCD PM10 monitor was in operation. The PM10 concentration was less than ½ of the 24-hour California standard of 50 µg/m ³ .
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP?	No such program is in place.

What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Penalties can be levied by the GBUAPCD for violations of the burn rules.
18. What penalties are authorized for non-compliance?	Monetary penalties are imposed as per GBUAPCD policy for violations.
19. Are post-burn reports required? What information is required?	Annual summaries of burn acreage are required for land managers.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	The MOA will expire or be renewed (evaluated) every five years.
21. What are the review criteria?	Not established
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Federal non-attainment areas exist within the district and there are tons of PM10 emission limits for prescribed burns included in the State Implementation Plans for achieving attainment in these areas.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No
24. What additional smoke management requirements apply if the performance standards have been exceeded?	N/A
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Both state and local nuisance rules apply to prescribed burns and natural fires that are managed for resource benefits. Typically, five or more complaints would establish a nuisance. GBUAPCD staff may also determine that a nuisance exists if roadway visibility is impaired or if a concentrated smoke plume impacts a populated area.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	The revised GBUAPCD burn rules, adopted by its governing board on November 7, 2001, were approved by CARB on December 27, 2001.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	Funding for the Smoke Management Program is included in the district's overall budget. No related fees are required from burners.

28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	Only total annual burn acreage is recorded, not emissions.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	No
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	No
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Imperial County APCD Smoke Management Program, California February 2001

Smoke Management Program Components Regarding Vegetative Management

[1] Title 17, Smoke Management Guidelines, California Code of Regulations, March 14, 2001.

[2] Comments received from CARB, November 9, 2000

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	ICAPCD
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	DAILY COORDINATION WITH CARB, IMPERIAL COUNTY FIRE DEPT. ALSO, IF SMOKE IMPACTS MAY CROSS THE MEXICAN BORDER, ADJUSTMENTS MAY BE MADE TO BURN DAY HOURS, LOCATIONS, AND ALLOCATIONS. ICAPCD WILL NOTIFY BY TELEPHONE ADJACENT AIR DISTRICTS, REGIONS, OR STATES IF SMOKE MAY IMPACT THOSE AREAS.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Each air district must adopt a smoke management program (SMP) consistent with the Guidelines. Each air district or region shall develop its SMP in coordination with the ARB and appropriate fire protection agencies, the land managers having jurisdiction within the district, any other affected parties, and the public. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural, and wildland vegetation management burning.
5. How do land managers apply for authorization to burn?	A valid permit must be obtained from the ICAPCD prior to burning. Each applicant for a permit must provide information requested by the district and the designated agency. [1] Each applicant must submit an application (Appendix 3 of SMP). Air district SMPs must include procedures for acquiring information on amounts of material burned on each day, on planned and unplanned wildfires, and other information needed to establish the burn authorization for the following day. [1] Air district SMPs must require submission of smoke management plans (burn plans) within 72 hours of the start of the fire for naturally-ignited

	wildland fires managed for resource benefits that are expected to exceed 10 acres.[1]
6. What are the criteria for getting permission to burn?	<p>The ARB will announce by 3:00 p.m. every day for each of the state's air basins or other specified areas whether the following day is a permissive burn day or no-burn day, or whether the decision will be announced on the following day. If conditions preclude a forecast until the next day, the decision will be announced by 7:45 a.m.[1]</p> <p>Burning must comply with all conditions specified on the permit, which must have district approval consistent with the Guidelines. [1]</p> <p>The district may, by special permit, authorize burning on days designated by the ARB as no-burn days if the denial of such permit would threaten imminent and substantial economic loss. [1]</p> <p>Staff will contact the responsible agent for each requested burn and inform them of the scheduled burn time.</p> <p>Special burns must comply with the provisions of Rule 701 (Agricultural Burning), and provisions A.14, A.14a.-A.14.h. Special burns require the presence of an inspector at the site to give authorization to burn.</p>
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	The district SMP requires daily coordination between the land manager or his/her designee and the air district or the ARB for multi-day burns which may impact smoke sensitive areas, to affirm that the burn project remains within the conditions specified in the smoke management plan (burn plan), or whether contingency actions are necessary. [1]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<p>The district SMP must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of non-burn alternatives. [1]</p> <p>The district SMP must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain an evaluation of alternatives to burning considered. [1]</p> <p>The ICAPCD implements an Agricultural Burning Emission Reduction Credit (ERC) Certificate program as an alternative and incentive to not burn. An ERC Application must be submitted, and a visual inspection by ICAPCD staff must occur in order to receive an ERC in tons of pollutant.</p>

<p>9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?</p>	<p>In the case where, by special permit, the district authorizes burning on days designated by the ARB as no burn days, the district will limit the amount of material which can be burned in any one day and only authorize burning which is not likely to cause or contribute to exceedences of air quality standards or result in smoke impacts to smoke sensitive areas. [1]</p> <p>The district shall not allow burns > 2,000 acres per day, unless authorized by the APCO.</p> <p>The district SMP includes a daily burn authorization system that regulates burning in order to minimize smoke impacts on smoke sensitive areas, avoid cumulative smoke impacts, and prevent public nuisance. [1]</p> <p>The applicant's SMP must include procedures for addressing cross-jurisdictional smoke impacts by coordinating with neighboring air districts, regions, or states. [1]</p> <p>The applicant SMP must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices. [1]</p> <p>Special burns will be given priority so that burning impacts can be minimized. Efforts to reduce smoke emissions must also be considered. [1]</p> <p>Air district SMPs must require vegetation to be in a condition that will minimize the smoke emitted during combustion when feasible. [1]</p> <p>Air district SMPs must require material to be burned to be piled where possible, unless good silvicultural practices or ecological goal dictate otherwise. [1]</p> <p>Air district SMPs must require piled material to be burned to be prepared so that it will burn with a minimum of smoke. [1]</p>
<p>10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?</p>	<p>The District must include plans to provide for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [2]</p>
<p align="center"><i>Smoke Management Components of Burn Plans</i></p>	
<p>11. Are written burn plans required by the SMP? What information must be included?</p>	<p>The applicant's must apply for a burn permit (Appendix 3) and submit a smoke management plan for all burn projects greater than 10 acres or</p>

	<p>estimated to produce more than one ton of particulate matter. These plans must contain, at a minimum, the following information: location, types, and amounts of material to be burned; expected duration of the fire from ignition to extinction; identification of responsible personnel, including phone contacts; and identification and location of all smoke sensitive areas. [1]</p> <p>The submission of a more detailed smoke management plan for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter is required. This plan must contain the information above and the following additional information: identification of meteorological conditions necessary for burning; the smoke management criteria the land manager or his/her designee will use for making burn ignition decisions; projections, including a map, of where the smoke from burns is expected to travel; specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan; an evaluation of alternatives to burning considered; and discussion of public notification procedures. [1]</p>
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<p>The district has a daily burn authorization system that will not allow more burning on a daily basis than is appropriate for the meteorological or air quality conditions. Meteorological conditions to be evaluated include wind speeds and directions at the surface and aloft, and atmospheric stability. [1]</p> <p>The APCO may restrict burning if the total tonnage to be ignited is > 5% of total annual tonnage burned in the county if visibility is < 10 miles for two observations one hour apart when the relative humidity is < 70%. The APCO may also declare a No Burn day when visibility is < 5 miles.</p>
13. Must the affected public be notified of planned fires? Please describe.	<p>For burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter, these plans must contain discussion of public notification procedures. [1]</p> <ul style="list-style-type: none"> • The SMP must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the	<p>The SMP must contain specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those</p>

criteria for implementing such plans?	specified in the plan. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<p>Air district SMPs must include a description of the meteorological and air quality monitoring data to be used to provide data for determining the basinwide meteorological and air quality conditions. [1]</p> <p>The district must require smoke management plans to include appropriate monitoring as required for the following burn projects: projects greater than 250 acres; projects that will continue burning or producing smoke overnight; projects conducted near smoke sensitive areas; or as otherwise required by the district. [1]</p>
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<p>Air district SMPs must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1]</p> <p>The ARB has established a working group which will develop recommendations for public education and outreach efforts. The ARB also has a web site where information relating to ARB's smoke management program is posted. [2]</p> <p>The revisions to Title 17 (ARB's smoke management guidelines) went through an extensive public outreach process, including three program scoping sessions, 15 workshops, and 23 meetings with affected stakeholders. [2]</p>
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Special burns require on site staff inspections. On-site inspections will be performed for complaints received.
18. What penalties are authorized for non-compliance?	<p>If unacceptable impacts occur to a sensitive area from an authorized burn, and impacts are verified by APCD staff, the burner will be promptly notified and contingency actions must be taken, as possible. NOV (Notice of Violation) are handled the same as any other APCD violation. The ICAPCD Mutual Settlement Policy is used to determine penalties and enforcement actions.</p>
19. Are post-burn reports required? What information is required?	The APCD requires a post-burn smoke management evaluation by the burner for fires greater than 250 acres. [1]

Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	The district SMP must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [1]
21. What are the review criteria?	See Question 20.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Special burns are designated as those which will occur within one and a half miles of a residential area (3 or more contiguous, inhabited dwellings), rural school or adjacent to heavily traveled roads. An APC officer must be present prior to and give approval to start the burn. The inspector may withhold approval if meteorological conditions are not appropriate, which may include: strong winds, smoke drift towards residential or sensitive areas, heavily traveled roads, low inversion layer, excessive moisture, etc. Traffic detail may be required for a special burn if smoke may obscure roads adjacent to the burn. The permittee must request an appointment with an inspector to obtain authorization for a special burn.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	The ARB's smoke management program provides a collaborative framework to provide for increased opportunities for managed burning while allowing California to meet health-based air quality standards and federal visibility requirements. No specific "performance standards" however have been adopted. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	Not applicable. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	The ICAPCD keeps an agricultural burn complaint log. Staff shall respond to all complaints received about smoke impacts as soon as feasibly possible after complain is logged. If ICAPCD staff find the complaint is valid and there is a smoke impact on a sensitive area, staff will contact the burner and require all reasonable steps to be taken to minimize further impact. Burners are required to notify staff of any complaints they receive.
26. Is the smoke management program, or the	The districts' current smoke management rules are included as part of

regulations authorizing the program, part of the State's implementation plan (SIP)?	the SIP. New rules adopted due to the new requirements of the revisions to Title 17 will supersede the old rules when new PM and regional haze SIPs are submitted. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	Costs associated with implementation and operation of the SMP are addressed by individual districts. As provided by State law, districts can recover costs associated with the compliance with State requirements by fees on sources that engage in burning through permit fees. The structure for assessing fees varies by district. The ARB is also committed to working with all stakeholders, including districts and affected sources, to fund the SMP and is developing funding proposals to provide technical and monitoring support. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	The State compiles estimates of prescribed burning emissions. These estimates are computed by local districts. The level of effort and completeness of these estimates varies. All of the districts compile annual estimates, but these estimates are not necessarily updated each year. Generally the emission estimates include seasonal profiles which can be used to apportion annual emissions by month based on historical burning trends. Daily estimates are not computed. In most regions, prescribed fire emissions are based upon either permitted acreage, or post burn annual summaries. It is not yet common practice to base emission estimates on fire-specific post-burn reports that include information on fuel type, condition, and consumption. However, the State is involved in efforts to substantially improve the completeness and uniformity of prescribed burning emission estimates. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Not at the current time. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	Information not provided.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or	No.

regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From communication with Kern County APCD, California 3/20/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	California Air Resources Board
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	Local APCD’s and Land Managers Mou’s and state law Making sure the burning takes place properly with respect to time, place and manner
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Yes, Yes’ still have to obtain any appropriate permits
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural/Prescribed Burns
5. How do land managers apply for authorization to burn?	Application form and instructions provided by the District
6. What are the criteria for getting permission to burn?	Permit, approved Smoke Management Plan (SMP) if greater than 10 acres
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	Yes, 48/72/96 hour forecasts and others No, Probably, There are workshops periodically
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are	Application has a section that addresses this matter Applicant must respond to any alternatives to burning and whether or not they can be utilized Yes, through the use of the plans

emission reductions tracked?	
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Condition of fuels, reduction of fuels Use best meteorological conditions and burn management techniques
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Yes, Addressed in the application/Smoke Management Plan Necessary for approval of the SMP
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Yes, if greater than 10 acres or 1 ton of particulate emissions Much information
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Weather observation, smoke behavior observation Burn/no burn decisions are made by the state for most local areas
13. Must the affected public be notified of planned fires? Please describe.	Yes, Most media sources and sign posting. Begin before the burn and continue throughout
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Yes, All application/plans must address public exposure to smoke Public complaints, investigations
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	Yes, Land managers Could include smoke spotters, air monitors, aerial monitoring Public impact-data can be used to determine the success/failure of a smoke management plan
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went	Not much burning takes place in this District so the need is not great. Public is aware the program exists Public meetings and hearing on adoption of the Smoke Management Program Action as needed, changes as deemed necessary

through to involve the public developing your SMP? What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Audit District program
18. What penalties are authorized for non-compliance?	Fines/incarceration possible
19. Are post-burn reports required? What information is required?	Yes, if greater than 250 acres or public complaints Was Smoke Management Plan properly implemented?
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	Yes
21. What are the review criteria?	Is the program effective?
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	No
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	Land managers are required to abide by all elements of the program Effectiveness of the plan-----Public complaints
24. What additional smoke management requirements apply if the performance standards have been exceeded?	Take contingency action
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes, Yes, if the burn is not conducted properly Nuisance to a "considerable number of persons(District will interpret), damage to business/property, health etc.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	Yes

27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	District budget, no special fees
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	Yes, as reported in the Smoke Management plan application and adjusted after completion of the burn in the post-burn report if there was a deviation from the original plan
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Yes, part of the information required in the Smoke Management Plan and/or the post burn report
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	It has state approval, state will submit to EPA
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Lake County AQMD Smoke Management Plan, California February 2002

Smoke Management Program Components Regarding Vegetative Management

[1]Title 17, Smoke Management Guidelines, California Code of Regulations, March 14, 2001.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	LAKE COUNTY AQMD AND LOCAL FIRE AGENCIES
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	LOCAL FIRE AGENCIES, ARB. Whenever a burn within the LCAQMD jurisdiction appears likely to impact neighboring Districts, we advise them by telephone, and they do the same for us. Communications are established early, and have been working well for more than a decade, and are not expected to be adversely impacted by the new ARB requirements. We often exchange plans early in the fire season and compare experiences on the competence and success record of burners.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	YES, PARTICIPATION IS MANDATORY.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	The District's open burning rules are broken down into agricultural and non-agricultural burning. The Lake County Air Quality Management District issues three types of agricultural permits, Agricultural Burn Permits, Tule Burning Permits and Lot Clearing Permits.
5. How do land managers apply for authorization to burn?	The first step in permitting is to find out what the applicant intends to burn, the location for the burn, and how much material will be burned. (A Smoke Plan may be needed and is issued at present by senior staff). The rules and conditions of the burn permit are reviewed with applicants, along with the requirement that they avoid illegal material and must call the burn message line for burn status prior to burning. Authorization of agricultural and prescribed burning 24 hours in advance of a burn or on a daily basis. Permits are issued subject to final approval (or postponement) on the day of the burn, which is based on the latest assessment of meteorological

	conditions as they relate to smoke dispersal and public safety.
6. What are the criteria for getting permission to burn?	<p>A description of how burn permits are issued, who issues the permits, and what the requirements are for obtaining a permit, including submittal of smoke management plans for specified prescribed burns (reference burn permit application and provide as an attachment) per Guidelines Sections 80145(j) and 80120 are found in Sections 1000, 1001, 1002 and Table 8 of the LCAQMD Rules (Appendix B) and attached Agricultural Burning Permit (Appendix C1 and C2) and Lot Clearing Permit for Development or conversion of land (Appendix D).Agricultural Burn Permits are needed if any of the following criteria are met:</p> <p>Property is 5 acres or more; The fire will burn 1/4 acre or more of grass, weeds, or agricultural prunings; More than 1/4 acre of orchard is being removed (a Smoke Plan may be needed); The burn is for forest management. (a Smoke Plan may be needed); The burn is for Rangeland Improvement (a Smoke Plan may be needed). Special permits are required for burning tules. These fires require specific approval on the day of the burn, and approval is only granted when weather conditions are such that both smoke and ash dispersal are unlikely to produce adverse effects.</p> <p>Lot Clearing Burn Permits are required if either of the following criteria are met:</p> <p>Vegetation is being removed from land being cleared for construction or sale; Burn pile(s) are larger than 6 feet in diameter.</p> <p>The description of how prescribed burn planning will occur to meet Section 80160 Guideline elements, including registration and information requirements for burns of different types, locations, sizes, and potential to impact smoke sensitive areas are found in Section 1160 of the LCAQMD Rulebook and attached Smoke Management Plan.The rules restrict most burning to the period November through May 15th. The days are each further evaluated and designate limited hours of burning (9am-3pm) or</p>

	extended hours of burning (daylight). These decisions are made daily by AQMD staff. Any day can be designated a no burn day should fire agencies request such to lower fire hazard, or AQMD staff believe a potential for exceed of any state AAQS exists. Limited burn days are designated if it is judged likely that 50% of any AAQS will be reached, or strong nocturnal inversions are suspected. Special conditions on individual permits allow other hours as agreed upon by AQMD staff.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	Air district SMPs must require, as appropriate, daily coordination between the land manger or his/her designee and the air district or the ARB for multi-day burns which may impact smoke sensitive areas, to affirm that the burn project remains within the conditions specified in the smoke management plan (burn plan), or whether contingency actions are necessary. [1]
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	The air district will analyze and assess alternatives to burning on a periodic basis per the Guidelines in Section 80145(I), but in general these are and will remain superficial for large prescribed burns. We will continue to encourage public agencies to pursue all alternatives, and each planned fire over twenty acres will address this point. The AQMD has co-funded a chipper and promoted a program for residential and near residential burning alternatives when doing fire hazard reduction projections. We serve on the Lake County Fire Safe Council and work to seek progress towards fire safety and wise burning practices
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<p>In the case where, by special permit, an air district authorizes burning on days designated by the ARB as no burn days, a district will limit the amount of material which can be burned in any one day and only authorize burning which is not likely to cause or contribute to exceedences of air quality standards or result in smoke impacts to smoke sensitive areas. [1]</p> <p>Air district SMPs must include a daily burn authorization system that regulates burning in order to minimize smoke impacts on smoke sensitive areas, avoid cumulative smoke impacts, and prevent public nuisance. [1]</p> <p>Air district SMPs must include procedures for addressing cross-jurisdictional smoke impacts by coordinating with neighboring air districts,</p>

	<p>regions, or states. [1]</p> <p>Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices. [1]</p> <p>Air district SMPs must provide, if necessary, procedures for prioritizing burning that districts can use to minimize smoke impacts. Efforts to reduce smoke emissions must also be considered. [1]</p> <p>Air district SMPs must require vegetation to be in a condition that will minimize the smoke emitted during combustion when feasible. [1]</p> <p>Air district SMPs must require material to be burned to be piled where possible, unless good silvicultural practices or ecological goal dictate otherwise. [1]</p> <p>Air district SMPs must require piled material to be burned to be prepared so that it will burn with a minimum of smoke. [1]</p>
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Districts SMPs must include plans to provide for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<p>Planned burns greater in size than 20 acres, or which are likely to have a smoke impact in the District's opinion, or pose a potential danger for escape in the Fire Agency's opinion, or actually have a history of public complaints, shall submit and implement a smoke management plan (one plan may cover several phases of burning in a given area). Burners must obtain District authorization to burn on each day of the burn. To the extent feasible, plans are to be submitted annually six months in advance of the proposed burn detailing the following:</p> <ul style="list-style-type: none"> (1) Location, types, and amounts of material to be burned. (2) Expected duration of the fires from ignition to burn down. (3) Identification of a responsible person to include address, telephone number, cellular telephone numbers, or other means of prompt contact. (4) A map of the wildland to be treated showing the location of land to be treated and identification and recognition of smoke sensitive areas. (5) Identification of meteorological conditions necessary for the planned burning.

	<p>(6) The smoke management criteria the land manager or the designee will use for making burn ignition decisions.</p> <p>(7) Projections, including a map, of where the smoke from burns is expected to disperse for both day and night.</p> <p>(8) The land manager or designee conducting a prescribed burn, shall obtain the concurrence of the District and ensure that conditions and requirements contained in the smoke management plan are met and expected to continue to be met for the duration of the planned burn at the time of ignition.</p> <p>(9) If the planned prescribed burn is greater than 100 acres, or in the District's opinion has a likelihood of causing smoke impacts, items 1-8 above plus the following shall be included in the plan: (a) identification of specific contingency actions (such as fire suppression or containment) that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the smoke management plan; (b) daily contact with the District prior to ignition and during each day of burning shall be made by the land manager or designee; (c) a statement that alternatives to burning have been considered and determined not to be feasible; (d) public notification procedures to be utilized; and (e) identification of appropriate monitoring to include visual monitoring, ambient particulate matter monitoring, or other monitoring, as approved, or required by the District.</p> <p>(10) If the planned prescribed burn is greater than 250 acres or a multi-day fire (it is not expected to burn down overnight) items 1-9 above plus: (a) the District will provide notice to the ARB and consult with the ARB on procedures for ARB review and approval; (b) the ARB shall have the right to disapprove any burn approved by the District prior to ignition; and (c) the land manager or designee shall perform and file in conjunction with the District a post-burn smoke management evaluation within 7 days of the fire.</p>
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Whenever meteorological conditions suggest that a burn would have a significant impact on a smoke-sensitive area, permission for the burn is withheld until conditions improve.
13. Must the affected public be notified of planned	The responsible party is encouraged to meet with public groups and

fires? Please describe.	radio/newspaper, and/or TV notification are used in risky cases or when consider potential for impact is likely. We do not require posting of signs.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	Air quality monitoring and meteorological data are collected at the District SLAMS station in Lakeport, as well as other key locations within the basin. The SLAMS site data includes Ozone, COH, nephelometer, PM-10, and PM 2.5 in addition to temperature and wind parameters. The collected data is utilized for forecast and verification purposes. Additional meteorological and PM-10 data are collected in the Middletown and Cobb areas to document Geysers geothermal facilities impacts, but can serve to evaluate agricultural and prescribed burning. The data of record collected by the District document full attainment of all state and federal AAQS in the Lake County Air Basin from 1987 through the present, and is incorporated into the EPA/AIRS system. Additionally, the District maintains a portable meteorological and PM-10 (battery powered) Station mounted in 4-wheel drive, but seldom makes use of it for burning evaluation purposes.
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	Generally, large burns are done with a method of contact and burning is curtailed if we receive three or more health related complaints.
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Unannounced field inspections of burning activities are routinely conducted by Compliance Officers and all other staff present in the field. The District maintains an effective permitting and enforcement program to

	ensure that compliance with the agricultural and prescribed burning program is accomplished. District staff are available during all non business hours by phone and commonly answer complaints during weekends and evening hours. All public complaints are formally logged and acted upon promptly, and the vast majority of complaints are resolved within 24 hours. Records of all complaint and enforcement actions and outcomes are maintained in computerized databases, and every complaint is reviewed for further action by the APCO prior to filing or closing the issue. These records are also maintained as hard copy records with the most recent 3 years maintained as active files.
18. What penalties are authorized for non-compliance?	Enforcement procedures include NTC, NOVW, NOV, Notice to Appear and Civil and Criminal referral options. Enforcement action is conducted in accordance with CARB and District Board adopted mutual settlement offers, policy and guidelines, but follow up prosecution is largely ignored by the District Attorney's Office.
19. Are post-burn reports required? What information is required?	Prescribed fires over 250 acres will be reported prior to the burn and subsequently in a follow up report to ABR after the burn. Smoke Management plans are submitted consistent with the present recommend standard form, and will be modified as appropriate as this form and approach are improved in the future. These burns will be reported through PFIRS if functional and accessible in the future. Daily updates are given for all prescribed fires to the AQMD by burners.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [1]
21. What are the review criteria?	See Question 20.
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Burns greater than 10 acres must identify the location of smoke sensitive areas. [1]
23. Does the program establish any performance standards"? What are performance standards? How	No specific "performance standards" however have been adopted. [1]

is performance evaluated?	
24. What additional smoke management requirements apply if the performance standards have been exceeded?	Not applicable. [1]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<p>Yes.</p> <p>The District's Agricultural and Prescribed Burn Program and implementing regulations designate the smoke management element from naturally ignited wildland fires as the responsibility of the Air Resources Board for the decision to allow continuation of the fire under a prescribed fire plan. The District adopted regulation read as follows: LCAQMD Rule Section 1160.(K): For all wildfires, if a land manger chooses to treat a wildfire as a prescribed burn, the land manager or responsible official shall: 1) first submit to the responsible Fire Agency and District a statement that the wildfire is considered safe and manageable as a prescribed burn and that it is desirable to manage the wildfire as a prescribed burn, as allowed by California Code of Regulation – Title 17; 2) immediately request from the state Air Resources Board permission to continue to treat the initial wildfire as a managed prescribed burn; and 3) ensure full compliance with California Code of Regulation – Title 17 throughout the burn including submittal of a smoke management plan as required by Title 17 section 80160(i).</p>
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	Yes.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	Costs associated with implementation and operation of the SMP are addressed by individual districts. As provided by State law, districts can recover costs associated with the compliance with State requirements by fees on sources that engage in burning through permit fees. The structure for assessing fees varies by district. The ARB is also committed to working with all stakeholders, including districts and affected sources, to fund the SMP and is developing funding proposals to provide technical and monitoring support.
28. Does the State and/or local districts maintain	The Agricultural Emissions Inventory for Lake County for the year 2000 is

daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	provided in Appendix C of the Lake County AQMD Smoke Management Plan.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	None.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	The completed package of rules has been developed, enacted, submitted to the EPA for inclusion into the State Implementation Plan (SIP).
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From communication with Lassen County APCD, California 3/27/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Lassen County APCD
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	CARB
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	YES
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	All
5. How do land managers apply for authorization to burn?	FILL OUT SMP (ASSUMES THIS IS APPLICATION)
6. What are the criteria for getting permission to burn?	COMPLETENESS/TIMING/ACREAGE
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	NO
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are	REVIEW ALTERNATIVES WITH APPLICANT

emission reductions tracked?	
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	BURN DAY REQUIREMENTS. COMPLY WITH BURN DAY DESIGNATIONS.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	YES
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	YES
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	COMPLY WITH BURN DAY REQUIREMENTS
13. Must the affected public be notified of planned fires? Please describe.	NO
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	NO
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	NO
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP?	NO

What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	FIELD INSPECTIONS
18. What penalties are authorized for non-compliance?	Any violation of the agricultural burning requirements stated in these procedures is a misdemeanor, under Section 42400 of the California Health and Safety Code, punishable by imprisonment in the county jail not exceeding six months, or by fine not exceeding one thousand dollars or both, and the cost of putting out the fire. Every day, during any portion of which such violation occurs, constitutes a separate offense
19. Are post-burn reports required? What information is required?	YES (ENSR comment – see CARB SMP Short Form Post Burn questions).
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	NO
21. What are the review criteria?	No answer given.
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	NO
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	NO
24. What additional smoke management requirements apply if the performance standards have been exceeded?	NONE
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	YES, IF NOT IN COMPLIANCE WITH SMP

26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	YES
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	NO FUNDING AT PRESENT; ZERO.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	NO
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	NO
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	NO
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	YES – BUT ONLY DEPT. OF PESTICIDE REGULATIONS (ENSR comment: assumes no direct air quality regulations)
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	NO

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From communication with Mendocino County AQMD, California 4/15/02, and "Mendocino County AQMD Smoke Management Program,

Submitted to California Air Resources Board, September 5, 2001"

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	MENDOCINO COUNTY AQMD; LOCAL FIRE AGENCIES HAVE ABSOLUTE VETO POWER OVER ALL BURN DECISIONS.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	THE AQMD COORDINATES WITH CARB, LOCAL FIRE AGENCY, AND BURN MANAGER. FIRE AGENCIES CAN CHOOSE TO BE DESIGNATED AGENCY.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Yes.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural and prescribed burns
5. How do land managers apply for authorization to burn?	<p>The District will follow ARB guidelines for making burn/no burn decisions. The burn authorization system is based upon the following:</p> <ol style="list-style-type: none"> 1) Air Quality 2) Meteorological conditions expected during burning, including wind speeds and directions at the surface and aloft, and atmospheric stability 3) Types of amounts, materials to be burned 4) Locations of materials being burned 5) Locations of smoke sensitive areas 6) Smoke from all burning activities, including burning in adjacent districts or regions which may affect the district. <p>Items 1,2, 6 are addressed on a daily basis 72 hours before the burn, in consultation with ARB meteorologists. Items 3, 4, and 5 are addressed</p>

	<p>when the original SMP arrives in office. From information in the SMP, boundaries to the allowable burn conditions will be set. ARB meteorologists issue basin wide notices of burn/no – burn days daily. Burn day decisions are available to the public by voice recording, updated daily no later than 4:30 pm for the next day's status. Call (707)463-4391. Recommended also to call the burn forecast recording on the planned burn day; also check with District office before ignition to ensure conditions in their area are acceptable to burn.</p>
6. What are the criteria for getting permission to burn?	<p>Apply for burn permit from APCD and Fire Agency, and submit Smoke Management Plan (all burns over 10 acres require SMP). The following requirements apply:</p> <p>A) For broadcast burns < 10 acres, piles or slash < 50 tons total fuel or <10,000 cubic feet in volume, or producing < 1 ton of PM, burns must be:</p> <ol style="list-style-type: none"> 1) Performed during burn season (Nov. – July 1st) 2) MCAQMD Permit required, Designated Fire Agency permit accepted 3) No SMP required 4) Comply with requirements of MCAQMD Regulation 2 5) May only burn on a state determined permissive burn day 6) Must notify District of intent to burn at least 18 hrs in advance of ignition 7) May burn only one 5-acre plot or pile per parcel per burn day 8) Must do a pilot test burn to determine smoke impacts (direction of drift, etc.) 9) May ignite piles only between 10 am and 3 pm or as required by Fire Agency permit. Ignition or additions to fires are not allowed between 2 hrs before sundown and 6 am the following day 10) May be queued. When multiple burns by different individuals may occur on same day, the District may allocate burns on a first registered basis, considering smoke impacts. <p>B) For burns of at least 10 acres but < 100 acres for broadcast burns, or at least 50 tons but < 2000 tons of fuel piled or slash, between 10,000 and 200,000 cubic feet of volume, or producing between 1-5 tons of PM:</p>

	<ol style="list-style-type: none"> 1) MCAQMD Permit required, Designated Fire Agency permit accepted 2) SMP required – Registration fee of \$30 + Assessment fee \$0.50 per acre or \$0.08 per ton of fuel piled or slash, not to exceed \$150.00 3) SMP, Section A required if Smoke Sensitive Areas potentially impacted 4) Comply with requirements of MCAQMD Regulation 2 5) May be queued. 6) SMP, Section C required if Smoke Sensitive Areas were impacted 7) Must complete and turn in SMP Section D to District at end of burn. C) For burns >100 acres, >2000 tons of fuel, piles >200,000 cubic feet, or producing >5 tons of PM: <ol style="list-style-type: none"> 1) MCAQMD Permit required, Designated Fire Agency permit accepted 2) SMP required – Registration fee of \$30 + Assessment fee \$0.50 per acre or \$0.08 per ton of fuel piled or slash, not to exceed \$500.00 3) SMP, Section A required if Smoke Sensitive Areas potentially impacted 4) SMP, Section B required 5) Comply with requirements of MCAQMD Regulation 2 6) May be queued. 7) SMP, Section C required if Smoke Sensitive Areas were impacted. 8) Must complete and turn in SMP Section D to District at end of burn.
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<ul style="list-style-type: none"> • Air district SMPs must require, as appropriate, daily coordination between the land manager or his/her designee and the air district or the ARB for multi-day burns which may impact smoke sensitive areas, to affirm that the burn project remains within the conditions specified in the smoke management plan (burn plan), or whether contingency actions are necessary. [1] • The state (CARB) now offers a 2-day smoke management workshop several times per year in various locations in the state.
Minimizing Air Pollutant Emissions	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are</p>	<ul style="list-style-type: none"> • Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of non-burn alternatives. [1] • Air district SMPs must require the submission of smoke management

emission reductions tracked?	plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain an evaluation of alternatives to burning considered. [1]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • In the case where, by special permit, an air district authorizes burning on days designated by the ARB as no burn days, a district will limit the amount of material which can be burned in any one day and only authorize burning which is not likely to cause or contribute to exceedences of air quality standards or result in smoke impacts to smoke sensitive areas. [1] • Air district SMPs must include a daily burn authorization system that regulates burning in order to minimize smoke impacts on smoke sensitive areas, avoid cumulative smoke impacts, and prevent public nuisance. [1] • Air district SMPs must include procedures for addressing cross-jurisdictional smoke impacts by coordinating with neighboring air districts, regions, or states. [1] • Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices. [1] • Air district SMPs must provide, if necessary, procedures for prioritizing burning that districts can use to minimize smoke impacts. Efforts to reduce smoke emissions must also be considered. [1] • Air district SMPs must require vegetation to be in a condition that will minimize the smoke emitted during combustion when feasible. [1] • Air district SMPs must require material to be burned to be piled where possible, unless good silvicultural practices or ecological goal dictate otherwise. [1] • Air district SMPs must require piled material to be burned to be prepared so that it will burn with a minimum of smoke. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	• Districts SMPs must include plans to provide for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [2]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP?	• Air district SMPs must require the submission of smoke management

What information must be included?	<p>plans for all burn projects greater than 10 acres or estimated to produce more than one ton of particulate matter. These plans must contain, at a minimum, the following information: location, types, and amounts of material to be burned; expected duration of the fire from ignition to extinction; identification of responsible personnel, including phone contacts; and identification and location of all smoke sensitive areas. [1]</p> <ul style="list-style-type: none"> • Air district SMPs must require the submission of more detailed smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain the information above and the following additional information: identification of meteorological conditions necessary for burning; the smoke management criteria the land manager or his/her designee will use for making burn ignition decisions; projections, including a map, of where the smoke from burns is expected to travel; specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan; an evaluation of alternatives to burning considered; and discussion of public notification procedures. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Air district SMPs must include a daily burn authorization system that will not allow more burning on a daily basis than is appropriate for the meteorological or air quality conditions. Meteorological conditions to be evaluated include wind speeds and directions at the surface and aloft, and atmospheric stability. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain discussion of public notification procedures. [1] • Air district SMPs must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain specific contingency actions that will be taken if smoke impacts occur or

	meteorological conditions deviate from those specified in the plan. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Air district SMPs must include a description of the meteorological and air quality monitoring data to be used to provide data for determining the basinwide meteorological and air quality conditions. [1] • Air district SMPs must require smoke management plans (burn plans) to include appropriate monitoring as required by the district for the following burn projects: projects greater than 250 acres; projects that will continue burning or producing smoke overnight; projects conducted near smoke sensitive areas; or as otherwise required by the district. [1]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Air district SMPs must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1] • The ARB has established a working group which will develop recommendations for public education and outreach efforts. The ARB also has a web site where information relating to ARB's smoke management program is posted. [2]
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	• Air district SMPs must include procedures for enforcement. The Guidelines do not further elaborate on enforcement procedures. [1]
18. What penalties are authorized for non-compliance?	• Air district SMPs must include procedures for enforcement. The Guidelines do not further elaborate on enforcement procedures. [1]
19. Are post-burn reports required? What information is required?	Post burn reports required for burns >250 acres or burns where smoke impacts occurred. See Section C and D of District SMP.
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	• Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [1]
21. What are the review criteria?	See Question 20.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described?	• Burns greater than 10 acres must identify the location of smoke sensitive areas. [2]

What additional smoke management requirements apply in special protection zones?	
23. Does the program establish any performance standards? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The ARB's smoke management program provides a collaborative framework to provide for increased opportunities for managed burning while allowing California to meet health-based air quality standards and federal visibility requirements. No specific "performance standards" however have been adopted. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Not applicable. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The State and many local counties do have nuisance regulations which apply to smoke impacts from prescribed and agricultural burning. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • The districts' current smoke management rules are included as part of the SIP. New rules adopted due to the new requirements of the revisions to Title 17 will supersede the old rules when new PM and regional haze SIPs are submitted. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	See Question 6.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The State compiles estimates of prescribed burning emissions. These estimates are computed by local districts. The level of effort and completeness of these estimates varies. All of the districts compile annual estimates, but these estimates are not necessarily updated each year. Generally the emission estimates include seasonal profiles which can be used to apportion annual emissions by month based on historical burning trends. Daily estimates are not computed. In most regions, prescribed fire emissions are based upon either permitted acreage, or

	post burn annual summaries. It is not yet common practice to base emission estimates on fire-specific post-burn reports that include information on fuel type, condition, and consumption. However, the State is involved in efforts to substantially improve the completeness and uniformity of prescribed burning emission estimates. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• Not at the current time. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• Information not provided.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	None.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	None.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From Communication with Mohave Desert AQMD, California 3/20/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Air district has the regulatory authority, which is delegated to SCAQMD meteorological staff (and state air agency meteorological staff).
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	Informal MOU with upwind agency (SCAQMD).
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	I believe so – refer to CARB response for state mandates.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	All not otherwise permitted open burning is covered by our burn permit program.
5. How do land managers apply for authorization to burn?	Through prescribed burn plans.
6. What are the criteria for getting permission to burn?	Total daily acreage limits; refer to CARB response.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	Not formally – yes, at the state level.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are	Refer to state level response. Emission reductions are not tracked locally.

emission reductions tracked?	
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Timing of ignition and duration of burns. Extent burned within each plan. Dispersion conditions.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Yes, within each prescribed burn plan.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Yes. Refer to state response for required elements.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Within regional guidelines or burn envelopes established by the state. No specific haze requirements are addressed to my knowledge.
13. Must the affected public be notified of planned fires? Please describe.	I am not aware of notification by land managers.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Refer to state response.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	Not within the MDAQMD or AVAQMD.
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP?	Refer to state response.

What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Refer to state response.
18. What penalties are authorized for non-compliance?	Refer to state response.
19. Are post-burn reports required? What information is required?	Not at this time.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	Refer to state response.
21. What are the review criteria?	
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Not within the MDAQMD or AVAQMD.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	Not at this time.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	N/a
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes. No. Typically number of complaints, but to my knowledge the District has not determined any prescribed burns to be nuisances.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	Refer to state program.
27. How does the State and/or local districts fund	No local fees are charged by the District. Some local fire agencies

operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	charge a nominal fee (\$5) for administering burn permit programs on behalf of the District (those fees are solely the responsibility of the agencies charging them).
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	Annual inventory, based on burn permits issued and prescribed burn reports.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Not locally.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	Refer to state response.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	Not by the MDAQMD or AVAQMD.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	Not by the MDAQMD or AVAQMD. The MDAQMD encourages mowing of weeds in place of clearing and burning.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

**From Communication with Monterey Bay Unified APCD, California 5/7/02
Smoke Management Program Components Regarding Vegetative Management**

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	The California Air Resources Board makes the declaration whether a particular day is a burn or no burn day. Our regional District (MBUAPCD) issues authorizations for who may burn on a particular day.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	This regional District (MBUAPCD) has voluntary/courtesy coordination with the following regional agencies: San Francisco Bay Area Air Quality Management District (BAAQMD); San Joaquin Valley Unified Air Pollution Control District (SVUAPCD); and San Luis Obispo County Air Pollution Control District (SLOAPCD). There is also mandatory coordination with CARB for larger prescribed burn projects.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Yes.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural, which covers prescribed burning, i.e., land which is cleared by burning for a specific vegetation management purpose.
5. How do land managers apply for authorization to burn?	Call in to this District within 24 hours of burn, or earlier. (This presumes that a permit has been issued and is valid for the time period in question).
6. What are the criteria for getting permission to burn?	Submittal of complete smoke management permit application form, which also serves as the smoke management plan; inspection of project area for verification of information; issuance of smoke management permit with approval of smoke management plan; day for burning must be declared a permissive burn day by the CARB, or the burn must be declared a “test burn” by the MBUAPCD and CARB staff; the size of other burns already planned in the air basin. There are exemptions available for specific types of burn that are part of the State Health and Safety Code.
7. Have operating agreements been established	No. No. The CARB offers smoke management training in conjunction

between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	with the Interagency Air and Smoke Council, of which this District is a member agency.
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	Alternatives are considered by the project proponent. If emission reduction techniques are used, the amount of acreage that may be burned at any one time increases.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Drying times for fuel; fuel moisture content; fuel arrangement, if piles are burned. Burn prescription that includes consideration of smoke sensitive receptors downwind, e.g., wind speed and direction; mixing height.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Yes. Will go into our database, particularly if fires create smoke impact.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Yes. See attached file.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Authorizations limited to days that have been declared burn days by the CARB, which are those days which are predicted to have good conditions for smoke dispersion. Authorizations
13. Must the affected public be notified of planned fires? Please describe.	Yes. Notification depends on project. See attached file.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Yes. Criteria is if there are ground level impacts to the public or to public roadways.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are	Smoke impacts must be monitored by project proponent. In some cases, the District will also monitor, if there is a significant potential for smoke impacts on populated areas. Requirements vary with project size, complexity and location. See attached file. If there are complaints received by either the District or the burner, the burn must be terminated.

taken if they are exceeded?	
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	We have an Open Burn Task Force whose members come from the private and public sectors. We hold workshops and have press releases on various aspects of our burn program. We have issued public service announcements which encourage the use of alternatives to burning vegetative waste.
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Monitoring, either visually or with portable monitors. Field inspections before and during fires.
18. What penalties are authorized for non-compliance?	Monetary penalties under provisions of the California Health & Safety Code.
19. Are post-burn reports required? What information is required?	Yes, for burns over 250 acres in size, or for any burn that results in complaints being received.
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	This is automatic.
21. What are the review criteria?	If complaints are received.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Smoke Sensitive Areas, of which there is only one. This is the Carmel Valley, a geographic region of the District. The number of burns that can happen at any given time is further limited in this area.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	Presuming this refers to the burner – acreage limits and public smoke impacts.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	If there are public smoke impacts, require post-burn evaluation.
25. Do State and/or local nuisance regulations apply	Yes. No. Complaints from public or observation of smoke impacts by

to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	District staff.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	Yes.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	Out of General Funds. No permit fees.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	Yes. Yes.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	No.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	The California Air Resources Board would include our Smoke Management Program as part of the State's Smoke Management Program.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated	No. No. No.

vegetation with herbicides?	
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

Answers from NEAA (North East Air Alliance), California original survey response in 2000.

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

[1] Northeast Air Alliance Smoke Management Plan.

[2] Comments received from USDA Forest Service, Quincy, CA on August 3, 2000 and Susanville, CA on September 22, 2000.

Special Notes:

- A smoke management plan is not required for prescribed burn projects less than 10 acres in size.
- This survey was reviewed by the USDA Forest Service. For more information, contact LouAnn Charbonnier, USDA-FS, 159 Lawrence Street, P.O. Box 11500, Quincy, CA, 95971, or Larry Hood, USDA-FS, Lassen National Forest, 2550 Riverside Drive, Susanville, CA, 96130.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The appropriate air district official approves or disapproves the smoke management plan, which is part of the overall burn plan review process. The smoke management plan serves as a conditional permit to burn, when used in conjunction with its standard single-page permit to burn. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none">• The smoke management plan is a cooperative agreement among the Northeast Air Alliance (NEAA) members. [1]• The NEAA coordinates with the appropriate air districts in review and approval of the smoke management plan. Individual air districts may require supplemental information if the proposed burn project is extremely large, likely to adversely impact smoke sensitive areas such as a Class I airshed, likely to have multi-jurisdictional smoke impacts, or contain other site-specific complexities which would require the need for further information. [1]• Region 5 has a MOU with the California Air Resource Board. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none">• A smoke management plan is required for all prescribed burn (forest management, range improvement and wildland vegetation management burning) conducted by land managers within the area encompassed by the NEAA. [1]
4. What types of burning (agricultural, silvicultural,	<ul style="list-style-type: none">• Forest management (described as the use of open fires as part of

other) are covered by the program?	<p>forest management practice to remove forest debris or for forest management practices which include timber operations, silvicultural practices, or forest protection practices), range improvement (described as the use of outdoor fires to remove vegetation for wildlife, game or livestock habitat or for the initial establishment of an agricultural practice on previously uncultivated land) and wildland vegetation management (described as the use of prescribed burning conducted by a public agency, or through a cooperative agreement with a private manager or contract involving a public agency, to burn land predominately covered by chaparral, trees, grass, or standing brush) burning as well as wildfire managed for resource benefit (described as the use of naturally occurring fire exceeding ten acres in size to achieve resource management objectives) are covered by the smoke management plan. [1]</p>
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Land managers must complete the smoke management plan and submit it to the appropriate air district official. For wildfire managed for resource benefit, the smoke management plan must be submitted within 72 hours of project declaration. The smoke management plan contains the following 15 sections: I. General Information, II. Project Information, III. Emissions Estimates, IV. Wind Prescription, V. Smoke Dispersal Surveillance and Monitoring, VI. Identification of Smoke Sensitive Areas, VII. Mitigations, VIII Evaluation of Alternatives to Burning, IX Contingencies, X. Public Notification, XI. Complaint Procedures, XII. Contacting Responsible Officials, XIII. Certification, XIV. Maps, XV. Reports and XVI. Approvals. [1] • For burn projects primarily implemented for wildlife and game habitat improvement, the land manager must file with the appropriate air district a statement from the California Dept. of Fish and Game certifying that the burn is desirable and proper and specifying if any brush treatment or other objectives which are desired. The USDA Forest Service is not required to get a statement from California Dept. of Fish and Game [1][2] • The land manager must comply with all applicable air district and State of California regulations. The smoke management plan is one part of an overall burn plan review process. Individual air districts may require

	supplemental information if the proposed burn project is extremely large, likely to adversely impact smoke sensitive areas such as a Class I airshed, likely to have multi-jurisdictional smoke impacts, or contain other site specific complexities which would require the need for further information. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> The land manager must have an approved smoke management plan, be in compliance with all State, District and local regulations and submit the certification from the California Dept. of Fish and Game (if necessary). [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> Title 17 and R5 Supplement 5140 (draft) establishes some additional qualifications needed if burning in a nonattainment area. [2]
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> Evaluation of alternatives to burning are addressed in the applicable National Environmental Policy Act (NEPA) documents. This document is attached to the SMP or a detailed narrative of how alternatives to burning were considered is included in the SMP. [2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> The following mitigation actions may be required for an approved smoke management plan: the number of acres or piles to be burned per day may be limited; the number of piles to be burned at one time may be limited; the hours between ignition of piles/units may be specified; mop-up may be required after a certain number of hours of ignition; ignition times may be limited. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> The actions taken to minimize emissions before and during fires are specified in the smoke management plan. [1]
Smoke Management Components of Burn Plans	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> Written burn plans are required by the air districts. The smoke management plan does not discuss what information must be included. [1]
12. How must smoke dispersion conditions be	<ul style="list-style-type: none"> Smoke monitoring is required if the project is conducted near smoke

evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<p>sensitive areas or if the smoke from the project may impact smoke sensitive areas, smoke monitoring is required on all projects over 250 acres/day and on those projects that would continue burning or producing smoke overnight. [1]</p> <ul style="list-style-type: none"> • Smoke dispersal surveillance and monitoring is accomplished by the following methods indicated in the smoke management plan: balloon, RAWS, aircraft, visual monitoring, weather forecast and on-site weather observations. [1] • A test burn is conducted on a small portion of the project area prior to project implementation. [1] • As part of the smoke management plan, the land manager must provide a wind prescription that describes ideal, acceptable and unacceptable wind direction and identification of potential meteorological conditions that would inhibit acceptable smoke dispersal. [1] • The smoke management plan asks the land manager to indicate if the burn project is likely to impact a Class I airshed. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Public notification actions are required to advise the public and known sensitive receptors that prescribed burning will be conducted in their vicinity and to assure the public that measures will be taken to minimize the smoke impacts. The land manager must comply with all the public notification actions indicated in the smoke management plan. These actions may include notification by radio, newspaper, television, posters/flyers/letters, personal contact and signing. [1] • If potential impacts are identified in Section VI (Identification of Smoke Sensitive Areas) of the smoke management plan, additional notifications may be required within the potentially impacted area. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • If adverse smoke impacts affect any smoke sensitive area the following contingency actions may be required: halt ignitions (except as needed to maintain control of the fire), allow the fire to burn to contingency control lines, suppress the fire, begin immediate mop-up, begin mop-up within a certain number of hours of problem identification and complete mop-up within a certain number of initiation. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being	<ul style="list-style-type: none"> • Smoke monitoring is required on all projects over 250 acre/day, those that would produce emissions over multiple days, and projects near

monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<p>smoke-sensitive areas. The land manager must list the method/location of visual monitoring and the interval between dispersal monitoring observations in the smoke management plan. [1]</p> <ul style="list-style-type: none"> • The land manager must provide a wind prescription that describes ideal, acceptable and unacceptable wind direction and identification of potential meteorological conditions that would inhibit acceptable smoke dispersal. [1]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • A public education and awareness program has been identified by the NEAA as a future action item. Currently public notification of burning is done through one or more of the following, which is identified in the SMP: radio, newspaper, television, posters/flyers/letters, personal contact, and signing.
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • All smoke related complaints must be forwarded immediately to the appropriate air district and a log of all complaint calls related to a burn project is kept in the project file folder for a period of one year from the conclusion of the burn project. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • None at this time. When fully implemented penalties in CA State Health and Safety Code will apply. [2]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • A post-burn smoke management evaluation/summary is required to be kept in the project folder and is subject to review by the appropriate air district. The available information does not discuss what information is required. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Post burn smoke management evaluations are subject to review by the Air District. California Air Resources Board (CARB) will periodically review statewide effectiveness. [2]
21. What are the review criteria?	<ul style="list-style-type: none"> • Title 17 of the California Administrative Code. [2]
Optional Air Quality Protection	
22. Does the program establish any special	<ul style="list-style-type: none"> • The smoke management plan does not describe smoke sensitive areas

protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	but does ask the land manager to identify them on a map. [1] <ul style="list-style-type: none"> • The smoke management plan asks the land manager to indicate if the burn project is likely to impact a Class I airshed. [1] • If adverse smoke impacts affect any smoke sensitive area the following contingency actions may be required: halt ignitions (except as needed to maintain control of the fire), allow the fire to burn to contingency control lines, suppress the fire, begin immediate mop-up, begin mop-up within a certain number of hours of problem identification and complete mop-up within a certain number of initiation. [1]
23. Does the program establish any performance standards”? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Performance standards are to maintain State and Federal ambient air quality standards and avoid public nuisance per State Health and Safety Code section 41700. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Unknown. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Yes. [2] • Yes. [2] • Each Air District determines criteria. One district uses 3 un-orchestrated complaints as nuisance criteria. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Unknown. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • This varies by Air District. Currently some charge permit and acreage fees. Other districts fund programs through general program revenues. Once Title 17 is finalized permit fees will be implemented and it is anticipated that more districts will be supported by fees. The basis for fees will be determined by each district and will probably be a combination of permit fees, and acreage fees that may vary by type of burn. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the	<ul style="list-style-type: none"> • Section III of the smoke management plan asks land managers to estimate total PM10 emissions in tons. [1] • Some Air Districts maintain an inventory and some do not. [2]

emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Actions vary greatly by project but methods utilized for minimizing emissions include biomass thinning, and removal of unutilized material. Section VII Mitigations in the SMP include options for limiting ignition to specified number of acres/piles per day; limiting number of acres/piles burned at one time; hours between ignition of piles/units; limiting ignition times. Section IX of the SMP includes contingencies for mop up. There are no mechanisms in place at this time to record emission reductions achieved. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Not at this time. [2]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From Communication with North Coast Unified Air Quality Management District, California 5/8/02

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Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	The Air Quality District (AQMD) has authority to issue daily burn authorizations. The California Air Resources Board (CARB) issues daily burn/no burn day determinations for the air basin.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	Shasta, Siskiyou, Mendocino AQMD’s and Oregon State. No formal MOU’s. Coordination entails notification of burns that may impact other jurisdictions.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Participation mandatory. Requirements for other burners not under SMP contained in AQMD open burning regulations.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural and prescribed burning over 10 acres. Ag includes field crops and silvicultural. Prescribed is public agency land management.
5. How do land managers apply for authorization to burn?	Submit burn registration prior to burn, which includes smoke management plan.
6. What are the criteria for getting permission to burn?	Call as close as possible to ignition of burn to obtain authorization to ignite from the District. Prescription must be within specs of registered smoke management plan.

7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	In the past some have, by cooperative agreement. The smoke management program has superceded these. No training requirements contained in SMP. Training offered through CARB in smoke management techniques.
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	Alternatives considered at the land manager level. No established incentives for alternatives. Reductions not tracked.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Best management practices in conducting burns (rapid ignition, minimum drying times if applicable, follow meteorological prescription, mop up of smoldering piles, etc.).
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Not required per SMP. Any enforcement action arising from burn activities would consider efforts to minimize emissions so in land managers best interest to document such efforts.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Yes. Responsible party info, location, fuel types, size and amount of fuel, burning method, meteorological prescription, contingency plan, smoke mitigation measures, public notification procedures, smoke sensitive areas.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Size and location dependent determination. In some cases where impacts unlikely general meteorological forecast sufficient; other times on site weather measurements required. Spelled out in burn registration. Visibility accounted for in sensitive receptor determination. No consideration of visibility issues beyond sensitive receptor impacts during burn.
13. Must the affected public be notified of planned fires? Please describe.	Yes. Size and location dependent determination. Varies between no notification required to public announcements over media outlets.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Yes. If smoke impacts populated areas designated as sensitive receptors in SMP then contingency actions must begin. Land manager expected to monitor and take action on own initiative.

15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	Only for large (100+) acres fires. Land manager in cooperation with AQMD. Primarily particulate (PM10). Depends on location and need, may only require one high-volume type sampler or real-time ambient concentration monitoring. No established thresholds.
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	Not formally. AQMD, in conjunction with CARB, held numerous workshops during development of SMP. No ongoing public process occurring however.
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Field investigation and air monitoring. AQMD has portable air monitoring equipment to document impacts.
18. What penalties are authorized for non-compliance?	Violation of AQMD open burning regulations - penalties up to \$1,000/day/violation. Violation of AQMD public nuisance regulations - penalties up to \$10,000/day/violation.
19. Are post-burn reports required? What information is required?	No.
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	No; although periodically reviewed by CARB.
21. What are the review criteria?	No response given.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	No. Sensitive receptors identified in SMP. No smoke impacts allowed in these areas.

23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	N/a
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes. Yes. Number of complaints - generally five verified complaints can be used for public nuisance.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	No.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	No direct funding. Revenue to run program from AQMD general fund. No fees associated with program.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	CARM maintains emission inventory. Emissions based on reported acres and/or tons burned (emission factor basis).
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Size and location dependent. In some cases no emission mitigation required. Other cases may require mop-up, fuel reduction, etc.) No mechanism to estimate emission reductions from such actions.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	No.

<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	Not at the AQMD level.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From Communication with Northern Sierra AQMD, California 3/28/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Air Pollution Control Officer (APCO) of the Northern Sierra Air Quality Management District (NSAQMD) reviews and approves smoke management plans. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The NSAQMD coordinates with the California Air Resources Board (ARB) for burn day determinations. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • A smoke management plan is required for all prescribed burns (forest management, range improvement and wildland vegetation management burning) greater than ten acres in size. The burner must fill out the smoke management plan form and submit it to the NSAQMD for approval. The required information is used to evaluate the effectiveness of the smoke management efforts of the burn project. Once approved by the NSAQMD, the smoke management plan serves as a conditional permit to burn, when combined with the standard single page permit to burn. [2] • Burners not covered under the smoke management plan may have to get a burning permit. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The smoke management plan discusses forest management burning (described as the use of open fires as part of a forest management practice, to remove forest debris or for forest management practices which include timber operations, silvicultural practices, or forest protection practice), range improvement burning (described as the use of outdoor fires to remove vegetation for a wildlife, game, or livestock habitats or for the initial establishment of an agricultural practice on previously uncultivated land) and wildland vegetation management burning (described as the use of prescribed burning conducted by a

	<p>public agency, or through a cooperative agreement with a private manager or contract involving a public agency, to burn land predominately covered with chaparral, trees, grass, or standing brush). [2]</p> <ul style="list-style-type: none"> • Regulation III covers agricultural, range improvement, forest management, wildlands vegetation management, land development clearing, ditch and road maintenance, hazard reduction, residential, mechanized and public disposal facility burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • District staff attends semi-annual North East Air Alliance and Mountain Counties Air Basin Smoke Management Alliance meetings. The major burn agencies present proposed burn projects for the upcoming burn season. SMP's are accepted throughout the year. • For range improvement burns over 10 acres the burner must obtain a valid permit and submit a burn plan and a smoke management plan. The burner must also submit to the APCO a written statement from the Department of Fish and Game that certifies that the burning is desirable and proper. [1][2] • For forest management and wildlands vegetation management burns over 10 acres the burner must obtain a valid permit and submit a smoke management plan. [1][2] • For land development clearing, ditch, road and right-of-way maintenance and hazard reduction burns the burner must obtain a valid permit and submit a burn plan. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The burner must have a valid NSAQMD permit, , an approved smoke management plan, and yearly notification must have been made to the APCO. Burn agency must contact the District via phone, fax, or email daily with proposed burn acres. District staff will either authorize or deny project for that day.[1] • Minimum drying times and burn management requirements must be met. [1] • It must be an approved burn day as authorized by the APCO, the ARB, and/or the fire agency with appropriate jurisdiction. [1] • Permissive-burn notice must have been received from ARB for range improvement, forest management and wildland vegetation management

	burns. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The state (CARB) now offers a 2 day smoke management workshop several times per year in various locations in the state.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The NSAQMD finds it more economically desirable to dispose of wood waste from trees, vines, and bushes from land development clearing by burning instead of burial at a sanitary landfill. [1] One section in the SMP asks if alternatives were considered or accomplished. If increases in burning causes competition for burn days in a given airshed, projects with emissions reduction techniques might be given top priority for burning over projects with no emissions reductions.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The smoke management plan states that mitigation must be used to reduce smoke impacts and lists the following items to be implemented as conditions of a permit: limiting the number of piles or acres to be burned one time or per day; requiring mop-up within a certain number of hours, requiring special weather conditions, and requiring burning within a certain time window. [2] • For range improvement burning, if economically and technically feasible, the brush should felled, crushed uprooted with mechanical equipment, or desiccated with herbicides or dead at least six months prior to the burn. [1] • Regulation III states that material to be burned must be arranged so that it will burn with a minimum of smoke; except for large trees (diameter of six or more inches), only the amount that can reasonable be expected to completely burn within the following 24 hours should be ignited in any one day; range improvement and wildlands vegetation management burns must be ignited only with approved ignition devices; material to be burned must be ignited as rapidly as practicable; burning must be curtailed, mitigated, or extinguished when smoke drifts into a nearby populated area or creates a nuisance; material to be burned must be reasonable free of dirt, soil, and moisture, and stacked in such a

	<p>manner as to insure combustion with a minimum of smoke; and minimum drying time requirements must be met. [1]</p> <ul style="list-style-type: none"> • If historical burn data for a given area is available, a burn project might be curtailed to minimize smoke impacts. Mitigations and contingencies discussed in the SMP should have already addressed this, though.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<p>Yes, the actions taken to reduce smoke impacts are listed in the smoke management plan. For burn project over 250 acres or at the District's discretion, a post burn evaluation would be submitted by the burn agency within 30 days of the projects completion [2]</p>
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Written burn plans are for burn agency use only. If additional information is necessary and is not included in the SMP, the air District may require the burn plan. The burn plan requires the following information: Location and specific objectives of the burn; acreage and tonnage, type and arrangement of vegetation to be burned; directions and distance to nearby sensitive receptor areas; fuel conditions, combustion and meteorological prescription elements developed for the project; projected schedule and duration of project ignition, combustion, and burn down; specifications for monitoring and verifying critical project parameters; and specification for disseminating project information. [1] • The smoke management plan form requires the following information: general information on location, elevation, vegetation type, acreage, project type and category; emissions estimates; wind direction; smoke dispersal surveillance and monitoring; identification of smoke sensitive areas; smoke impact mitigation actions; contingency actions; public notification actions; complaint procedures; responsible official contact information; and burn project maps. [2]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • The smoke management plan must include a wind prescription that includes ideal, acceptable and unacceptable surface and aloft wind direction. Potential meteorological conditions that would prohibit acceptable smoke dispersal must be identified. The burn agency must specify if and how they will monitor the smoke path. District staff might also monitor smoke. [2] • If smoky or hazy conditions exist or if air monitors suggest high PM-10

	levels, a burn project might be shut down until clearing has occurred. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • The smoke management plan requires actions to advise smoke sensitive areas that burning is planned and to assure that actions are being done to minimize the impact of smoke. The actions may include the following types of notification: radio stations, newspaper, posters/ flyers/letters, television, door-to-door, signing and personal phone calls. The burner must describe the activity and timing. Additional notifications may be required if smoke sensitive areas are expected to be impacted. [2] • The burn plan requires specifications for disseminating project information. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Contingency actions must be taken if smoke impacts a smoke sensitive area. The contingency actions that are required may include the following: stop ignitions, except as needed to maintain control of fire; fire suppression; immediate mop-up; mop-up within a certain number of hours and complete mop-up within a certain number of hours. The burner must list the equipment that will be on-scene or readily available to implement the contingency actions. [2]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Smoke surveillance and monitoring is accomplished by all of the techniques indicated in the smoke management plan. The techniques can include test fires, balloon, RAWs, aircraft, and visual monitoring. Method and location of visual monitors and the interval of smoke dispersal monitoring are also listed in the smoke management plan. Air monitors that are operating during smoke impact are collected and evaluated. If necessary, public service announcements are issued via radio stations. Post burn evaluations must list smoke direction. Data collected will allow, disallow, or curtail future projects in the same airshed. [2] • The burn plan must include specifications for monitoring and verifying critical project parameters. [1]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of	<ul style="list-style-type: none"> • Although the available information does not specifically discuss a public education program, there are established public complaint procedures listed in the smoke management plan [2]

your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The District encourages and participates in public outreach and education programs mainly offered by the burn agencies. [2] • The District has a web site available for public access. [2] • The SMP is a living document that was developed in coordination with major burn agencies and the other air districts in the Mountain Counties Air Basin. [2]
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • All smoke related complaints must be forwarded immediately to the NSAQMD and a log of all complaint calls related to a burn project is kept in the project file folder for a period of one year from the conclusion of the burn project. [2]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Violation of the Regulation III is a misdemeanor, punishable by criminal or civil penalties and the cost of putting out the fire. Every day during any portion of which such violation occurs, constitutes a separate offense.[1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • See #10 [2].
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Semi-annual meetings of the Northeast Air Alliance and the Mountain Counties Air Basin Smoke Management Alliance includes a forum to discuss successes and failures of the SMP or actual burn projects. [2].
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The smoke management plan identifies the following smoke sensitive areas: populations centers (e.g. towns, villages, developments), hospitals, schools, daycare centers, nursing homes, shopping centers, public events, and may also include campgrounds and trails inhabited by significant numbers of people. [2] • The smoke management plan asks the burner to identify (distance and direction from the fire) smoke sensitive areas or receptors that could be adversely affected by the burn. [2] • Contingency actions may be required if smoke sensitive areas are impacted by the burn. [2] • If smoke sensitive areas are expected to be impacted by the burn, additional public notifications may be required within the impacted area.

	<p>[2]</p> <ul style="list-style-type: none"> • All open burning is banned in the American Valley (all land within the boundaries of the Quincy Fire Protection District) from November 15 to March 15 of each year, except for at least 15 days when burning is allowed in the fall (the burn season may be extended to achieve 15 days if there are not 15 days in which to burn during November 15 to March 15). If a burn season is extended, burn hours for agricultural burning are restricted to the hours of 10 a.m. to 4 p.m. [1]
23. Does the program establish any performance standards? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The smoke management plan requires that all smoke related complaints must be forwarded immediately to the NSAQMD and a log of all complaint calls related to a burn project is kept in the project file folder for a period of one year from the conclusion of the burn project. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • The prescribed fire manager or incident commander will seek resolution for all complaints as necessary. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Regulation III states that burning must be curtailed, mitigated, or extinguished when smoke drifts into a nearby populated area or creates a nuisance. [1]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • In mid 2001, the state (CARB) received, reviewed, and approved the District's Smoke Management Program. [2].
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • The state allows local districts to assess fees to reasonable recover the cost of this program. The District conducted a cost study to justify charging a permit and acreage fee per project. These costs are, however, minimal and only cover a portion of the program cost. To assess fees that would recover the cost of the entire program would be cost prohibitive for many burn agencies. [2].
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports	<ul style="list-style-type: none"> • The District tracks and logs daily acres and tons/acre burned. An annual report is submitted to the state (CARB) by 2/15 of each year. [2].

(i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • The emission reductions realized by utilizing the reduction techniques listed in Section VI of the smoke management plan are recorded in the smoke management plan as tons of PM10. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • See # 26 [2].
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	None.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	None.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From Communication with Placer County APCD, California 4/9/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	California Health Safety Code outlines provisions to determine burn days daily. For Placer County this information is disseminated by the CARB and the Air District and or Fire Agencies can be more stringent.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	We don’t have a central authority. However for burning purposes we coordinate with neighboring air districts and states. No formal MOUs, its voluntary coordination.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Yes, as per California Code of Regulations, Title 17 and as per Air District adopted Smoke Management Programs. No.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural including Range Improvement, Forest Management, Wildland Vegetation Management, Habitat Improvement.
5. How do land managers apply for authorization to burn?	Submit an application for a burn permit, which may also include a submittal of a Smoke Management Plan. Once approved, work with Air District on optimum time to burn.
6. What are the criteria for getting permission to burn?	Burn Day, Available Acreage allocated per county per air basin, location of burn, time of day, amount to burn, wind direction, down wind impacts.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	No operating agreements. No requirements for burning qualifications. Yes, through the USFS RX450 class and through the California Air Resources Board.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to	Review in environmental documents. Location to smoke sensitive areas. Closeness to wildland urban interface. We don’t use incentives or disincentives for alternatives. Emission reductions are noted in Smoke

burning and emission reduction techniques? Are emission reductions tracked?	Management Plans, however they are not aggregate tracked.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Fuel moisture, burn on a burn day, burn to have smoke move away from sensitive areas, test fire use, use of met info to have a good burn, use of dispersion modeling when necessary.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Yes in the Smoke Management Plan.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Yes, see attached plan.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Evaluated meteorologically to assure that smoke produced does not create a smoke impact. Reg. Haz and Visibility impairments are not accounted for. No.
13. Must the affected public be notified of planned fires? Please describe.	Yes, see Plan for info.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Yes, see Plan for info.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	No, the smoke from the fire is monitored and if there are impacts this is added to the monitoring. Burner monitors and air district may also. Smoke intrusions into an area, visibility. Subjective requirements based public complaints. Information is used in order to plan better burns in the future. No thresholds or trigger levels unless a public smoke nuisance occurs, then steps are taken to decrease or eliminate the impacts.
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went	Not really, there is awareness but no outreach has been done. There is some info on our website, a couple of brochures, and ARB web info. The public files a complaint with either the fire agency or the air district or ARB. The SMP was developed with a group of air districts in the same air basin (s) and involved land managers. The program was noticed

through to involve the public developing your SMP? What is done on an ongoing basis?	publicly in numerous air district newspapers and no public comments were received. As the program evolves changes will be made to reflect the changes.
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Check with the ARB since they approve each Air District SMP.
18. What penalties are authorized for non-compliance?	Penalties are authorized under health and safety code.
19. Are post-burn reports required? What information is required?	Post burn reports are for burns greater than 250 acres. See plan.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	Reviewed yearly.
21. What are the review criteria?	Haven't had to do yet for one area and for the other modify, as we need to.
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Yes, for populated areas and smoke sensitive areas. For one area they are geographical boundaries and for the other, based before hand knowledge of the area. See item 6 above.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	The performance standards are to minimize smoke impacts to the public.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	Review of the burning which exceeded the public's tolerance for smoke and use it as an opportunity to learn.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<p>Yes. Yes.</p> <p style="text-align: center;">Our Nuisance Rule is: RULE 205 NUISANCE</p> <p>Adopted 12-08-70 (Amended 05-24-77)</p> <p>A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury,</p>

	<p>detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause to have a natural tendency to cause injury or damage to business or property.</p> <p>Exception: The provisions of RULE 205 do not apply to odors emanating from agriculture operations necessary for the growing of crops or raising of fowl or animals.</p>
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	Don't think so, but emissions may be accounted for in the SIP.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<p>Burn Permit Fee Acreage Fee Inspection Fee Smoke Management Plan Review Fee One Time Permit Re-Renewal Fee</p> <p>Basis is acres to be burned.</p>
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	Yes and based on post burn information.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Yes, noted in either an environmental document or on the smoke management plan.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	No, this program was adopted per the California Code of Regulations, Title 17.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or	<p>Don't know.</p> <p>Unaware of any.</p>

regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	Other requirements may be required to obtain a Air District stationary source permit to operate, may be required to comply with visible emissions requirements, many also have to comply with federal General Conformity requirements in the federal non-attainment/maintenance areas.

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

**From Communication with Sacramento Metro AQMD, California 3/19/02
Smoke Management Program Components Regarding Vegetative Management**

Source of summary information:

[1]The California Health and Safety Code, Agricultural Burning (CHSC)

[2]Title 17 of the California Code of Regulations (CCR), both current and revised.

[3]The Sacramento Valley Smoke Management Program (formerly called the Annual Agricultural Burn Plan.)

Sacramento Basin Burn Coordinator: Fife Environmental

[4]Sacramento Metro Air Quality Management District Rule 501, Agricultural Burning. Available at <http://www.airquality.org/rules/rule501.htm>.

[5]Sacramento Metro Air Quality Management District Rule 303, Agricultural Burning Permit Fees. Available at <http://www.airquality.org/rules/rule303.htm>.

[6]Sacramento Valley Basinwide Air Pollution Control Council's Smoke Management Plan Template for prescribed burning permit applicants.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	The Sacramento Metro Air Quality Management District (SMAQMD). The APCO contracts the field elements of this program to the local Agricultural Commissioner.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<p>SMP participants also include certain local agricultural departments, fire districts, the ARB Meteorology and Compliance Program Review staff, Weather Network and the Basin Burn Coordinator. Current SMP provisions require districts to notify adjacent districts whenever a considerable number of acres to be burned are allocated to a zone contiguous to another district. [3]</p> <p>The current SMP also provides that if the SMAQMD forecasts a Spare The Air Day (based upon the EPA Air Quality Index for the Federal 8-hour ambient standard for ozone), the SMAQMD will notify adjacent air districts. These adjacent air districts are those within the Sacramento Federal Ozone Nonattainment Area. The SMP further requires these districts to declare no burning in specified adjacent zones for the day(s) of the forecast. The SMAQMD also notifies the ARB and the Basin Burn Coordinator. The SMP also contains a provision for districts to voluntarily declare no-burn days on days forecast to exceed the ozone standard in Shasta County. [3]</p>

	In addition, the SMAQMD also meets, at least annually, with ARB staff, Bay Area and San Joaquin Unified air district representatives, and related Sacramento River delta fire officials and burners to discuss and reduce smoke transport issues from burning in the delta area.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Yes.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural and prescribed burning.
5. How do land managers apply for authorization to burn?	<p>A valid permit must be obtained from a district or designated agency prior to burning. Each applicant for a permit must provide information requested by the district and the designated agency. [2]</p> <p>SMPs must include procedures for acquiring information on amounts of material burned on each day, on planned and unplanned wildfires, and other information needed to establish the burn authorization for the following day. [2]</p> <p>SMPs must require registration of all planned burn projects annually or seasonally, including areas considered for potential naturally-ignited wildland fires managed for resource benefits, with updates as they occur. SMPs must require submission of smoke management plans (burn plans) within 72 hours of the start of the fire for naturally-ignited wildland fires managed for resource benefits that are expected to exceed 10 acres.[2]</p> <p>SMPs must require the permit applicant to file with the district a statement from the Department of Fish and Game certifying that the burn is desirable and proper if the burn is to be done primarily for improvement of land for wildlife and game habitat. [2]</p>
6. What are the criteria for getting permission to burn?	<p>The ARB will announce by 3:00 p.m. every day for each of the state's air basins or other specified areas whether the following day is a permissive burn day or no-burn day, or whether the decision will be announced on the following day. If conditions preclude a forecast until the next day, the decision will be announced by 7:45 a.m.[2]</p> <p>Burning must comply with all conditions specified on the permit, which must have district approval consistent with the Guidelines. [2]</p>

	<p>An air district may, by special permit, authorize burning on days designated by the ARB as no-burn days if the denial of such permit would threaten imminent and substantial economic loss. [2]</p> <p>Air district SMPs must include procedures for authorizing burning, including a procedure for authorizing individual prescribed burns no more than 24 hours prior to ignition of fire. [2]</p> <p>Air district SMPs must require district review and approval of smoke management plans. [2]</p>
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<p>SMPs must require, as appropriate, daily coordination between the land manager or his/her designee and the air district or the ARB for multi-day burns which may impact smoke sensitive areas, to affirm that the burn project remains within the conditions specified in the smoke management plan (burn plan), or whether contingency actions are necessary. [1]</p> <p>In addition to the annual SMP public workshop and hearing process, the SMP provides for an annual educational and informational meeting for growers, which covers the burning program policies and procedures. [3]</p>
<i>Minimizing Air Pollutant Emissions</i>	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<p>The Rice Straw Burning Reduction Act requires the phase-down of rice straw burning in the Sacramento Basin. The Act facilitates the exploration of alternatives to burning. California law also provides economic incentives for alternatives demonstration projects and tax relief for end users. ARB and CDFA administer these programs.</p>
<p>9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?</p>	<p>Permittees must ignite fires with an approved ignition device and as rapidly as practicable. Specific lighting techniques such as backfiring and stripfiring into the wind for certain field crops are intended to minimize particulate emissions. Waste must be physically arranged to burn with a minimum of smoke, minimum drying times must be adhered to or waste must pass the "crackle test" (a test to check the moisture content of rice straw) and materials must be reasonably free of excessive dirt, soil, and visible surface moisture. [2][3][4]</p> <p>The SMP is the primary mechanism to restrict acreage on any given burn day, although the APCO may further restrict burning in general by</p>

	<p>declaring a no burn day as noted above. The SMAQMD, through the Agricultural Commissioner, authorizes specific times and sites for burning on each burn day to protect downwind areas. Acreage allocation decisions are made close to the actual burning times in order to improve forecast reliability and burning, meteorology, and air quality conditions are reviewed throughout the day. Maps are used to plot burns in relation to wind speed and direction and distance to downwind populated areas. [3]</p> <p>Permittees must adhere to ignition hours described in the SMP as specifically shown on their permits or as otherwise declared by the APCO. [3][4]</p>
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Pursuant to the SMP, the basin burn coordinator maintains various burn statistics for each district and the basin.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<p>Yes. The SMAQMD's Rule 501 has supported these requirements. In addition, Title 17 has for many years required the Sacramento Valley Basinwide Air Pollution Control Council (BCC) and its technical Advisory Committee (TAC) to prepare an Annual Agricultural Burning Plan for "agricultural operations" burning, i.e. burning by growers and raisers of livestock, in the basin. Recent revisions to Title 17 require all California districts to prepare an SMP, for both agricultural operations and prescribed burning, by July 1, 2001. In the case of the Sacramento Basin, this SMP replaces the Annual Agricultural Burn Plan. The current Agricultural Burn Plan has been renamed to the Smoke Management Program. The SMP continues to place responsibility and authority on local air districts for implementation. [2][3]</p> <p>The CHSC provides that ARB shall designate no-burn days [1]. During the intensive fall burn season, the SMP provides that the Basin Burn Coordinator will announce the basin burn day decisions. [3] The SMAQMD may declare no-burn days even when ARB does not, when the SMAQMD forecasts an exceedance of an air quality standard [4]. In</p>

	<p>addition, local fire jurisdictions may, through their own authority, declare no-burn days superceding any decision made by either the ARB or the SMAQMD.</p> <p>SMPs must require the submission of smoke management plans for all burn projects greater than 10 acres or estimated to produce more than one ton of particulate matter. These plans must contain, at a minimum, the following information: location, types, and amounts of material to be burned; expected duration of the fire from ignition to extinction; identification of responsible personnel, including phone contacts; and identification and location of all smoke sensitive areas. [1]</p> <p>SMPs must require the submission of more detailed smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain the information above and the following additional information: identification of meteorological conditions necessary for burning; the smoke management criteria the land manager or his/her designee will use for making burn ignition decisions; projections, including a map, of where the smoke from burns is expected to travel; specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan; an evaluation of alternatives to burning considered; and discussion of public notification procedures. [1]</p>
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<p>The SMAQMD primarily relies upon the burn day decision made by the ARB pursuant to the SMP. Those decisions are based upon a wide array of meteorological and air quality data sets, including 1) atmospheric stability, inversion heights, and depth of the mixing layer; 2) wind speeds and direction (upper level and surface); 3) relative humidity; 4) baseline air quality Coefficient of Haze (COH), PM10, Bscat data and airport visibilities. Daily decisions on burning attempt to match the variable acreage amount with the meteorological dispersion capacity and considering the beginning baseline air quality level. During the fall burn season, meteorological information regarding current morning and forecast afternoon conditions are disseminated. The SMP also requires routine review of burning, meteorology, and air quality conditions throughout the day depending upon the circumstances. [3]</p>

	<p>During ozone season the SMAQMD relies, in addition, upon its ozone forecast to make burn decisions. The SMAQMD is exploring the feasibility of no-burn days based upon particulate matter forecasts.</p> <p>Rule 501 enables the APCO to restrict burning or declare a no-burn day if burning will cause a violation of State or Federal ambient air quality standards including the State visibility standard. [4]. However, the SMAQMD does not contain any Class I areas. Under the SMP, FAA hourly airport visibility observations are factored into daily burn decisions.</p>
13. Must the affected public be notified of planned fires? Please describe.	<p>In addition to the annual SMP public workshop and hearing process, the SMP provides for an annual educational and informational meeting for growers, which covers the burning program policies and procedures. [3] In addition, the Agricultural Commissioner contacts each grower through the permitting process.</p> <p>Effective 9-1-2000, for prescribed burning, the CCR requires procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. The SMAQMD has very little prescribed burning. These requirements, however, are now made part of the permittees Smoke Management Plan.</p> <p>The ARB provides burn day information to the public via the Internet; however, this is general information only. It is not an indication of whether or not individual fires have been authorized. The web pages also contain the names and phone numbers of the air quality districts in the Valley</p>
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<p>The SMP is the primary mechanism to restrict acreage on any given burn day, although the APCO may further restrict burning in general by declaring a no burn day as noted above. The SMAQMD, through the Agricultural Commissioner, authorizes specific times and sites for burning on each burn day to protect downwind areas. Acreage allocation decisions are made close to the actual burning times in order to improve forecast reliability and burning, meteorology, and air quality conditions are reviewed throughout the day. Maps are used to plot burns in relation to wind speed and direction and distance to downwind populated areas. [3]</p>

	<p>Permittees must adhere to ignition hours described in the SMP as specifically shown on their permits or as otherwise declared by the APCO. [3][4]</p> <p>SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan. [2]</p>
<p>15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?</p>	<p>SMPs must include a description of the meteorological and air quality monitoring data to be used to provide data for determining the basinwide meteorological and air quality conditions. [2]</p> <p>Air district SMPs must require smoke management plans (burn plans) to include appropriate monitoring as required by the district for the following burn projects: projects greater than 250 acres; projects that will continue burning or producing smoke overnight; projects conducted near smoke sensitive areas; or as otherwise required by the district. [2]</p>
<i>Public Education and Awareness</i>	
<p>16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?</p>	<p>The annual revision to the SMP includes public workshops and hearings to solicit comments from interested persons and explain the program goals and requirements. [3] In addition, the SMAQMD maintains a broad-based outreach program, which includes aspects of agricultural, residential and fireplace burning. A brochure and web-based information discussing how to minimize wood smoke and explaining the negative health effects of wood smoke are available to the public.</p>
<i>Surveillance and Enforcement</i>	
<p>17. What actions can be taken by the central authority to monitor compliance with the smoke management program?</p>	<p>The CHSC contains specific provisions criminal and civil violations of air pollution laws. A burn permit may be suspended or revoked pursuant to Rule 501. [4]</p> <p>The SMP strengthens enforcement of the agricultural burning program requirements through aerial and ground surveillance to ensure compliance. [3]</p>
<p>18. What penalties are authorized for non-</p>	<p>The SMAQMD has a board-approved Mutual Settlement Program (MSP)</p>

compliance?	through which most violations are handled. If a case is deemed unsuitable for this MSP process, the APCO may refer the case as a criminal or civil matter. The vast majority of the SMAQMD's cases are handled through the MSP.
19. Are post-burn reports required? What information is required?	SMPs must require a post-burn smoke management evaluation by the burner for fires greater than 250 acres. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	The Basin Burn Coordinator prepares an annual report for the fall burn season based upon air quality, meteorological and burn data. The data are collected and analyzed and form the bases of suggested program changes. The BBC reviews and annually amends the SMP as needed. All amendments are submitted to the ARB, which must concur with the amended SMP before it can become effective. Interested parties such as the affected industry and environmental groups also have opportunities to address the SMP and provide input[3].
21. What are the review criteria?	See Question 20.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Burns greater than 10 acres must identify the location of smoke sensitive areas. [2]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No specific "performance standards" however have been adopted.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	Not applicable.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	The State and many local counties do have nuisance regulations which apply to smoke impacts from prescribed and agricultural burning.

26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	YES.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	The SMAQMD imposes burn permit fees, which cover approximately thirty percent of the field elements of the program. [5] Permit fees include a \$50 base fee and an acreage fee based upon the type of material. Orchard or vineyard pruning waste is \$0.50 per acre. Orchard removal waste is \$3.50 per acre. All other burnable waste, including field stubble and weeds, is charged at \$1.75 per acre. The remainder of the program is funded through State "subvention" funding.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	The SMAQMD maintains daily hardcopy records with burn specific information. The SMAQMD also maintains a tracking database. The emission inventory staff annually prepare an estimate based upon this information. The emissions information is provided annually to the ARB. Pursuant to the SMP, the basin burn coordinator maintains various burn statistics for each district and the basin.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Not at the current time.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	Unknown.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for	No.

vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	
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Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From San Diego County Smoke Management Program, California May 2002.

Smoke Management Program Components Regarding Vegetative Management

[1]Title 17, Smoke Management Guidelines, California Code of Regulations, March 14, 2001.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	SDAPCD, local fire agencies.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	The District will coordinate all prescribed burns in the San Diego Air Basin with the ARB. This coordination will ensure that the ARB is aware of all burns that have the potential to impact downwind air districts such as the Salton Sea Air Basin (Imperial County). When prescribed burns are near the northern boundaries of the San Diego Air Basin the District will contact the South Coast Air Basin to coordinate the project with any burns planned under its jurisdiction.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	No person will knowingly set or allow agricultural or prescribed burning unless he/she has a valid permit from the District or designated agency.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural burning is also considered prescribed burning (for wildland vegetative management).
5. How do land managers apply for authorization to burn?	An application for a burn permit is required for all burns conducted in San Diego County. An application can be obtained at and submitted to the local fire department or fire protection agency. A sample of the San Diego County Application for a Permit to Burn is included in Appendix C. A sample of the San Diego County Application for a Prescribed Burn is included in Appendix D. These applications are collected by the local fire department or fire protection agency for the District. An approved permit is required for all burns, and no burning is allowed unless the District issues a permissive burn declaration for the Air Basin. The District does not issue marginal burn day declarations.
6. What are the criteria for getting permission to	District meteorologists issue notices of permissive-burn/no-burn days on

burn?	<p>a daily basis and are available to the public by voice recording and on the District website. The District does not issue marginal burn days for San Diego County. These media include the ARB's burn decision for the eastern portion of San Diego County (i.e., Salton Sea Air Basin). Local fire protection agencies call in to determine the burn status for the following day. When the ARB calls a no-burn for the eastern portion of San Diego County, District meteorologists call the Borrego Springs Fire Department and the Imperial County APCD to inform them of this decision.</p> <p>One week prior to a prescribed burn the District will consult with the burner to finalize details about the location and timing of the burn. At this time, the District issues a trend analysis, which gives the burner a rough outlook on the probability of conditions being favorable for burning on the desired date.</p> <p>The trend analysis report is updated four days before the scheduled prescribed burn (i.e., 96-hour trend analysis). Based on the trend analysis the burner can decide to continue to marshal resources or reschedule the burn for a time when conditions will be more appropriate for successful completion of the project. The 96-hour trend analysis report is transmitted to the burner via the District's voice recording system described above (Option 8), although personal contact with the duty forecaster is encouraged. Three days prior to the planned prescribed burn, the District will issue a 72-hour outlook for the planned burn project. This outlook provides the burner with a higher degree of confidence on whether the planned date will be favorable for successful completion of their project. The 72-hour outlook is transmitted to the burner via the District's voice recording system described above (Option 8), although personal contact with the duty forecaster is encouraged.</p> <p>Two days prior to the planned prescribed burn, the District issues a 48-hour forecast for the planned burn project. This forecast includes a prediction of the meteorological and air quality conditions expected to exist in the project area. The forecast also includes a degree of confidence to assist the burner in scheduling their resources. For</p>
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	<p>example, the 48-hour forecast will include statements such as, "There is an 80% probability that conditions will be favorable for burning on the planned burn date". The 48-hour forecast is transmitted to the burner via the District's voice recording system described above (Option 8), although personal contact with the duty forecaster is encouraged.</p> <p>The day before a planned prescribed burn, the District will issue a 24-hour go/no-go decision. The duty forecaster contacts the burner and relays the information directly to the burn boss or other authorized individual. At this time the burner is reminded that all elements of their burn prescription must be met prior to ignition. It is the burners responsibility to ensure that all pre-ignition criteria are met before starting the fire.</p>
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<p>Daily coordination occurs between the land manger or his/her designee and the air district or the ARB for multi-day burns which may impact smoke sensitive areas, to affirm that the burn project remains within the conditions specified in the smoke management plan (burn plan), or whether contingency actions are necessary. [1]</p>
<i>Minimizing Air Pollutant Emissions</i>	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<p>The District requires that SMP's for burn projects greater than 100 acres in size or estimated to produce more than 10 tons of particulate matter contain, at a minimum, the information contained in Section 80160 (b) and the following additional information:</p> <p>An evaluation of alternatives to burning considered; if an analysis of alternatives has been prepared as part of the environmental documentation required for the burn project pursuant to the National Environmental Policy Act (NEPA) or the California Environmental Quality Act (CEQA) , as applicable, the analysis will be attached to the SMP in satisfaction of this requirement.</p>
<p>9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?</p>	<p>Conditions to Minimize Smoke: Material to be burned should be:</p> <ul style="list-style-type: none"> (a) reasonably free of dirt, soil, and visible surface moisture; (b) arranged to burn with minimum smoke, and (c) allowed to dry, as follows: 60 days for trees, large branches, and vegetation from forest and brushland management, 30 days for prunings and small branches, 15 days for field crop and other agricultural waste,

	<p>and 10 days for all other material.</p> <p>Inaccessible Area: The location of the burn must not be accessible by light-duty truck. If a light-duty truck can reach the bulk of the material or the land where the material is piled, the material cannot be burned.</p> <p>There must be no roads, including unpaved roads, or driveways within 100 feet or that have a slope of less than 10 percent. An applicant shall not move waste away from the road to circumvent District requirements.</p>
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	The District's Permit to Burn includes the conditions in question #9 to minimize smoke and non-burn alternatives.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<p>The District requires annual registration of all planned burn projects, including areas considered for potential naturally-ignited wildland fires managed for resource benefits, with updates as they occur.</p> <p>The District requires the submittal of a Smoke Management Plan (SMP) for all burn projects greater than 10 acres in size or estimated to produce more than 1 ton of particulate matter. The SMP shall contain, at a minimum, the following information:</p> <ul style="list-style-type: none"> (1) Location, types, and amounts of material to be burned; (2) Expected duration of the fire from ignition to extinction; (3) Identification of responsible personnel, including telephone contacts; and (4) Identification and location of all smoke sensitive areas. <p>The District requires that SMP's for burn projects greater than 100 acres in size or estimated to produce more than 10 tons of particulate matter contain, at a minimum, the information contained in Section 80160 (b) and the following additional information:</p> <ul style="list-style-type: none"> (1) Identification of meteorological conditions necessary for burning; (2) The smoke management criteria the land manager or his/her designee will use for making burn ignition decisions; (3) Projections, including a map, of where the smoke from burns are expected to travel, both day and night;

	<p>(4) Specific contingency actions (such as fire suppression or containment) that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the smoke management plan;</p> <p>(5) An evaluation of alternatives to burning considered; if an analysis of alternatives has been prepared as part of the environmental documentation required for the burn project pursuant to the National Environmental Policy Act (NEPA) or the California Environmental Quality Act (CEQA) , as applicable, the analysis will be attached to the SMP in satisfaction of this requirement; and</p> <p>(6) Discussion of public notification procedures.</p>
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<p>A permissive-burn day will be declared when the following criteria are met:</p> <p>(1) Above 3,000 feet msl*:</p> <p>(A) Near 4:00 a.m., the inversion top is less than 3,000 feet msl or the temperature difference through the inversion is less than seven degrees Fahrenheit.</p> <p>(B) The expected daytime resultant wind speed between 3,000 and 6,000 feet msl is at least 5 miles per hour.</p> <p>(2) Below 3,000 feet msl*:</p> <p>(A) The maximum mixing depth is expected to be at least 1,500 feet msl.</p> <p>(B) The expected daytime resultant wind direction in the marine layer has a westerly component.</p> <p>(C) The expected daytime resultant wind speed in the marine layer is at least five miles per hour.</p> <p>*In place of the standard 3,000 feet msl level, the elevation may be specified in increments of 500 feet on a day-to-day basis as determined from vertical temperature soundings.</p>
13. Must the affected public be notified of planned fires? Please describe.	The District requires that SMP's for burn projects greater than 100 acres in size or estimated to produce more than 10 tons of particulate matter contain, discussion of public notification procedures.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	The District requires that SMP's for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those

	specified in the plan. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<p>If smoke may impact smoke sensitive areas, the District requires SMP's to include appropriate monitoring, which may include visual monitoring, ambient particulate monitoring or other monitoring approved by the District, as required by the District for the following burn projects:</p> <p>(1) projects greater than 250 acres; (2) projects that will continue burning or producing smoke overnight; (3) projects conducted near smoke sensitive areas; or (4) as otherwise required by the District.</p>
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<p>The SMP must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1]</p> <p>The ARB has established a working group which will develop recommendations for public education and outreach efforts. The ARB also has a web site where information relating to ARB's smoke management program is posted.</p>
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	The District also has Air Quality Inspectors (Compliance Division) who investigate air quality and nuisance complaints (including smoke) throughout the County. At least one District Air Quality Inspector will witness each medium-sized burn during the first year or two of this Program (depending upon the number of prescribed burns). Inspectors will concentrate on smoke sensitive areas and ensure compliance with all applicable District rules.
18. What penalties are authorized for non-compliance?	Determined on a case by case basis.
19. Are post-burn reports required? What information is required?	SMPs must require a post-burn smoke management evaluation by the burner for fires greater than 250 acres. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	District staff will work closely with the burners to evaluate the effectiveness of the burn and address any problems encountered. Lessons learned will be applied to all future burns in San Diego County.

	SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [1]
21. What are the review criteria?	See Question 20.
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	If smoke may impact smoke sensitive areas, the District requires SMP's to include appropriate monitoring, which may include visual monitoring, ambient particulate monitoring or other monitoring approved by the District, as required by the District for the following burn projects: (1) projects greater than 250 acres; (2) projects that will continue burning or producing smoke overnight; (3) projects conducted near smoke sensitive areas; The District may specify alternate thresholds to those specified in Sections 80160 (b), (c), and (d).
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	Not applicable.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	No answer given.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres	No permit fees at this time; however, fees may be assessed pending rule hearing/public workshop on May 9, 2002.

planned, actual acres burned, type of burn, burn objective, etc.)?	
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	For registered burn projects the District requires a daily report of the number of acres burned and an estimation of total emissions. This daily report is required for planned and unplanned wildland fires.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Not at the current time.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	No answer given.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

**Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”
EC/R Incorporated – January 26, 2001**

**From Communication with Jose Martinez, San Joaquin Valley APCD, California, January 8, 2003
Smoke Management Program Components Regarding Vegetative Management**

Source of summary information:

- [1] Rule 4103 Open Burning, amended June 21, 2001. Available at (<http://www.valleyair.org/rules/curnrules/r4103.pdf>)
- [2] Rule 4106 Prescribed Burning and Hazard Reduction Burning, adopted June 21, 2001. Available at (<http://www.valleyair.org/rules/curnrules/r4106.pdf>)
- [3] Rule 3140 Agricultural Open Burning Fees, amended August 21, 1997. Available at (<http://www.valleyair.org/rules/curnrules/r3040.pdf>)
- [4] Rule 3160 Prescribed Burn Fee, adopted February 1, 2001. Available at (<http://www.valleyair.org/rules/curnrules/r3160.pdf>)
- [5] Memorandum of Understanding Between the San Joaquin Valley Unified Air Pollution Control District and Land Management and Fire Protection Agencies. August 20, 1998.
(The MOU has expired. The District and the LMAs will revise and renew the MOU as necessary to be consistent with Title 17 and Rule 4106 and to address other issues related to the implementation of the Smoke Management Program.)
- [6] Personal communication between Jose Martinez (San Joaquin Valley Unified Air Pollution Control District, and Barbara Bauer (EC/R Incorporated) on June 29, 2000.
- [7] Comments received from the San Joaquin Valley Unified Air Pollution Control District on August 3, 2000.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The San Joaquin Valley Unified Air Pollution Control District (District) is a duly constituted unified air pollution control district, as provided in California Health and Safety Code (HSC) Sections 41050 to 40161.• The District is authorized by California Health and Safety Code Section 40702 to make and enforce all necessary and proper orders, rules, and regulations to accomplish the purpose of Division 26 of the HSC.• Under Title 17 of the CA Code of Regulations, and SJVAPCD rules 4103 Open Burning, and 4106 Prescribed Burning and Hazard Reduction Burning’ the SJVUAPCD in cooperation with the State of California Air Resources Board has the responsibility of regulating all open burning activities within the boundaries of the San Joaquin Valley Air Basin.• The San Joaquin Valley Air Pollution Control District (SJVUAPCD) reviews the smoke management plan or the smoke management section of the burn plan. After the smoke management section/plan is approved the SJVUAPCD issues a burn/no burn ignition authorization.• The LMAs and the California Department of Forestry and Fire Protection conduct prescribed burning and may issue hazard reduction burn permits

	to home-owners within areas of their jurisdictional authority in accordance with District Rule 4106 and the conditions of the existing Memorandum of Understanding (MOU).
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • Regional burn/no burn day declaration decisions are coordinated with the State of California Air Resources Board (CARB). • A formal MOU exists between the SJVUAPCD and Land Management and Fire Protection Agencies (referred to as Signatories in this survey). The purpose of the MOU is to establish a formal working relationship between the SJVUAPCD and land managers in the development and implementation of methods of reducing emissions of PM-10 from prescribed burning practices. The goal of this MOU is to provide a process for involving the land managers in air quality improvement efforts by identifying the anticipated working relationship between the land managers and the SJVUAPCD. (The MOU has expired. The District and the LMAs will revise and renew the MOU as necessary to be consistent with Title 17 and Rule 4106 and to address other issues related to the implementation of the Smoke Management Program.) • The District has developed communication lines with surrounding jurisdictions, including contact names, telephone numbers and fax numbers. A form has been developed and will be used to convey pertinent information between and among jurisdictions. If smoke from a project may impact other Districts or states, District staff shall notify the appropriate air quality agency by faxing or by other electronic means the form as soon as practical and prior to ignition.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	• Participation in the smoke management program is required for all open burning.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The Rules cover <u>all</u> open burning including agricultural (open outdoor fires used in agricultural operations in the growing of crops or raising of fowl or animals, or open outdoor fires used in forest management, range improvement, wildland vegetation management, or the improvement of land for wildlife and game habitat, or disease or pest prevention. Agricultural burning also includes open outdoor fires used in the operation

	<p>or maintenance of a system for the delivery of water in agricultural operations), field crop, range improvement (the use of open outdoor fires to remove vegetation for a wildlife, game, or livestock habitat, or for the initial establishment of an agricultural practice on previously uncultivated land), forest management (the use of open, outdoor fires, as part of a forest management practice, to remove forest debris. Forest management practices include timber operations, silvicultural practices, hazard reduction, or forest protection practices), and wildland vegetation management burning (the use of prescribed burning conducted by a public agency, or through a cooperative agreement or contract involving a public agency, to burn land predominantly covered with chaparral (as defined in section 1561.1, Title 14, California Code of Regulations) or trees, grass, or standing brush). .</p>
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • 30 days in advance of the date(s) of the prescribed burn Land managers must submit a burn plan (based on the requirements of their agency and jurisdiction), which includes a smoke management plan based on the requirements of T17 and District rule 4106. The District's smoke management plan review will usually include communication with the applicant LMA and after consideration the plan may be either approved, approved with conditions, or denied. • The SJVUAPCD approval of the smoke management plan means the plan has satisfied the required plan elements contained in T17 and SJVUAPCD Rule 4106. Prior to the implementation of an approved burn/smoke management plan the LMAs must request an SJVUAPCD authorization to ignite.
6. What are the criteria for getting permission/authorization to burn/ignite?	<ul style="list-style-type: none"> • For final ignition authority LMAs must have an approved smoke management plan or a burn plan that contains an approved smoke management plan section. <p>SJVUAPCD Rules 4103 & 4106 require the Air Pollution Control Officer (APCO) to regulate the total acreage or tonnage of vegetation that may be burned during any one day within the SJVUAPCD</p> <ul style="list-style-type: none"> • 7 days in advance of the intended ignition LMAs must submit a Controlled Burn "Notice" (CB3) to receive meteorological information, a 96 hour trend, a 72 hour outlook, a 48 hour forecast, and a 24 hour decision.

	<p>Final ignition authority is reserved until the day of the actual ignition and although a 24-hour decision is issued it may be withdrawn if the meteorological conditions are unfavorably different than those anticipated. A SJVUAPCD issued authorization to ignite considers the amount of estimated emissions, the existing and predicted pollutant levels, the existing meteorological factors, the expected duration of the burn, and other burning in the area.</p> <ul style="list-style-type: none"> • An authorization to ignite is primarily based on the existing and predicted pollutant levels, the meteorological conditions and other burning activity. However a project authorization to ignite must also consider project specifics relative to the acreage or tonnage, type, and arrangement of vegetation to be burned; directions and distances to nearby sensitive receptor areas; fuel condition, combustion, and meteorological prescription elements developed for the project; projected schedule and duration of project ignition, combustion, and burn down; specifications for monitoring and of verifying critical parameters; and specifications for disseminating project information. • The land manager is responsible for assuring compliance with the project specific conditions at the time of ignition and remain consistent and in compliance with the smoke management plan or plan section that was approved by the SJVUAPCD.
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<ul style="list-style-type: none"> • A MOU exists between the SJVUAPCD and Land Management and Fire Protection Agencies. • Signatories must ensure that burns are conducted by personnel qualified in the basic roles of each burn. • Signatories must establish a certification and qualifications process by implementing training seminars and other institutional opportunities for burners to gain the necessary skills in smoke management techniques. The MOU suggests that burner certification/qualification programs similar to those required by Federal agencies may be appropriate. • SJVUAPCD Rule 4106 requires a prescribed burning class approved by the APCO for LMAs this is satisfied by taking RX450 the smoke management component of burn certification training conducted by the U S Forest Service

	<ul style="list-style-type: none"> • An abbreviated site specific training is offered by the SJVUAPCD for tree contractors/registered foresters or other private persons conducting pile burns of <10 acres and <1 ton.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • SJVUAPCD Rule 4106 requires that all project smoke management plans must include a discussion of what Alternative Fuel Treatment Methods (AFTMs) were considered. In the District, AFTMs include biomass chipping, crushing, disking, mowing, selective logging, chemical treatment, and livestock grazing. • For projects greater than 100 acres in size, or that are projected to produce more than 10 tons of particulate matter, or that will continue overnight, or that will be conducted near smoke sensitive areas, the smoke management plan discussion must include the comparative values or criteria used to determine the feasibility of the AFTMs• . • Some Best Available Control Measure (BACM) techniques discussed in the MOU is to limit the acreage or fuel that would otherwise be burned by using: manual/hand labor to remove fuels, chemical treatments, mechanical treatment, chipping, piling and burying. • Emission reductions are not currently tracked.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Land managers must develop a menu or combination of menu items specifying acceptable emission reduction techniques that should be used for each type of burn. • The MOU contains a “Preliminary Prescribed Burning Best Available Control Measures (BACM) Work plan Component Summaries” section. This part of the MOU suggests and describes emission reduction techniques that may be included in the burn plan. The techniques include reduction of the number of acres burned, reduction of pre-burn fuel loading, reduction of fuel consumption, and burning in ways that shifts the proportion of the burn from the smoldering phase to the flaming phase. • The SJVUAPCD’s review of the smoke management plan considers the calculated emissions of the burn, the distance and topography relative to the SSAs, and the duration of smoke production. The SJVUAPCD may require revisions to minimize the potential adverse air quality impacts on

	<p>populated or sensitive areas.</p> <ul style="list-style-type: none"> • Each smoke management plan must also include a description of the post-burn BACMs to be implemented to limit the duration of smoke impacts to smoke sensitive areas (e.g. mop-up). • Land managers must immediately notify the SJVUAPCD in the event of unforeseen meteorological occurrences resulting in impacts on populated and other sensitive areas and take appropriate actions to minimize and reduce the impact.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The land managers must prepare and submit to the SJVUAPCD documentation describing the effectiveness of actions taken to minimize and reduce impacts to populated and other sensitive areas prior to the next scheduled and approved prescribed burn in the impacted area, but not later than 10 days of the occurrence. • A smoke management plan must discuss what BACMs were considered and identify which are to be implemented to: reduce the number of acres burned; reduce pre-burn fuel loading; lower the emission factor (e.g. pile burning, high intensity fire, etc.); and reduce the fuel consumption.
<i>Smoke Management Components of Burn Plans.</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Burn plans are required and must comply with the requirements of Title 17; Section 80130 Burning Reports, Section 80160 Range Improvement Burning, and Section 80170 Forest Management Burning. • Land managers must have a burn plan that contains a reviewed smoke management plan section. .
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> •MOU Signatories must identify appropriate model(s) and validate model outputs for area-wide and location-specific burn projects. The model should produce quantitative, comprehensive, and reproducible results that allow independent confirmation of the decisions reached. Suggested actions include documenting the use of specific emission estimating and/or plume dispersion models and documenting the use of downwind air quality and meteorological monitoring in sensitive and/or metropolitan areas.]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • SJVUAPCD Rule 4106 requires that plans for projects greater than 100 acres in size or projected to produce more than 10 tons of PM, or that will

	continue overnite,or conducted near SSAs must describe how the public will be informed of the possible effects of smoke and the duration of effects.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • SJVUAPCD Rule 4106 requires that plans for projects greater than 100 acres in size or projected to produce more than 10 tons of PM, or that will continue overnite,or conducted near SSAs must describe specific smoke contingency actions to be implemented in the event of smoke impacts in SSAs or in case the meteorological conditions deviate from those specified in the plan .
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • SJVUAPCD Rule 4106 requires that plans for projects greater than 100 acres in size or projected to produce more than 10 tons of PM, or that will continue overnite, or conducted near SSAs must include a description of the type and frequency of surveillance and/or monitoring to be conducted. • LMAs are responsible for the monitoring in SSAs and for impacts and for compliance with plan specified meteorological conditions. • The SJVUAPCD, CARB and some land management agencies operate monitoring networks in the San Joaquin Valley which provide data used for determining basin wide meteorological and air quality conditions. Project specific air quality Instrument monitoring is not widely available. • Smoke impacts in SSAs resulting in complaints or possible regional impacts trigger consultation between LMAs and the SJVUAPCD to consider implementation of smoke contingency actions contained in the smoke management plan . • MOU Signatories must establish surveillance procedures to monitor prescribed burns utilizing visual assessments and collecting air quality samples. Suggested actions include use of a portable smoke and weather monitoring module and use of aircraft to observe meteorological conditions and fire behavior.
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of	<ul style="list-style-type: none"> • Signatories must develop a public information and awareness program to inform the general public through coordinated and proactive usage of public contract/public information, broadcast media, and print media.

your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<p>Suggested actions include documented use of park interpreters, community meetings, and other public information efforts.</p> <ul style="list-style-type: none"> • The SJVUAPCD has a web site that contains the SJVUAPCD's regulations (current and draft) and other information about open and prescribed burning, and smoke management. The web site is available to the public at http://www.valleyair.org.
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The CA Air Resources Board (CARB) has the authority to step in and enforce all provisions of the smoke management program through the SIP. • The SJVUAPCD conducts on site surveillance to assure compliance with the smoke management plan conditions and determine any smoke intrusion into sensitive areas and nuisance violations.
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Penalties are authorized under Division 26, Chapter 4, Article 3 of the State of California Health and Safety Code. • MOU signatories agree to the pursuit of enforcement actions for any violation of applicable burning regulations. • Through the MOU, the SJVUAPCD agrees to provide enforcement actions to assure compliance with the adopted BACM.
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • MOU signatories must submit to the SJVUAPCD a post-burn report no later than 10 days upon completing a prescribed burn project. • MOU signatories agree to participate in the Prescribed Fire Incident Reporting System (PFIRS) program to coordinate and report prescribed burning activity within the SJVUAPCD. [2]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • MOU signatories and the SJVUAPCD agree to prepare an annual report using CARB and SJVUAPCD air monitoring stations data, post-prescribed burning reports, or an approved Air Quality Impacts Summary Form submitted by the land managers to evaluate the effectiveness of the BACM and to estimate emission reductions. • The MOU may be modified as necessary upon written consent of all parties.
21. What are the review criteria?	Information not provided.

Optional Air Quality Protection	
22. Does the program establish any "special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Although special protection zones are not specifically listed or described, for wildland vegetation management projects exceeding the quantity of material specified by the APCO to be burned during any one day within the SJVUAPCD, or for projects situated in designated areas specified by the APCO, the burner must provide to the SJVUAPCD the directions and distances to nearby sensitive receptor areas. • Land managers must immediately notify the SJVUAPCD in the event of unforeseen meteorological occurrences resulting in impacts on populated and other sensitive areas and take appropriate actions to minimize and reduce the impact, and land managers must prepare and submit to the SJVUAPCD documentation describing the effectiveness of action taken to minimize and reduce impacts to populated and other sensitive areas prior to the next scheduled and approved prescribed burn in the impacted area, but not later than 10 days of the occurrence.
23. Does the program establish any "performance standards"? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Information not provided.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • No agricultural burning is permitted that will create a nuisance as defined in section 41700 of the CA Health and Safety Code. • The regulations apply once a management decision is made to allow a fire to continue for resource benefits regardless of the ignition source. • A smoke event resulting complaints in ≈ 5 nuisance complaints which are verified on-site would trigger consideration of declaring a nuisance. which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

<p>26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?</p>	<ul style="list-style-type: none"> • MOU signatories agree to develop and submit management practices to the SJVUAPCD for incorporation into the SIP that demonstrate emission reductions that equal or exceed BACMs to be used to prevent and/or minimize adverse air quality in the SIP developed for the SJVUAPCD.
<p>27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?</p>	<ul style="list-style-type: none"> • In combination with the fees charged for agricultural burning and District funding from other sources, prescribed burning fees are being used to implement the District's SMP • The annual fees for a permit to conduct burns in agricultural operations, are \$22 for one location, \$38 for two locations, and \$62 for three or more locations. There are currently ≈13k active permits and ≈19k registered agricultural burn locations in the SJVAB. • The fee for prescribed burning is \$5.00 per acre per year with the first 40 acres burned by an agency or person each year exempted. The fee is determined according to LMA reported blackened acres.
<p>28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?</p>	<ul style="list-style-type: none"> • The District maintains an Access Database for agricultural and prescribed burning. Data is recorded by County and includes the estimated tonnage and/or acreage of each waste type burned from open burning in agricultural operations reported by each agricultural permit holder each year. The estimated tonnage from prescribed burning, by each prescribed burn conducted each year, is also recorded. The emissions are determined according to LMA post burn reported blackened acres. • MOU signatories agree to develop and maintain an emissions inventory for prescribed burning based on estimates of tons of fuel consumed and the appropriate emission factors (AP-42 or specific to burns). Suggested actions include developing and documenting pre-fire and post-fire emission estimates and developing an annual tracking and reporting system of emissions. • MOU signatories agree to participate in the Prescribed Fire Incident Reporting System (PFIRS) program to coordinate and report prescribed burning activity within the SJVUAPCD. • Based on this information, the report on agricultural and prescribed burning required by Section 80130 (a) of Title 17 is submitted to the ARB

	by the District's Compliance Division within 45 days of the end of each calendar year.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Through the MOU, the SJVUAPCD agrees to prepare an annual report using CARB and SJVUAPCD air monitoring stations data, post-prescribed burning reports, or an approved Air Quality Impacts Summary Forms submitted by the land managers to evaluate the effectiveness of the BACM and to estimate emission reductions.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Land managers agree to develop and submit management practices to the SJVUAPCD for incorporation into the SIP that demonstrate emission reductions that equal or exceed BACMs to be used to prevent and/or minimize adverse air quality in the SIP developed for the SJVUAPCD.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No response.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No response.

**Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”
EC/R Incorporated - January 26, 2001**

From Communication with San Luis Obispo APCD, California on 5/10/02 (same answers as CARB).

Smoke Management Program Components Regarding Vegetative Management

[1] Title 17, Smoke Management Guidelines, California Code of Regulations, March 14, 2001.

[2] Comments received from CARB, November 9, 2000.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Air Resources Board (ARB) will specify each day of the year as a permissive burn day, or a no-burn day for each air basin or other specified area. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The Smoke Management Guidelines for Agricultural and Prescribed Burning (Guidelines) provide direction to air pollution control and air quality management districts (air districts) in the regulation and control of agricultural burning, including prescribed burning, in California. [1] • Each air district must adopt a smoke management program (SMP) consistent with the Guidelines. The Guidelines are intended to provide flexibility to air districts in the development and implementation of their smoke management programs. [1] • In general, by September 1, 2000, all air districts must implement the prescribed burning elements of their programs and, by July 1, 2001, all air districts must adopt SMPs. Program approvals will be made by the ARB.[1] • Two or more air districts choosing to implement a regional SMP must execute a MOU that sets forth procedures for the coordination, implementation and enforcement of shared responsibilities. The MOU must describe the following: a list of district and region boundaries; participating federal and/or state land managers, and other local entities within the region; the decision-making structure of the regional SMP; and the joint workplan for implementing the regional SMP. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Each air district must adopt a smoke management program (SMP) consistent with the Guidelines. Each air district or region shall develop its SMP in coordination with the ARB and appropriate fire protection agencies, the land managers having jurisdiction within the district, any

	<p>other affected parties, and the public. [1]</p> <ul style="list-style-type: none"> • The Guidelines are not intended to permit open burning on days when such burning is prohibited by public fire protection agencies for purposes of fire control or prevention. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The Guidelines regulate agricultural burning, which includes prescribed burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • A valid permit must be obtained from a district or designated agency prior to burning. Each applicant for a permit must provide information requested by the district and the designated agency. [1] • Air district SMPs must include procedures for acquiring information on amounts of material burned on each day, on planned and unplanned wildfires, and other information needed to establish the burn authorization for the following day. [1] • Air district SMPs must require registration of all planned burn projects annually or seasonally, including areas considered for potential naturally-ignited wildland fires managed for resource benefits, with updates as they occur. • Air district SMPs must require submission of smoke management plans (burn plans) within 72 hours of the start of the fire for naturally-ignited wildland fires managed for resource benefits that are expected to exceed 10 acres.[1] • Air district SMPs must require the permit applicant to file with the district a statement from the Department of Fish and Game certifying that the burn is desirable and proper if the burn is to be done primarily for improvement of land for wildlife and game habitat. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The ARB will announce by 3:00 p.m. every day for each of the state's air basins or other specified areas whether the following day is a permissive burn day or no-burn day, or whether the decision will be announced on the following day. If conditions preclude a forecast until the next day, the decision will be announced by 7:45 a.m.[1] • Burning must comply with all conditions specified on the permit, which must have district approval consistent with the Guidelines. [1] • An air district may, by special permit, authorize burning on days designated by the ARB as no-burn days if the denial of such permit

	<p>would threaten imminent and substantial economic loss. [1]</p> <ul style="list-style-type: none"> • Air district SMPs must include procedures for authorizing burning, including a procedure for authorizing individual prescribed burns no more than 24 hours prior to ignition of fire. [1] • Air district SMPs must require district review and approval of smoke management plans (burn plans). [1]
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<ul style="list-style-type: none"> • Air district SMPs must require, as appropriate, daily coordination between the land manager or his/her designee and the air district or the ARB for multi-day burns which may impact smoke sensitive areas, to affirm that the burn project remains within the conditions specified in the smoke management plan (burn plan), or whether contingency actions are necessary. [1]
<i>Minimizing Air Pollutant Emissions</i>	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<ul style="list-style-type: none"> • Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of non-burn alternatives. [1] • Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain an evaluation of alternatives to burning considered. [1]
<p>9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?</p>	<ul style="list-style-type: none"> • In the case where, by special permit, an air district authorizes burning on days designated by the ARB as no burn days, a district will limit the amount of material which can be burned in any one day and only authorize burning which is not likely to cause or contribute to exceedences of air quality standards or result in smoke impacts to smoke sensitive areas. [1] • Air district SMPs must include a daily burn authorization system that regulates burning in order to minimize smoke impacts on smoke sensitive areas, avoid cumulative smoke impacts, and prevent public nuisance. [1] • Air district SMPs must include procedures for addressing cross-jurisdictional smoke impacts by coordinating with neighboring air districts, regions, or states. [1] • Air district SMPs must provide plans for analysis and periodic

	<p>assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices. [1]</p> <ul style="list-style-type: none"> • Air district SMPs must provide, if necessary, procedures for prioritizing burning that districts can use to minimize smoke impacts. Efforts to reduce smoke emissions must also be considered. [1] • Air district SMPs must require vegetation to be in a condition that will minimize the smoke emitted during combustion when feasible. [1] • Air district SMPs must require material to be burned to be piled where possible, unless good silvicultural practices or ecological goal dictate otherwise. [1] • Air district SMPs must require piled material to be burned to be prepared so that it will burn with a minimum of smoke. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Districts SMPs must include plans to provide for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [2]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Air district SMPs must require the submission of smoke management plans for all burn projects greater than 10 acres or estimated to produce more than one ton of particulate matter. These plans must contain, at a minimum, the following information: location, types, and amounts of material to be burned; expected duration of the fire from ignition to extinction; identification of responsible personnel, including phone contacts; and identification and location of all smoke sensitive areas. [1] • Air district SMPs must require the submission of more detailed smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain the information above and the following additional information: identification of meteorological conditions necessary for burning; the smoke management criteria the land manager or his/her designee will use for making burn ignition decisions; projections, including a map, of where the smoke from burns is expected to travel; specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan; an evaluation of alternatives to burning considered; and discussion of public notification

	procedures. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Air district SMPs must include a daily burn authorization system that will not allow more burning on a daily basis than is appropriate for the meteorological or air quality conditions. Meteorological conditions to be evaluated include wind speeds and directions at the surface and aloft, and atmospheric stability. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain discussion of public notification procedures. [1] • Air district SMPs must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Air district SMPs must include a description of the meteorological and air quality monitoring data to be used to provide data for determining the basinwide meteorological and air quality conditions. [1] • Air district SMPs must require smoke management plans (burn plans) to include appropriate monitoring as required by the district for the following burn projects: projects greater than 250 acres; projects that will continue burning or producing smoke overnight; projects conducted near smoke sensitive areas; or as otherwise required by the district. [1]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP?	<ul style="list-style-type: none"> • Air district SMPs must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1] • The ARB has established a working group which will develop recommendations for public education and outreach efforts. The ARB also has a web site where information relating to ARB's smoke management program is posted. [2]

What is done on an ongoing basis?	<ul style="list-style-type: none"> • The revisions to Title 17 (ARB's smoke management guidelines) went through an extensive public outreach process, including three program scoping sessions, 15 workshops, and 23 meetings with affected stakeholders. [2]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Air district SMPs must include procedures for enforcement. The Guidelines do not further elaborate on enforcement procedures. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Air district SMPs must include procedures for enforcement. The Guidelines do not further elaborate on enforcement procedures. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • A report of burning conducted pursuant to the Guidelines each year must be submitted to the ARB by each air district. The report will include the estimated tonnage or acreage of each waste type burned from open burning in agricultural operations and the estimated tonnage of waste from prescribed burning, and the county where the burning was performed. [1] • When an electronic reporting system is established by the ARB, it will be used for providing reports of burning. • A yearly report of air district special permits, which authorize burning on days designated by the ARB as no burn days, must be submitted to the ARB by each air district. The report must include the number of special permits issued, dates of issuance, person(s) to whom the permit was issued, an estimate of the amount of wastes burned pursuant to the permit, and a summary of why denial of each permit would have threatened imminent and substantial economic loss. [1] • Air district SMPs must require a post-burn smoke management evaluation by the burner for fires greater than 250 acres. [1]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The Guidelines are intended to assure adequate state oversight, including initial program approval and periodic program assessment. [1] • Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [1]
21. What are the review criteria?	See Question 20.

Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Burns greater than 10 acres must identify the location of smoke sensitive areas. [2]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The ARB's smoke management program provides a collaborative framework to provide for increased opportunities for managed burning while allowing California to meet health-based air quality standards and federal visibility requirements. No specific "performance standards" however have been adopted. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Not applicable. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The State and many local counties do have nuisance regulations which apply to smoke impacts from prescribed and agricultural burning. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • The districts' current smoke management rules are included as part of the SIP. New rules adopted due to the new requirements of the revisions to Title 17 will supersede the old rules when new PM and regional haze SIPs are submitted. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Costs associated with implementation and operation of the SMP are addressed by individual districts. As provided by State law, districts can recover costs associated with the compliance with State requirements by fees on sources that engage in burning through permit fees. The structure for assessing fees varies by district. The ARB is also committed to working with all stakeholders, including districts and affected sources, to fund the SMP and is developing funding proposals to provide technical and monitoring support. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the	<ul style="list-style-type: none"> • The State compiles estimates of prescribed burning emissions. These estimates are computed by local districts. The level of effort and completeness of these estimates varies. All of the districts compile

emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	annual estimates, but these estimates are not necessarily updated each year. Generally the emission estimates include seasonal profiles which can be used to apportion annual emissions by month based on historical burning trends. Daily estimates are not computed. In most regions, prescribed fire emissions are based upon either permitted acreage, or post burn annual summaries. It is not yet common practice to base emission estimates on fire-specific post-burn reports that include information on fuel type, condition, and consumption. However, the State is involved in efforts to substantially improve the completeness and uniformity of prescribed burning emission estimates. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Not at the current time. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Information not provided.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	None.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	None.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From Communication with Santa Barbara APCD, California 6/10/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Burn days, no burn days or marginal burns days are forecasted by the Air Resources Board; however, with respect to the conduct of prescribed burning, the Santa Barbara APCD is responsible for authorizing the conduct of prescribed burning for each and every day prescribed burning is conducted by a land manager or their responsible official
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	The APCD coordinates its daily burn authorizations with adjacent air districts, i.e., Ventura and San Luis Obispo to ensure that a burn in one district will not adversely affect the air quality of others or result in smoke that causes or has a natural tendency to cause a public nuisance. Coordination is voluntary, but in concert with each of our smoke management plan policies and procedures.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Participation is mandatory in that a smoke management plan must be submitted to and approved by the APCD for ALL prescribed burning. SMP requirements are described in amended APCD Rule 401, <i>Agricultural and Prescribed Burning</i> , which was adopted by our Board of Directors on May 16, 2002.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Rule 401 governs agricultural and prescribed burning. Prescribed burning is a subset of agricultural burning under state law.;
5. How do land managers apply for authorization to burn?	Land managers are required to submit a SMP for APCD review and approval. A copy of the SMP application form is contained within our policy and procedure document.
6. What are the criteria for getting permission to burn?	Varies depending upon the size of the burn. Please refer to Rule 401 and SMP application for details.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	No to all.

<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	For prescribed burn projects greater than 100 acres in size or projected to produce more than 10 tons of particulate matter, land managers are required to evaluate alternatives to burning as part of the SMP application process. See Rule 401 D.3.e and SMP section C.4. In accordance with Rule 401 C.2.b., designated agencies are report the estimated tonnage or acreage burned. This information is submitted to the CARB by the APCD each year.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Piling of vegetation where possible. Further, material to be burned shall be prepared so that it will burn with a minimum of smoke. In addition, limitations on the number of piles than can be burned at one time or acres at one time may be required. Further, the APCD requires that the vegetation and meteorological conditions meet prescription requirements, e.g., fuel moisture content, relative humidity, wind direction/speed, etc. Please refer to Rule 401 for more specific details.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Land managers are required to submit a post-burn smoke management evaluation to the APCD for fires greater than 250 acres within 30 days of project completion (see Rule 401 D.8.) This information is used to assess what went wrong, if anything, with the weather or smoke and identify areas that can be improved upon for future burns.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Yes. See attached SMP and Rule 401 requirements.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Land managers are required as part of the SMP approval process to identify, on a map, their projections of where the smoke from burns is expected to travel, both day and night. In addition, specific contingency actions must be identified in the SMP if smoke impact occur or meteorological conditions deviate from those specified in the SMP.
13. Must the affected public be notified of planned fires? Please describe.	Public notification is required, including requirements for appropriate signage at burn sites, and for the reporting of public smoke complaints
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Yes. Implementation of contingency plans is required if smoke impacts occur or meteorological condition deviate from those specified in the SMP. See Rule 401 D.3.d.
15. Must the air quality impacts of fires monitored?	Yes. The land manager is responsible for such monitoring. The District

Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	approves the type of monitoring that may be necessary. See Rule 401 D.4.
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	Public education and awareness is the responsibility of the land manager in conjunction with our approval of their SMP and the conduct of their burn in accordance with the SMP.
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Each and every prescribed burn is required to obtain daily approvals from the APCD to conduct burning. Prior to granting such approval, we evaluate real time meteorological conditions in the vicinity of the burn, forecasted meteorological conditions that may impact continued burning, and coordinate with adjacent agencies to ensure we won't have smoke impacts. During the active burn, we may on site to coordinate go/no-go burn decisions and evaluate off site smoke impacts. If conditions become unfavorable for continued burning, we may disallow any further lighting even though burn approvals were granted earlier in the day.
18. What penalties are authorized for non-compliance?	Penalties as authorized under California Health and Safety Code §42400. et al.
19. Are post-burn reports required? What information is required?	Yes. See Rule 401 D.8. for Information requirements
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	Periodic program review and evaluation is accomplished by the California Air Resources Board
21. What are the review criteria?	As determined with the ARB
Optional Air Quality Protection	
22. Does the program establish any special	No

protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No
24. What additional smoke management requirements apply if the performance standards have been exceeded?	NA
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes, State and local nuisance regulations apply to prescribed fires. Nuisance regulations do not exempt prescribed natural fires. Please refer to Rule 401.d.1.f. for standards applicable to naturally ignited wildfires. Criteria used to establish a nuisance is contained in APCD Enforcement Policy and Procedure IV, dated July 24, 1991. This policy requires in part that receipt of 5 or more documented complaints from 5 or more different households within a 24-hour period or receipt of 10 or more complaints from 10 or more different households shall constitute a nuisance.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	The APCD submitted Rule 401 to the State for inclusion in the SIP on June 5, 2002.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	Fees are not currently charged by the APCD to operate our smoke management program.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	Both the state and the APCD maintain an annual listing of estimated tonnage or acreage burned for prescribed fires. In addition, all prescribed burners are required to provide an estimate of projected actual particulate matter emissions as part of their SMP application. Projected emissions are based upon vegetation specific emission factors based upon fuel loading. See Rule 401.C.2.b. and SMP

	application Section A.4.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Yes. See Section C.4. of SMP application.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	Rule 401 has been submitted to the ARB for inclusion in the SIP.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	NA
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From Communication with Shasta County AQMD, California 4/12/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Regulatory authority for Smoke Management lies with the Shasta County Air Quality Management District. Burn No Burn decisions are generally made by the burning agency however, the AQMD can request a no Burn.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	California Air Resources Board Interagency Fire Forecast Warning Unit (local Weather) California Dept. Forestry and Fire.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	All burns with an area greater than 10 acres or 1 ton of PM10 require a smoke management plan.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Forest Management, Range improvement, Wildland Vegetation Management, Management of Naturally ignited fires for resource benefit
5. How do land managers apply for authorization to burn?	A Smoke Management Plan must be filed with AQMD.
6. What are the criteria for getting permission to burn?	A burn day must be declared by the State Air Resources Board/AQMD, The weather must match the parameters identified in the Smoke Management Plan.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	There is no specific Qualification required by the air Dist. But most agencies have trained burn bosses. The California ARB provides training specific to smoke management.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to	ERC’s are not tracked. If several agencies are wanting to burn in the same window, priority will be given to an agency that has used alternatives to burning i.e. chipping,

burning and emission reduction techniques? Are emission reductions tracked?	biomass or other thinning techniques.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Pre fire thinning, logging, proper prescription, biomass of useable material.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	It is documented in the Smoke Management Plan
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Not required but often provided.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Regional haze is taken into account. We look for wind directions that will minimize impacts to class 1 areas. Class 1 areas must be identified in SMP's.
13. Must the affected public be notified of planned fires? Please describe.	Yes, The SMP must designate sensitive receptors and the method of notifying them when burning will occur.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Yes, some contingency plans consist of burning reduced acreage, having the burn unit broken into parcels so that it is easier to stop burning if needed. Some times a contingency can be to increase ignition speed resulting in a hotter fire therefore more elevation to the plume.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	All burns must have surveillance and monitoring plans. Usually visual monitoring is used. The air district will often take photographs of Rx burns to use as reference for following burns in the same area. All burns over 250 acres require that the agency submit a post burn smoke evaluation.
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file	No Development of the SMP was done by a work group consisting of regulators, public agencies, private forest management companies, and weather people. The initial sounding board and workshopping was through public meetings when the CARB was enacting Title 17.

complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	We review SMP's and post burn reports. We often attend burns to observe smoke dispersion.
18. What penalties are authorized for non-compliance?	No specific penalties for prescribed burning. Open burn regulations can be enforced.
19. Are post-burn reports required? What information is required?	Yes, Date, time, acreage, smoke direction, whether notifications were completed, if complaints were received, if the goal of the burn was attained.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	Not really
21. What are the review criteria?	
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Class 1 areas are classified by EPA. We take into account the wind direction when authorizing burns in these areas
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	
24. What additional smoke management requirements apply if the performance standards have been exceeded?	
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes, no, State health and safety code definition of nuisance is applied
26. Is the smoke management program, or the	Yes

regulations authorizing the program, part of the State's implementation plan (SIP)?	
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	All funding is currently being paid out of the Counties general fund.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	We track actual acres on a yearly basis. We report acreage on a yearly basis to the State of CA.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	No
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

Answers from South Coast AQMD, California original survey response in 2000.

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

[1] Rule 444: Open Fires, Amended October 2, 1987. Available at <http://www.aqmd.gov/rules/html/r-444.html>.

[2] AQMD Open Burning Policy Fact Sheet. Available at <http://www.aqmd.gov/news/burnfct.html>.

[3] Personal communication between Gilbert Vita (SCAQMD, 909-396-2418) and Barbara Bauer (EC/R Incorporated, 919-933-9501) on June 2, 2000.

[4] Comments received from the SCAQMD, dated December 20, 2000.

Special Notes:

- The State of California has revised the Agricultural Burning Guidelines in Title 17 of the California Code of Regulations. These changes required the CA Air Quality Management Districts to revise their local regulations.
- This survey was reviewed by the South Coast Air Quality Management District. For more information, contact George Wright, SCAQMD, 21865 Copley Drive, Diamond Bar, CA, 91765.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The South Coast Air Quality Management District (SCAQMD) Meteorologist makes the burn/no burn decision. <p>[3]</p>
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The SCAQMD coordinates with the California Air Resources Board (ARB). [3]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Neither the regulation nor the fact sheet specifically discuss a smoke management program; however, burners have certain requirements as described in the response to Question #9.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • Forest management and agricultural burning are discussed in the regulation and fact sheet. [1][2]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Permits from the SCAQMD and the local fire department are required for any type of allowable open burning. [2] • For wildland vegetation management burns, an implementation plan

	<p>must be approved by the Executive Officer. [1]</p> <ul style="list-style-type: none"> • For wildland vegetation management burn projects, specific information must be provided to the SCAQMD for review and approval in advance of the proposed burning. [1][4]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • All burning must be conducted during an approved burn day. However, the local fire protection agency can receive a waiver to conduct training fires as specified pursuant to Rule 444(e) on a designated no burn day by contacting the SCAQMD and requesting a variance. [2][4] • All needed permits and approvals must be in place. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Land managers must qualify as an agricultural burner as defined in Rule 444. [4]
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Alternatives to open burning include hauling the debris to a landfill dump site or chipping, shredding, mulching or power-plant burning. Emission reductions are not being tracked for any of these operations. [2][4]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The wildland vegetation management implementation plan must: limit ignition of fires to approved devices; regulate the total acreage or tonnage of vegetation that can be burned each day within the SCAQMD; regulate burning or require mitigation when the meteorological conditions could otherwise cause smoke to create or contribute to an exceedance of a state or Federal ambient air quality standard or cause a public nuisance; require the vegetation to be burned be reasonably free of dirt or soil; and require the vegetation to be in a condition which will facilitate combustion and minimize the amount of smoke emitted during combustion. [1]

10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Prescribed burns only defines burn parameters or as burn or no-burn criteria. [4]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Wildland vegetation management burning can not be conducted until an implementation plan is approved by the Executive Officer. [1] • For wildland vegetation management burn projects exceeding a predetermined size or tonnage threshold level, or for projects situated in zones specified by the SCAQMD, the implementation plan must include the following information to be provided to the SCAQMD for review and approval in advance of the proposed burning: location and specific objectives of the burn project; acreage or tonnage, type and arrangement of vegetation to be burned; directions and distances to nearby sensitive receptor areas; fuel condition, combustion, and meteorological prescription elements developed for the project; projected schedule and duration of project ignition, combustion and burndown; specifications for monitoring and verifying critical project parameters; and specifications for disseminating project information. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Information not provided.
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Prescribed burns only where the public is notified. [4]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Information not provided.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being	<ul style="list-style-type: none"> • For wildland vegetation management burn projects exceeding a predetermined size or tonnage threshold level,

monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	or for projects situated in zones specified by the SCAQMD the burner must provide to the SCAQMD specifications for monitoring and verifying critical project parameters. [1]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The SCAQMD open burning policy fact sheet and Rule 444-Open Fires is available to the public on the Internet. [1][2]
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Notice of violations are served if compliance is not achieved. [4]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • For non-compliance, SCAQMD follows the guidelines of California Health and Safety Code, where penalties in the worst cases can be up to \$50,000 per day per violation and may include criminal sanctions. [4]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Post-burn reports are not required. [4]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Information not provided.
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • For wildland vegetation management burn projects situated in zones specified by the SCAQMD, specific information, including directions and distances to nearby sensitive receptor areas, must be provided to the SCAQMD for review and approval in advance of the proposed burning. [1]

23. Does the program establish any performance standards? What are performance standards? How is performance evaluated?	• Information not provided.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	• Information not provided.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	• Rule 402 Nuisance applies to prescribed, agricultural and all types of burns. [4]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	• Rule 444 is part of the State Implementation Plan (SIP) which was accepted by the State but denied by the EPA. [4]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	• The SMP is funded by SCAQMD's general budget fund. Currently, there are no fees (i.e. permit fees, registration fees, etc.) assessed to burners. [4]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	• The SCAQMD does maintain a daily pollutant emission inventory from prescribed, agricultural and all types of fires. The emission inventory and report are submitted annually to CARB. [4]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• Currently there is no mechanism in place to calculate and record the air pollutant emission reductions achieved. [4]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• Information not provided.

<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	<ul style="list-style-type: none"> • Information not provided.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	<ul style="list-style-type: none"> • Information not provided.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From Communication Tehama County APCD, California 3/26/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	The Tehama County Air Pollution Control District (TCAPCD).
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	Regional coordination with the State of California Air Resources Board (CARB) and member air districts of the Northeastern Air Alliance (NEAA). Voluntary/courtesy coordination.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	A smoke management plan is required from land manager who plan on conducting prescribed burning to burn more than 10 acres or the burn has the potential emissions of 1 or more tons of particulate matter.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Open outdoor fires used in forest management, range improvement, or the improvement of land for wildlife and game habitat, or disease or pest prevention.
5. How do land managers apply for authorization to burn?	A land manager would submit a smoke management plan to the TCAPCD a minimum of 15 days prior to the burn. For wildfire managed for resource benefit, the smoke management plan must be submitted within 72 hours of project declaration.
6. What are the criteria for getting permission to burn?	The land manager must have an approved smoke management plan and a current TCAPCD agricultural burn permit.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	No operating agreements have been established. There are no requirements for burner qualifications in the smoke management plan.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to	Evaluation of alternatives to burning is addressed in the applicable

fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	Environmental Policy Act (NEPA) documents. This document is attached to the smoke management plan or a detailed narrative of how alternatives to burning were considered is included in the smoke management plan.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	All wastes to be burned shall be free of material that is not produced on the property. Agricultural waste must be arranged so that it will burn with a minimum amount of smoke to the greatest extent feasible. Agricultural waste shall be reasonably free of dirt and visible moisture. Minimum drying period for wood waste before burning with the following diameter: Under 6" 15 days, between 6" and 12" 30 days, 12" and 24" 45 days, and more than 24" 60 days.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	The actions taken to minimize emissions before and during fires are specified in the smoke management plan.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Written burn plans are not required by the smoke management plan. Refer to District Rules and Regulations.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Smoke monitoring is required if the project is conducted near smoke sensitive areas or if smoke from the project may impact smoke sensitive areas, smoke monitoring is required on all projects over 250 acres/day and on those projects that would continue to burning or producing smoke overnight. Smoke dispersal surveillance and monitoring is accomplished by the following methods indicated in the smoke management plan: balloon, RAWS, aircraft, visual monitoring, weather forecast and on-site weather observations. A test burn is done on a small portion of the project prior to the burn. As part of the smoke management plan, the land manager must provide a wind prescription that describes ideal, acceptable and unacceptable wind direction and identification of potential meteorological conditions that would inhibit smoke dispersal. Smoke management plans ask the land manager to indicate if the burn is likely to impact a Class I airshed.
13. Must the affected public be notified of planned	Public notification actions are required of planned prescribed burns.

fires? Please describe.	These actions may include notification by radio, newspaper, television, posters/flyers/letters, personal contact and signing.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Yes. If smoke impacts effect any smoke sensitive area the following contingency actions may be required: halt ignitions (except as needed to control the fire), allow the fire to burn to contingency control lines, suppress the fire, begin immediate mop-up, begin mop-up within a certain number of hours of problem identification and complete mop-up within a certain number of hours from initiation.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	Smoke monitoring is required on all projects over 250 acres/day, those that produce emissions over multiple days, and projects near smoke-sensitive areas. The land manager is responsible for monitoring. When air monitoring is required, particulate matter (PM10) is what is being monitored.
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	There has not been a public education and awareness program established at this time. A public workshop meeting and public hearing was held when developing the smoke management plan.
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	All smoke related complaints must be forwarded by the land manager immediately to the District and a log of all complaint calls related to a burn project is kept in the project folder for a period of one year from the conclusion of the burn project.
18. What penalties are authorized for non-compliance?	Both criminal or civil penalties as listed in the California Health and Safety Code can apply (From \$1,000 to \$50,000 a day). Every day during any portion of which such violation occurs, constitutes a separate offense.
19. Are post-burn reports required? What information is required?	A post-burn smoke management evaluation is required to be kept in the project folder and is subject to review by the TCAPCD.

Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	CARB will review statewide effectiveness.
21. What are the review criteria?	
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<p>The smoke management plan identifies the following smoke sensitive areas: population centers (e.g. towns, villages, developments) hospitals, schools, daycare centers, nursing homes, shopping centers, public events, and may include campgrounds and trails inhabited by a significant number of people.</p> <p>The smoke management plan asks the burner to identify the (distance and direction from the fire) smoke sensitive areas or receptors that could be adversely affected by the burn.</p> <p>Contingency actions may be required if smoke sensitive areas are impacted by the fire.</p> <p>If smoke sensitive area are expected to be impacted by the burn, additional public notification may be required within the impacted area.</p>
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	
24. What additional smoke management requirements apply if the performance standards have been exceeded?	
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	No agricultural burning is permitted that will create a nuisance as defined by Section 41700 of the California Health and Safety Code. Number of complaints is used (more than 6).
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	No
27. How does the State and/or local districts fund operation of the smoke management program (e.g.,	The TCAPCD charges \$30 for each smoke management plan submitted and \$.50 per acre burned.

program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	The TCAPCD maintains an annual emission inventory of PM10 emissions for all prescribed burns. The amounts are based from calculated emission from actual acres burned, fuel types, and estimated fuel burned.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	There are no mechanisms in place at this time to record emission reduction achieved.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	Not at this time.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	The TCAPCD has no specific requirements regarding aerial application of herbicides. The TCAPCD does not have any policies or regulations protecting air quality regarding aerial or ground application of herbicides. The TCAPCD does not have any air quality regulations on burning previously treated vegetation with herbicides.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	None that I am aware.

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Communication with Tuolumne County APCD, California 3/25/02

Smoke Management Program Components Regarding Vegetative Management

[1]Title 17, Smoke Management Guidelines, California Code of Regulations, March 14, 2001.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Tuolumne County APCD and local Fire agencies
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	Tuolumne County is one of seven air pollution control districts that make up the Mountain Counties Air Basin (MCAB). The MCAB consists of Amador, Calaveras, El Dorado, Mariposa, Northern Sierra (Nevada, Plumas, and Sierra Counties), Placer, and Tuolumne air pollution control districts. The seven air districts work closely together employing a regional approach to air pollution control. The District will notify air districts, fire protection agencies, and other public agencies of impending large or multi day burn projects by either emailing or faxing Controlled Burn/Prescribed Fire Notification Forms and/or Controlled Burn Notices (CB-3). Biannual meetings of the MCABSMA and monthly MCAB TAC meetings will be used to provide air district staff and land managers notification of upcoming burn projects, improve communication procedures, and provide feedback
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Yes.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural and Prescribed Burning.
5. How do land managers apply for authorization to burn?	The District operates a daily burn authorization system that regulates agricultural and prescribed burning. The burn authorization system specifies the amount, timing, and location for each burn project. Burn authorizations may be issued to land managers and burners for specific burn projects 24 hours in advance of ignition of each project. To

	<p>obtain District authorization to burn any project, the land manager or burner must contact the District via telephone, fax, E-mail, or in person announcing the intent to burn. The burner must submit the Daily Authorization Request & Information Reporting Form (Appendix C, Section 5) or other suitable form to the District 24 hours in advance of the burn. Using the above criteria, District staff would either grant or deny authorization to burn.</p> <p>A burn authorization from the District only authorizes the ignition of a burn, if the smoke management conditions specified in the project's Smoke Management Plan are met at the time of ignition and for the duration of the burn. A burn authorization does not relieve the burner from meeting the conditions of the smoke management plan.</p> <p>To receive a burn authorization for burning on a no-burn day, the land manager/burner must submit a completed Authorization to Burn on a No Burn Day Burn Application (Appendix E) to the District as soon possible, and prior to ignition. As a prerequisite to burning on a no-burn day, the District requires that the burn project be entered with ARB and have received the 48/72/96 notices for at least 3 days prior to ignition. In addition, the District may require the land manager/burner to supply on-site or RAWS meteorological weather observations, site specific weather forecasts, or other information necessary to assist in authorizing the burn project.</p> <p>The District may require the land managers/burners to file their burn project with ARB to receive a 48-hour forecast, 72-hour outlook, and a 96-hour trend. To accomplish this, the land manager/burner shall submit a completed CB-3 form (Appendix F) to the ARB. The land managers/burners shall indicate the District's contact information on the CB-3 form to ensure the ARB provides the forecast information to the District. The land manager/burner may contact the District after 3 p.m. Monday through Friday or the ARB before 4 p.m. on weekends and holidays to obtain the forecast information only if the ARB does not provide that information directly to the land manager/burner.</p>
6. What are the criteria for getting permission to burn?	The ARB will announce by 3:00 p.m. every day for each of the state's air basins or other specified areas whether the following day is a permissive

	<p>burn day or no-burn day, or whether the decision will be announced on the following day. If conditions preclude a forecast until the next day, the decision will be announced by 7:45 a.m.[1]</p> <p>Burning must comply with all conditions specified on the permit, which must have district approval consistent with the Guidelines. [1]</p> <p>An air district may, by special permit, authorize burning on days designated by the ARB as no-burn days if the denial of such permit would threaten imminent and substantial economic loss. [1]</p> <p>Air district SMPs must include procedures for authorizing burning, including a procedure for authorizing individual prescribed burns no more than 24 hours prior to ignition of fire. [1]</p> <p>Air district SMPs must require district review and approval of smoke management plans (burn plans). [1]</p>
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<p>Multi-day burns require authorization on a daily basis from the District and consultation with the ARB.</p>
<i>Minimizing Air Pollutant Emissions</i>	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<p>Burning alternatives are described in the SMP. Applicants must list the alternatives to burning that have been considered for this burn project and the basis of why the alternatives were not feasible or justified. Types of alternatives are listed in the SMP. Additionally, for projects requiring NEPA/CEQA environmental documentation, alternatives to burning are addressed in the air quality section of such documents. The location of these documents is noted in the SMP.</p>
<p>9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?</p>	<p>In the case where, by special permit, an air district authorizes burning on days designated by the ARB as no burn days, a district will limit the amount of material which can be burned in any one day and only authorize burning which is not likely to cause or contribute to exceedences of air quality standards or result in smoke impacts to smoke sensitive areas. [1]</p> <p>Air district SMPs must include a daily burn authorization system that regulates burning in order to minimize smoke impacts on smoke</p>

	<p>sensitive areas, avoid cumulative smoke impacts, and prevent public nuisance. [1]</p> <p>Air district SMPs must include procedures for addressing cross-jurisdictional smoke impacts by coordinating with neighboring air districts, regions, or states. [1]</p> <p>Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices. [1]</p> <p>Air district SMPs must provide, if necessary, procedures for prioritizing burning that districts can use to minimize smoke impacts. Efforts to reduce smoke emissions must also be considered. [1]</p> <p>Air district SMPs must require vegetation to be in a condition that will minimize the smoke emitted during combustion when feasible. [1]</p> <p>Air district SMPs must require material to be burned to be piled where possible, unless good silvicultural practices or ecological goal dictate otherwise. [1]</p> <p>Air district SMPs must require piled material to be burned to be prepared so that it will burn with a minimum of smoke. [1]</p>
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	District SMPs must include plans to provide for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<p>Burn projects less than 10 acres in size or that will emit less than one ton of particulate matter may only need to obtain a burn permit. Burn projects greater than 10 acres or that will emit in excess of one ton of particulate matter must complete a Smoke Management Plan. The following minimum smoke management actions will be considered for every burn project, and may require written submittal to the District of the actions taken consistent with the guidelines:</p> <p>1) Meteorological Prescription: Provide a detailed meteorological prescription that must be met to proceed with the burn. At a minimum the prescription must include acceptable wind direction. Other considerations may include wind speed, temperature profile, winds aloft, humidity, temperature, actual and predicted inversions, burn day</p>

	<p>status, and forecast precipitation. The District may require weather forecasts to be obtained to make smoke management decisions for the burn project.</p> <p>2) Contingency Actions: The actions the burner will take if smoke from the burn project produces unacceptable smoke impacts, which may include: stopping further ignitions, active fire suppression, rapid mop up, and/or other appropriate techniques approved by the District.</p> <p>3) Smoke Mitigation: Actions that will be taken to minimize smoke from the burn, which may include: minimum drying times/fuel moistures, piling and/or windrowing materials, active mop up of smoldering, pre-fire fuel treatment, and/or other appropriate techniques.</p> <p>4) Burning Alternatives: Describe the alternatives to burning that have been considered for this burn project and the basis of why the alternatives were not feasible or justified. Types of alternatives are listed in the SMP. Additionally, for projects requiring NEPA/CEQA environmental documentation, alternatives to burning are addressed in the air quality section of such documents. The location of these documents is noted in the SMP.</p> <p>5) Smoke Sensitive Receptors: A description of the smoke sensitive receptors such as towns, schools, hospitals, roads, recreational and Class 1 areas is required along with a map showing the location of sensitive receptors and predicted smoke transport.</p> <p>6) Public Notification: The potentially affected public will be notified of a burn project by one or all of the following: media announcements, phone contact lists, road signs, and/or other appropriate techniques.</p> <p>7) Cross Jurisdictional Notification: The District will notify air districts, fire protection agencies, and other public agencies of impending large or multi day burn projects by either emailing or faxing Controlled</p>
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	<p>Burn/Prescribed Fire Notification Forms and/or Controlled Burn Notices (CB-3). Biannual meetings of the MCABSMA and monthly MCAB TAC meetings will be used to provide air district staff and land managers notification of upcoming burn projects, improve communication procedures, and provide feedback for better coordination and uniformity in the Smoke Management Program.</p> <p>8) Complaint Handling Procedures: A procedure is in place that insures all complaints regarding smoke impacts received by an agency, company, or individual conducting the burn is promptly reported to the District.</p> <p>9) Smoke Monitoring: Describe the procedures that will be used to monitor and track the smoke transport from the burn project, which may include: a smoke spotter to check on downwind sites, ambient air monitoring, aerial monitoring, or other appropriate methods.</p>
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	SMPs must provide a detailed meteorological prescription that must be met to proceed with the burn. At a minimum the prescription must include acceptable wind direction. Other considerations may include wind speed, temperature profile, winds aloft, humidity, temperature, actual and predicted inversions, burn day status, and forecast precipitation. The District may require weather forecasts to be obtained to make smoke management decisions for the burn project.
13. Must the affected public be notified of planned fires? Please describe.	See Question 11.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	See Question 11.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	For every burn, regardless of size, actions must be considered (which may required written submittal of a SMP): the procedures that will be used to monitor and track the smoke transport from the burn project, which may include: a smoke spotter to check on downwind sites, ambient air monitoring, aerial monitoring, or other appropriate methods.

Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	Public and private land management agencies have been given the opportunity to comment on this Program through participation in the Mountain Counties Air Basin Smoke Management Alliance (MCABSMA). The District plans to continue participating in the MCABSMA, which provides a forum to develop agreements with public and private land management agencies to provide more detailed smoke management activities and associated tools.
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<p>Subject to time and resource constraints, District staff will conduct on-site inspections of a representative number of agricultural and prescribed burns each year. Such inspections are prioritized based on the following criteria:</p> <p>a) Active burns that are conducted in an area or by a source that historically generates many complaints; Active burns that are generating complaints; Active burns that are large (100+ acres) or located near sensitive receptors; and Planned burns representing a variety of sources and fuels.</p> <p>b) Inspections of active burns will document that meteorological conditions are within acceptable parameters; that the amount of acreage and/or fuel specified in the burn registration and authorization, is what is actually being burned; and that the burn is not impacting any sensitive receptors.</p> <p>c) Inspections of planned burns document that the projected acreage and/or fuel loading is consistent with that specified in the burn registration; that the meteorological prescription is reasonable for the location; and that actions taken to reduce fuel loading and/or smoke emissions have been carried out.</p> <p>d) If unacceptable smoke impacts occur to a smoke sensitive receptor/area from an authorized burn, and such impacts are verified by</p>

	District staff, then the burner will be promptly notified and required to take such contingency actions as are possible.
18. What penalties are authorized for non-compliance?	Notices of Violation issued for violations of the Smoke Management Program are handled according to the District's Mutual Settlement Program.
19. Are post-burn reports required? What information is required?	For those burns that are either in excess of 250 acres, have created smoke impacts, or were burned on no burn days, the responsible burn agency must complete a District Project Post Burn Form (Appendix C, Section 6). These are to be completed and returned to the District within 30 days from the completion of the burn project. This information will then be reviewed and can assist in issuing burn authorizations for similar projects.
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	The District maintains a daily log, recording burn authorizations, location of the burns, amounts of material burned, planned and unplanned wildfires occurring that day, and any other relevant information related to smoke impacts for that day. This data is used in the burn authorization process for subsequent days and in evaluating the success and efficiency of the smoke management program. Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [1]
21. What are the review criteria?	See Question 20.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [1]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	Not applicable.

25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	a) The State and many local counties do have nuisance regulations which apply to smoke impacts from prescribed and agricultural burning. District staff will conduct on-site inspections of a representative number of agricultural and prescribed burns each year. Such inspections are prioritized based on the following criteria: Active burns that are conducted in an area or by a source that historically generates many complaints; Active burns that are generating complaints.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	Yes.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	Costs associated with implementation and operation of the SMP are addressed by individual districts. As provided by State law, districts can recover costs associated with the compliance with State requirements by fees on sources that engage in burning through permit fees. The structure for assessing fees varies by district. The ARB is also committed to working with all stakeholders, including districts and affected sources, to fund the SMP and is developing funding proposals to provide technical and monitoring support.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	A report of the agricultural and prescribed burning conducted each calendar year in the District is submitted to ARB within 45 days of the end of each calendar year. The report includes the estimated tonnage and/or acreage for each type of waste burned from both agricultural and prescribed burning by county.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	No.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	Unknown.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or	No.

regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Communication with Yolo-Solano County AQMD, California 3/25/02

Answers given for Sacramento Metro AQMD are the same for Yolo-Solano County AQMD, per communication with YSAQMD Burn Program Manager.

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

[1]The California Health and Safety Code, Agricultural Burning (CHSC)

[2]Title 17 of the California Code of Regulations (CCR), both current and revised.

[3]The Sacramento Valley Smoke Management Program (formerly called the Annual Agricultural Burn Plan.)

Sacramento Basin Burn Coordinator: Fife Environmental

[4]Sacramento Metro Air Quality Management District Rule 501, Agricultural Burning. Available at <http://www.airquality.org/rules/rule501.htm>.

[5]Sacramento Metro Air Quality Management District Rule 303, Agricultural Burning Permit Fees. Available at <http://www.airquality.org/rules/rule303.htm>.

[6]Sacramento Valley Basinwide Air Pollution Control Council's Smoke Management Plan Template for prescribed burning permit applicants.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	The Yolo-Solano County Air Quality Management District.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<p>SMP participants also include certain local agricultural departments, fire districts, the ARB Meteorology and Compliance Program Review staff, Weather Network and the Basin Burn Coordinator. Current SMP provisions require districts to notify adjacent districts whenever a considerable number of acres to be burned are allocated to a zone contiguous to another district. [3]</p> <p>The current SMP also provides that if the YSCAQMD forecasts a Spare The Air Day (based upon the EPA Air Quality Index for the Federal 8-hour ambient standard for ozone), the YSCAQMD will notify adjacent air districts. These adjacent air districts are those within the Sacramento Federal Ozone Nonattainment Area. The SMP further requires these districts to declare no burning in specified adjacent zones for the day(s) of the forecast. The YSCAQMD also notifies the ARB and the Basin Burn Coordinator. The SMP also contains a provision for districts to voluntarily</p>

	<p>declare no-burn days on days forecast to exceed the ozone standard in Shasta County. [3]</p> <p>In addition, the YSCAQMD also meets, at least annually, with ARB staff, Bay Area and San Joaquin Unified air district representatives, and related Sacramento River delta fire officials and burners to discuss and reduce smoke transport issues from burning in the delta area.</p>
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Yes.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural and prescribed burning.
5. How do land managers apply for authorization to burn?	<p>A valid permit must be obtained from a district or designated agency prior to burning. Each applicant for a permit must provide information requested by the district and the designated agency. [2]</p> <p>SMPs must include procedures for acquiring information on amounts of material burned on each day, on planned and unplanned wildfires, and other information needed to establish the burn authorization for the following day. [2]</p> <p>SMPs must require registration of all planned burn projects annually or seasonally, including areas considered for potential naturally-ignited wildland fires managed for resource benefits, with updates as they occur. SMPs must require submission of smoke management plans (burn plans) within 72 hours of the start of the fire for naturally-ignited wildland fires managed for resource benefits that are expected to exceed 10 acres.[2]</p> <p>SMPs must require the permit applicant to file with the district a statement from the Department of Fish and Game certifying that the burn is desirable and proper if the burn is to be done primarily for improvement of land for wildlife and game habitat. [2]</p>
6. What are the criteria for getting permission to burn?	The ARB will announce by 3:00 p.m. every day for each of the state's air basins or other specified areas whether the following day is a permissive burn day or no-burn day, or whether the decision will be announced on the following day. If conditions preclude a forecast until the next day, the

	<p>decision will be announced by 7:45 a.m.[2]</p> <p>Burning must comply with all conditions specified on the permit, which must have district approval consistent with the Guidelines. [2]</p> <p>An air district may, by special permit, authorize burning on days designated by the ARB as no-burn days if the denial of such permit would threaten imminent and substantial economic loss. [2]</p> <p>Air district SMPs must include procedures for authorizing burning, including a procedure for authorizing individual prescribed burns no more than 24 hours prior to ignition of fire. [2]</p> <p>Air district SMPs must require district review and approval of smoke management plans. [2]</p>
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<p>SMPs must require, as appropriate, daily coordination between the land manager or his/her designee and the air district or the ARB for multi-day burns which may impact smoke sensitive areas, to affirm that the burn project remains within the conditions specified in the smoke management plan (burn plan), or whether contingency actions are necessary. [1]</p> <p>In addition to the annual SMP public workshop and hearing process, the SMP provides for an annual educational and informational meeting for growers, which covers the burning program policies and procedures. [3]</p>
<i>Minimizing Air Pollutant Emissions</i>	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<p>The Rice Straw Burning Reduction Act requires the phase-down of rice straw burning in the Sacramento Basin. The Act facilitates the exploration of alternatives to burning. California law also provides economic incentives for alternatives demonstration projects and tax relief for end users. ARB and CDFA administer these programs.</p>
<p>9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?</p>	<p>Permittees must ignite fires with an approved ignition device and as rapidly as practicable. Specific lighting techniques such as backfiring and stripfiring into the wind for certain field crops are intended to minimize particulate emissions. Waste must be physically arranged to burn with a minimum of smoke, minimum drying times must be adhered to or waste must pass the "crackle test" (a test to check the moisture content of rice straw) and materials must be reasonably free of excessive dirt, soil, and</p>

	<p>visible surface moisture. [2][3][4]</p> <p>The SMP is the primary mechanism to restrict acreage on any given burn day, although the APCO may further restrict burning in general by declaring a no burn day as noted above. The YSCAQMD authorizes specific times and sites for burning on each burn day to protect downwind areas. Acreage allocation decisions are made close to the actual burning times in order to improve forecast reliability and burning, meteorology, and air quality conditions are reviewed throughout the day. Maps are used to plot burns in relation to wind speed and direction and distance to downwind populated areas. [3]</p> <p>Permittees must adhere to ignition hours described in the SMP as specifically shown on their permits or as otherwise declared by the APCO. [3][4]</p>
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Pursuant to the SMP, the basin burn coordinator maintains various burn statistics for each district and the basin.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<p>Yes. The YSCAQMD's Rule 501 has supported these requirements. In addition, Title 17 has for many years required the Sacramento Valley Basinwide Air Pollution Control Council (BCC) and its technical Advisory Committee (TAC) to prepare an Annual Agricultural Burning Plan for "agricultural operations" burning, i.e. burning by growers and raisers of livestock, in the basin. Recent revisions to Title 17 require all California districts to prepare an SMP, for both agricultural operations and prescribed burning, by July 1, 2001. In the case of the Sacramento Basin, this SMP replaces the Annual Agricultural Burn Plan. The current Agricultural Burn Plan has been renamed to the Smoke Management Program. The SMP continues to place responsibility and authority on local air districts for implementation. [2][3]</p> <p>The CHSC provides that ARB shall designate no-burn days [1]. During the intensive fall burn season, the SMP provides that the Basin Burn</p>

	<p>Coordinator will announce the basin burn day decisions. [3] The YSCAQMD may declare no-burn days even when ARB does not, when the YSCAQMD forecasts an exceedance of an air quality standard [4]. In addition, local fire jurisdictions may, through their own authority, declare no-burn days superceding any decision made by either the ARB or the YSCAQMD.</p> <p>SMPs must require the submission of smoke management plans for all burn projects greater than 10 acres or estimated to produce more than one ton of particulate matter. These plans must contain, at a minimum, the following information: location, types, and amounts of material to be burned; expected duration of the fire from ignition to extinction; identification of responsible personnel, including phone contacts; and identification and location of all smoke sensitive areas. [1]</p> <p>SMPs must require the submission of more detailed smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain the information above and the following additional information: identification of meteorological conditions necessary for burning; the smoke management criteria the land manager or his/her designee will use for making burn ignition decisions; projections, including a map, of where the smoke from burns is expected to travel; specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan; an evaluation of alternatives to burning considered; and discussion of public notification procedures. [1]</p>
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<p>The YSCAQMD primarily relies upon the burn day decision made by the ARB pursuant to the SMP. Those decisions are based upon a wide array of meteorological and air quality data sets, including 1) atmospheric stability, inversion heights, and depth of the mixing layer; 2) wind speeds and direction (upper level and surface); 3) relative humidity; 4) baseline air quality Coefficient of Haze (COH), PM10, Bscat data and airport visibilities. Daily decisions on burning attempt to match the variable acreage amount with the meteorological dispersion capacity and considering the beginning baseline air quality level. During the fall burn season, meteorological information regarding current morning and</p>

	<p>forecast afternoon conditions are disseminated. The SMP also requires routine review of burning, meteorology, and air quality conditions throughout the day depending upon the circumstances. [3]</p> <p>During ozone season the YSCAQMD relies, in addition, upon its ozone forecast to make burn decisions. The YSCAQMD is exploring the feasibility of no-burn days based upon particulate matter forecasts.</p> <p>Rule 501 enables the APCO to restrict burning or declare a no-burn day if burning will cause a violation of State or Federal ambient air quality standards including the State visibility standard. [4]. However, the YSCAQMD does not contain any Class I areas. Under the SMP, FAA hourly airport visibility observations are factored into daily burn decisions.</p>
13. Must the affected public be notified of planned fires? Please describe.	<p>In addition to the annual SMP public workshop and hearing process, the SMP provides for an annual educational and informational meeting for growers, which covers the burning program policies and procedures. [3] In addition, the Agricultural Commissioner contacts each grower through the permitting process.</p> <p>Effective 9-1-2000, for prescribed burning, the CCR requires procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. The YSCAQMD has very little prescribed burning. These requirements, however, are now made part of the permittees Smoke Management Plan.</p> <p>The ARB provides burn day information to the public via the Internet; however, this is general information only. It is not an indication of whether or not individual fires have been authorized. The web pages also contain the names and phone numbers of the air quality districts in the Valley</p>
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<p>The SMP is the primary mechanism to restrict acreage on any given burn day, although the APCO may further restrict burning in general by declaring a no burn day as noted above. The YSCAQMD authorizes specific times and sites for burning on each burn day to protect downwind areas. Acreage allocation decisions are made close to the actual burning times in order to improve forecast reliability and burning, meteorology, and air quality conditions are reviewed throughout the day. Maps are</p>

	<p>used to plot burns in relation to wind speed and direction and distance to downwind populated areas. [3]</p> <p>Permittees must adhere to ignition hours described in the SMP as specifically shown on their permits or as otherwise declared by the APCO. [3][4]</p> <p>SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan. [2]</p>
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<p>SMPs must include a description of the meteorological and air quality monitoring data to be used to provide data for determining the basinwide meteorological and air quality conditions. [2]</p> <p>Air district SMPs must require smoke management plans (burn plans) to include appropriate monitoring as required by the district for the following burn projects: projects greater than 250 acres; projects that will continue burning or producing smoke overnight; projects conducted near smoke sensitive areas; or as otherwise required by the district. [2]</p>
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<p>The annual revision to the SMP includes public workshops and hearings to solicit comments from interested persons and explain the program goals and requirements. [3] In addition, the YSCAQMD maintains a broad-based outreach program, which includes aspects of agricultural, residential and fireplace burning. A brochure and web-based information discussing how to minimize wood smoke and explaining the negative health effects of wood smoke are available to the public.</p>
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<p>The CHSC contains specific provisions criminal and civil violations of air pollution laws. A burn permit may be suspended or revoked pursuant to Rule 501. [4]</p> <p>The SMP strengthens enforcement of the agricultural burning program</p>

	requirements through aerial and ground surveillance to ensure compliance. [3]
18. What penalties are authorized for non-compliance?	The YSCAQMD has a board-approved Mutual Settlement Program (MSP) through which most violations are handled. If a case is deemed unsuitable for this MSP process, the APCO may refer the case as a criminal or civil matter. The vast majority of the YSCAQMD's cases are handled through the MSP.
19. Are post-burn reports required? What information is required?	SMPs must require a post-burn smoke management evaluation by the burner for fires greater than 250 acres. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	The Basin Burn Coordinator prepares an annual report for the fall burn season based upon air quality, meteorological and burn data. The data are collected and analyzed and form the bases of suggested program changes. The BBC reviews and annually amends the SMP as needed. All amendments are submitted to the ARB, which must concur with the amended SMP before it can become effective. Interested parties such as the affected industry and environmental groups also have opportunities to address the SMP and provide input[3].
21. What are the review criteria?	See Question 20.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Burns greater than 10 acres must identify the location of smoke sensitive areas. [2]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No specific "performance standards" however have been adopted.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	Not applicable.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires?	The State and many local counties do have nuisance regulations which apply to smoke impacts from prescribed and agricultural burning.

What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	Yes.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<p>The YSCAQMD imposes burn permit fees, which cover approximately thirty percent of the field elements of the program. [5] Permit fees include a \$50 base fee and an acreage fee based upon the type of material. Orchard or vineyard pruning waste is \$0.50 per acre. Orchard removal waste is \$3.50 per acre. All other burnable waste, including field stubble and weeds, is charged at \$1.75 per acre.</p> <p>The remainder of the program is funded through State "subvention" funding.</p>
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<p>The YSCAQMD maintains daily hardcopy records with burn specific information. The YSCAQMD also maintains a tracking database. The emission inventory staff annually prepare an estimate based upon this information. The emissions information is provided annually to the ARB.</p> <p>Pursuant to the SMP, the basin burn coordinator maintains various burn statistics for each district and the basin.</p>
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Not at the current time.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	No.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated	No.

vegetation with herbicides?	
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Appendix 5

State of Colorado Survey Responses

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Communication with Colorado APCD 4/26/02

Smoke Management Program Components Regarding Vegetative Management

Source of summary information: [1] Colorado Smoke Management Memorandum of Understanding & Plan. Prepared by the Air Pollution Control Division. January 1, 2001. The Colorado Smoke Management Memorandum of Understanding & Plan includes: a summary of responsibilities of the signatories, a time line of activities, the Colorado smoke management plan, permit application forms APC-95A and APC-95B, vista data base, and local health agency contact list. The Colorado Smoke Management Memorandum of Understanding & Plan can be found at <http://apcd.state.co.us/smoke>

[2] Comments received from the Colorado Department of Public Health and Environment dated August 27, 1999.

[3] Comments received from the Colorado Department of Public Health and Environment dated September 20, 2000.

Special Note:

- This survey was reviewed by the Colorado Department of Health. For more information, contact Coleen Campbell, CDPHE, 4300 Cherry Creek Drive South, APCD-B1, Denver, CO, 80246.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Colorado Air Pollution Control Division (APCD) is responsible for making burn/no burn decisions by approving or disapproving permit applications. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The following organizations are signatories to the Colorado Smoke Management Memorandum of Understanding and Plan (MOU): Colorado Air Pollution Control Division, Colorado Division of Wildlife, Colorado State Forest Service, US Air Force Academy, US Army Fort Carson, USDA Forest Service, USDI Bureau of Land Management, USDI Fish and Wildlife Service, and USDI National Park Service. USDOE, Rocky Flats Program, City of Boulder Wildland Fire Department [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The signatories of the MOU agree to abide with the Colorado SMP, which includes ensuring proper smoke management of prescribed fires conducted by the signatories. [1] Permit application and reporting requirements for all wildland fire projects are regulated by Regulation 9, Open Burning, Prescribed Fire and Permitting. • Projects not covered by the SMP must submit Form APC-24 (Application for Open Burning Permit) for specific projects. [1]
4. What types of burning (agricultural, silvicultural,	<ul style="list-style-type: none"> • Acceptable burning projects within the MOU are: (1) Hazardous fuel

other) are covered by the program?	<p>reduction, (2) Slash disposal from timber sales and roads constructed within contract areas, (3) Wildlife and livestock habitat improvement, (4) Forest stand improvement, (5) Insect and disease control, (6) Water yield improvement, (7) Maintenance of natural ecosystems, (8) Maintenance of threatened and endangered species, and (9) Other vegetative management improvement projects. [1]</p> <ul style="list-style-type: none"> • The APCD is prohibited by state law from requiring permits for agricultural burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • No planned ignition prescribed fire may be initiated without first obtaining a permit from the APCD. For planned ignition prescribed fires, an application for a permit for each planned burn must be completed using Form SMP-A. An application may be submitted at any time, but must be submitted at least 30 days prior to the burn date. Many district offices submit permit applications in November or December for all potential prescribed burning areas during the up coming year. The APCD, after review and decision, will inform the applicant of the granting of the permit in total or in part or the denial of the permit within 30 days after receipt of a complete application. The permit application must contain simple approach smoke estimation model (SASEM) output, explicitly showing those conditions under which the burn will be conducted and visibility impacts on smoke sensitive areas. [1] • Applications for prescribed natural fire are made on an annual basis using Form SMP-G. The application will be reviewed and approved or denied. The permit application must contain a plan and a map showing the area for natural fire. [1] • Projects not considered part of forest and public land management projects must submit Form APC-24 for specific projects. The APCD will process those complete applications within 20 days as they are received throughout the year. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • For planned ignition prescribed fires: (1) The application must be approved, (2) The project must be acceptable within the MOU, (3) There should not exist any practical alternative to open burning, (4) The applicant must demonstrate that the project does not violate applicable ambient air quality standards, (6) The applicant must comply with

	<p>applicable fire protection and safety requirements, and (7) The permits must be valid for the dates listed on the permit. Extension or modification of dates must be approved by the APCD. The APCD will consider (1) potential contribution to area air pollution, (2) climatic conditions on the day or days of burning and (3) proximity to populated areas. [1]</p> <ul style="list-style-type: none"> • Each land management organization signatory to the MOU is responsible for proper smoke management for prescribed fires it conducts and, on a case-by-case basis, identifies and implements the best smoke management techniques appropriate to minimize the amount and /or impact of smoke produced. [1] <p>6. <i>Continued</i> • If the APCD determines that the burn is degrading air quality to levels expected to violate air quality standards, suppression action will be promptly initiated. [1]</p> <ul style="list-style-type: none"> • To the degree practical, all burning must be done during periods conducive to smoke dispersal, to be determined by using the best meteorological information reasonably available. [1] • For prescribed natural fire: (1) an annual application must be approved, (2) the APCD must be notified by telephone as soon as possible, but no later than two hours after the start of the next working day of the prescribed natural fire area if the fire exceeds one acre. [1] • For projects not covered by the MOU, and that are not agricultural burns, an open burning permit is required. [1]
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<ul style="list-style-type: none"> • A MOU exists between the APCD and large land managers in which the signatories agree to follow the SMP. [1] • Burner qualifications are not discussed in the SMP. • The land management agencies and the Colorado APCD will develop and present interagency training to promote understanding of the regulatory context and effects of air pollution as well as fire ecology and smoke management. [1]
Minimizing Air Pollutant Emissions	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are</p>	<ul style="list-style-type: none"> • Although specific alternatives are not discussed, the signatories of the MOU must consider practical alternatives to burning and may conduct prescribed burning only if there are no practical alternatives. The APCD reserves the right to reject a project for which there appears to be

emission reductions tracked?	<p>a reasonable alternative to burning. [1]</p> <ul style="list-style-type: none"> • The SMP does not discuss incentives or disincentives for alternative burning and emission reduction techniques. Regulation 9 requires that significant users of wildland fire submit a planning document to the Colorado Air Quality Control Commission for public hearing. The document shall indicate how air quality considerations are made early on in the land manager's planning process as alternative choices about fuel management are being made by the land manager that may eventually lead to a request to the APCD for a prescribed fire permit. • The Colorado APCD is responsible for developing an emission inventory for pollutants of interest from the burning activity reported annually. [1]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Each land management agency signatory must apply the best smoke management techniques in order to minimize smoke impacts and emissions. The land manager will select appropriate smoke management techniques on a case-by-case basis. [1] • As practical, all burning must be done during periods conducive to smoke dispersal. Each signatory shall endeavor to use the best meteorological information reasonably available. [1] • For planned ignitions, a single test fire may first be ignited to indicate local mixing depths. [1] • All piled material must be reasonably dry and free of dirt. [1] • In plans for prescribed fires, each land management organization will have an operational plan identified enabling it to reduce fire emissions, eliminate ignitions in certain areas, or take appropriate suppression action. Contingency plans will be implemented when meteorological conditions warrant, acceptable limits of smoke accumulation are or will be exceeded, and/or it is anticipated that the prescription for a particular fire will be exceeded. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The permit application for planned ignition prescribed fires must include a demonstration that the project will not violate applicable ambient air quality standards. [1]
Smoke Management Components of Burn Plans	
11. Are written burn plans required by the SMP?	<ul style="list-style-type: none"> • For planned ignition prescribed fire, signatories must complete one

What information must be included?	<p>permit application using Form SMP-A for each planned burn. This permit application requests the following information: (1) The name of the organization applying for the permit and the contact's name, address, telephone number, (2) Location of the burn, total acreage or description of piles, and the type of project, (3) Information regarding the proximity of populated areas to the planned project, (4) Procedures for notification of smoke sensitive areas, and (5) The planned burn dates and the meteorological/climatic conditions under which the burn is planned. In addition, the following information must accompany the permit application: (1) Model output from Simple Approach Smoke Estimate Model (SASEM) or a refined model, which has prior approval of the APCD, (2) A demonstration, conducted with SASEM, that the project will not violate applicable ambient air quality standards, (3) a completed Smoke Risk Rating Worksheet, and (4) Procedures to ensure compliance with applicable fire protection and safety requirements. [1]</p> <ul style="list-style-type: none"> • For projects not covered by the MOU and that are not agricultural burns, burners must submit Form APC-24 (Application for Open Burning Permit). [1] <p><i>11. Continued</i> • For prescribed natural fire, the signatories must complete a permit application on an annual basis using Form SMP-G. This permit application must include: (1) The name of the organization applying for the permit and the contact's name, address, telephone number, (2) Location of the burn, (3) Information regarding the proximity of populated areas to the burn. In addition, a plan and a map showing the area for natural fire, must accompany the initial permit application. [1][3]</p>
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • The permit application for planned ignition prescribed fires must include a demonstration, conducted with SASEM, that the project will not violate applicable ambient air quality standards. [1] • For planned ignitions, a single test fire may first be ignited to indicate local mixing depths. [1] • Burners are required to use the National Weather Service information. [1] • Burners managing projects with a Smoke Risk Rating of moderately

	<p>high must consult with NWS prior to burning to determine what “on-site” meteorological data collection is needed to assist NWS in providing a detailed forecast.</p> <p>Burners managing projects with a high must request an incident meteorologist for the burn and collect ambient PM2.5 data with real time monitors.[3]</p> <ul style="list-style-type: none"> • Each land management signatory must, on a case-by-case basis, explicitly consider potential visibility impacts of smoke in Class I areas and other scenic and/or important views. Potential visibility impacts of smoke from any prescribed burn must be explicitly considered and factored into the prescription for that burn. [1] • If at any time the responsible land management agency determines that the prescription for a particular prescribed fire has been exceeded (including impacts on visibility) the responsible parties must promptly initiate suppression action. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • For prescribed planned fire, burners must contact local agencies and provide the burn’s location, date, and duration. Procedures for notification of smoke sensitive areas of burning date(s) for planned ignition projects must be included in the applicant’s prescribed burning management plan. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • The land management organization must have a prescribed fire contingency plan in place that will identify how the organization will reduce fire emissions, eliminate ignitions in certain areas, or take appropriate suppression action. [1] • The contingency plans will be implemented when meteorological conditions warrant, or the APCD determines that acceptable limits of smoke accumulation are or will be exceeded, and/or the responsible land management organization anticipates that the prescription for a particular fire will be exceeded. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are	<ul style="list-style-type: none"> • The responsible signatory must monitor the actual fire to a sufficient level to provide information regarding whether or not the fire is within prescription. Monitoring data collected before, during and after the burn should be used to evaluate the achievement of specific smoke management objectives, and to provide feedback for refinement of future

taken if they are exceeded?	<p>prescriptions. [1]</p> <ul style="list-style-type: none"> • If pollutant levels are anticipated to create a significant threat to human health, the APCD may require the responsible land management agency to monitor and/or model pollutants in or near population centers impacted by smoke generated from a particular prescribed fire or wildfire. The APCD will assist in identification of instrumentation, site selection, installation of instrumentation, operation, calibration, quality assurance, quality control, laboratory analysis, data interpretation, and supplies. [1]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • While the SMP does not specifically discuss establishing a public education and awareness program, for prescribed planned fire, burners must contact local agencies and provide the burn's location, date, and duration. [1]
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • All prescribed burning operations are subject to inspection by the APCD. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • If at any time the APCD determines that any condition of the permit is not being complied with, the permit may be revoked for the specific project where the non-compliance is occurring. At such time, all burning activities at the site of the non-compliance will be terminated. In addition to revocation of the permit, the APCD may take any other enforcement action authorized under state statutes, rules and regulations. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • The signatories must report burning activity annually to the APCD by completing and returning Form SMP-F or G (Actual Fire Activity Forms). The forms must be submitted by March 1st of the year following the permit date. Daily actual activity information must be submitted for projects with a smoke risk rating of moderate or greater. The form reports fire activity for the previous calendar year's permitted planned

	<p>ignitions and permitted prescribed natural fires. [1][3]</p> <ul style="list-style-type: none"> • The Actual Fire Activity Forms request information on: (1) Actual beginning and ending burn dates, (2) Actual acreage burned, (3) Fuel loading determination method, and (4) fuel types. [1] • Signatories are asked to annually share information on individual wildfires, the number of acres consumed, their location and other available information that occurred on their lands or on land about which they receive information during the previous calendar year. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The MOU signatories agree to meet annually and evaluate the prescribed fire program, permitting and data collection system, and review and modify the Smoke Management Plan where necessary. [1]
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The SMP defines smoke sensitive areas as Class I areas, scenic and/or important views, especially during times of significant visitor use, urban and rural population centers, schools, hospitals, nursing homes, transportation facilities such as roads and airports, recreational areas, and other locations that may be sensitive to smoke impacts for health, safety, and/or aesthetic reasons. [1] • Smoke sensitive areas that are scenic and/or important views are identified by the APCD and provided to the signatories. [1] • The APCD may require additional information and permit conditions for projects that are proximate to population areas. [1] • Procedures for notification of smoke sensitive areas of burning date(s) for planned ignition projects are included in the applicant's prescribed burning management plan. [1] • Suppression action may be initiated if the APCD determines that the fire will affect smoke sensitive areas especially rural or urban population centers. [1]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The MOU identifies six objectives: (1) To minimize the generation and/or impacts of smoke when prescribed burning is necessary for the conduct of accepted range and forest practices, (2) To assure that the Colorado Ambient air Quality Standards are not exceeded., (3) To

	<p>minimize visibility impacts from smoke in smoke sensitive areas, such as, important and scenic view including those in Class I areas, (4) To minimize the generation and/or impacts of smoke when prescribed burning is necessary to maintain the natural ecosystem, (5) To demonstrate compliance with applicable “conformity” requirements described in Federal law and regulations, as well as Colorado regulation, and (6) To maintain and improve a system to inventory emissions from prescribed fires and wildfires. [1]</p>
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • The burn boss for projects that have not met the performance standards, submit a written incident report to the APCD. The incident report includes specifics as to what happened, contributing factors, and recommendations for prevention of similar incidents in the future. Incident reports are reviewed by the MOU signatories to determine if changes to the MOU or the permitting process are indicated because of the incident or the incident report. [3]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Colorado Air Pollution Prevention and Control Act. (Act) § 25-7-11.3 allows APCD to investigate and take action on air pollution emergencies that endanger public welfare. This portion of the Act has not been used in recent history for any pollution source. All complaints or elevated particulate matter concentrations are investigated and appropriate actions taken. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Regulation #9 and the MOU are not part of the SIP. The long-term strategy portion of the Class I visibility SIP requires that smoke management be addressed. The MOU is a key component of Colorado's smoke management program. Smoke management is one of the programs Colorado considers meet the long-term strategy requirements for preventing future impairment of visibility in any Class I area. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • The current smoke management program is funded from the Air sources Account Fund and the Air Partnership Performance Grant, the vehicle for EPA grant funds. Regulation #9 establishes a fee based program. It is expected that the first fees will be received in late 2002. [2]
28. Does the State and/or local districts maintain	<ul style="list-style-type: none"> • An annual inventory is maintained for prescribed fire projects covered

daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	by the MOU. A daily air pollutant emissions inventory is available for projects with a smoke risk rating of moderate or greater. Multiple day projects are reported as project total emissions. Emission calculations are based on post burn reports of acres burned, fuel type, estimated consumption and fuel loading. [2][3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • There is not a mechanism in place to calculate and record the air pollutant emission reductions achieved from efforts to minimize emissions. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Yes. APCD requested certification during Spring 2001. In November 2001, EPA notified the APCD of several deficiencies. The MOU signatories have made revisions to the permit process and the SMP will be resubmitted to EPA. [3]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	Colorado does not regulate the air quality impacts of other vegetative management treatments.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	Colorado does not regulate the air quality impacts of other vegetative management treatments.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From communication with El Paso County of Health and Environment, Colorado 3/26/02.

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	All open burning activities require a permit from the El Paso County Department of Health and Environment. Colo Dept of Health has delegated authority to EPCDHE.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	El Paso County Department of Health and Environment will provide the State of Colorado on a monthly basis the number of burn permits issued. There are formal MOU’S between the Federal and State agencies but El Paso County is not a party to the MOU’S.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Every person or agency (State or Federal) must apply for a burn permit from El Paso County. Local regulation adopted in fall of 2001 requires anyone who wants to burn must file an application, pay a fee and an on site visit will take place by air quality staff to determine if there is an alternative to burning; if there is, no permit will be issued.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	All open burning is covered by this regulation. Fire Departments are not exempt from obtaining a permit for training fires.
5. How do land managers apply for authorization to burn?	A permit application must be submitted to this department along with a fee, a SASEM Model run and a national certified burn boss.
6. What are the criteria for getting permission to burn?	A site visit by A.Q Staff, Properly filled out application form with all the necessary model runs. A valid permit being issued after site visit.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	No agreements have been established between El Paso County and land managers.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to	Applicant must submit as part of their application feasible alternatives to burning. There are no incentives or disincentives to burning; emission reductions are not tracked locally.

burning and emission reduction techniques? Are emission reductions tracked?	
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	NO burning will take place during high pollution days. No burning is allowed for items such as rubber, tires, plastic, insulated wire or other similar materials.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	No
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	A burn plan is required as of Nov 1 2001.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	SASEM model will determine smoke dispersion. Wind dir must be away from populated areas of community. Permitting agency will determine under what conditions burn can occur.
13. Must the affected public be notified of planned fires? Please describe.	Yes, applicant, if successful in obtaining a permit must notify the public that a burn will take place. Phone calls, public notices are methods that are acceptable.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Prescribed fires will occur on days rated good or fair, burn will occur only under weather conditions approved in the burn plan, ignition of prescribed burn will occur two hrs after sunrise until two hrs before sunset and will not occur during a thermal inversion.
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	Yes, applicant is responsible for conducting a SASEM model run.
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find	This is in the beginning stages of development, all public education responsibility is placed back on the applicant.

more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	If a complaint is filed with EPCDHE a site visit will occur and a determination will be made at that time if they are in compliance with the smoke management plan
18. What penalties are authorized for non-compliance?	Suits will be filed by DHE and if further non compliance continues further action will be taken. Cash penalties can be assessed by state and local agencies.
19. Are post-burn reports required? What information is required?	Not by EPCDHE.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	Annual review of regulation.
21. What are the review criteria?	Effectiveness, costs of program
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Areas around the burn are of greatest concern, applicant must insure that smoke impact issues are taken care of.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	Performance standards are outlined in the permit that is issued or on a case by case basis
24. What additional smoke management requirements apply if the performance standards have been exceeded?	Handled on a case by case basis if needed.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	The City of Colorado Springs has a nuisance ordinance which can be applied to open burning activity.

26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	NO
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	An \$ 80 fee is charged for the burn permit, Permit is good for 6 months.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	The lead planning agency (PPACG) in El Paso County maintains an emission inventory for all pollutants along with the State of Colorado Air Pollution Control Division.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	NO mechanism in place to calculate emission reductions from mop-up, etc.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	No
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	EPCHDE air program has no Air Quality regulations which address herbicides, this issue may be addressed by the Colorado Department of Health Air Pollution Control Division.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	Not in El Paso County. This issue may be addressed by the Colorado Department of Health Air Pollution Control Division.

Appendix 6

State of Idaho Survey Responses

**Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"
EC/R Incorporated - January 26, 2001**

From Communication with Idaho DEQ 4/4/02. All answers from original 2000 survey stayed the same.

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

[1] Montana/Idaho State Airshed Group Operating Guide. September 1999.

[2] Idaho Administrative Code, 58.01.01, Air Pollution Control, Sections 600 through 616, Rules for Control of Open Burning. 1998.

[3] Comments received from the Idaho Department of Environmental Quality on August 27, 1999.

[4] Idaho Administrative Code, 58.01.10, Air Pollution Control, Section 550 through 562, Air Pollution Emergency Rule. Amended April 5, 2000.

[5] Comments received from the Idaho Department of Environmental Quality on September 27, 2000.

Special Notes:

- At the time of contact, Idaho was proposing changes to the SMP. Those proposed changes are located at <http://www2.state.id.us/deq/rules/58-0101-0201.htm>. The closing date for submittal of comments to the SMP was May 31, 2002.
- This survey has been reviewed by the Idaho Division of Environmental Quality. For more information, contact Diane Riley, Air Quality Analyst, IDEQ, 1410 North Hilton Street, Boise, ID, 83706-1255.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Idaho Division of Environmental Quality (DEQ) has the final authority on any burn restrictions as authorized in the open burning and emergency episode rules. [2][3][4]• The Monitoring Unit (consisting of a meteorologist and a program coordinator) is the decision-making body and makes a recommendation each day as to whether or not any restrictions on burning are necessary for the following day. [1][5]• Member burners have final responsibility for ignition. Members are expected to curtail burning if there is not adequate smoke dispersion or local weather factors may result in smoke problems. Burners may contact the Monitoring Unit to request an exception to a restriction if local conditions appear more favorable than what is forecasted by the Monitoring Unit. [5]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in	<ul style="list-style-type: none">• Idaho is part of the Montana/Idaho State Airshed Group (Airshed Group). The Airshed Group is composed of three Units: Montana, North Idaho and South Idaho. The intent of the Airshed Group is to minimize or

place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<p>prevent smoke impacts to communities while using fire to accomplish land management objectives or fuel hazard reduction. The members of the Airshed Group (Members) agree to develop and abide by the Montana/Idaho State Airshed Group Operating Guide (Operating Guide). The Operating Guide contains pertinent agreements, guidelines, deadlines, plans and procedures inherent to the successful operation of the Airshed Group.</p> <ul style="list-style-type: none"> • Several Memorandums of Agreement (MOA) are contained within the Operating Guide, including the North Idaho Smoke Management MOA effective September 1990, the South Idaho Smoke Management MOA for Forest and Range Prescribed Burning effective February 1999, and the North Idaho and Montana Airshed Group MOA effective August 1990. The objectives of the MOA are to minimize or prevent the accumulation of smoke, to develop a smoke management plan, and to review the plan annually. [1][5]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • MOA Signatories agree to develop and implement the Smoke Management Plan and are responsible for proper smoke management in their areas of operation. [1][5] • The program is voluntary. Non-members are encouraged to participate and new members are welcome to join anytime. [3][5]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The program applies to Federal, State, Tribal, and private forest and range prescribed burning. [3][5] • Agricultural burning is addressed in a separate program. [3] • Prescribed natural fire (wildland fire managed for resource benefits) is being addressed under a separate program by the USFS and BLM. Additional information can be found at: http://www.fs.fed.us/r1/fire/nrcc/Smoke_web_pages/intro.htm. [5] • The open burning rule discusses orchard fires (open outdoor fires to dispose of orchard clippings), and prescribed burning (open outdoor fires to obtain the objectives of prescribed fire management burning). [2][5]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • MOA Signatories are required to provide to the Monitoring Unit a list of all prescribed burns planned for the entire calendar year. [1][5] • Each MOA Signatory is required to submit a daily report of planned burning for the next day to the Local Airshed Coordinator who forwards it

	to the Monitoring Unit. [1][5]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • A prescribed burning restriction must not be in place. The need for a prescribed burning restriction is determined by evaluating existing air quality conditions, meteorological conditions, planned burns, and the expected amount of residual smoke from previous days' burning. Upon analysis of all available information, the Monitoring Unit recommends whether any burning restrictions are necessary for the following day. [1][5] • Restrictions can be statewide; by individual Airshed(s); by elevation within an Airshed(s); by individual burn number(s); by impact zone(s); by time periods; and any combination thereof. [3][5] • Member agencies and industries are responsible for ensuring that all burning crews are aware of any burning restrictions. [1][5]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The North Idaho Smoke Management MOA exists between the following agencies and companies: Idaho DEQ, USFS Regional Forester, BLM State Director, National Weather Service, Western Region, DAW Forest Products, Inland Empire Paper, Louisiana Pacific Corp., BIA Area Director, Idaho Dept. Of Lands, Plum Creek Timber Co., Inc., State of Idaho Dept. of Fish and Game, Potlatch Corp. Western Division, University of Idaho College of Forestry, Wildlife & Range Sciences, and the U.S. Army Corps of Engineers. [1] • The South Idaho Smoke Management MOA exists between the South Idaho members. The signatory members are: Idaho DEQ, Idaho Dept. of Lands, USFS Regional Forester, BLM State Director, and Boise-Cascade Corporation. The MOAs are included in the revised Operating Guide. [1][3][5] • The North Idaho and Montana Airshed Groups also have a MOA. [1] • All MOA Signatories agree to abide by the Operating Guide. [1] • Burner qualifications are not included in the Operating Guide. Smoke management training is available through state and federal agency training courses. [5]
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or	<ul style="list-style-type: none"> • The Open Burning Rule states "Two (2) years from the date of any economical and reasonable alternative to specific usage of open burning

disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	has been approved by the Director, that usage of open burning will no longer allowable under Section 606 through 616." [2][3] • The MOAs state that alternative methods are to be encouraged when such methods are practical. [1] • Emission reductions are not tracked. [5]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	• Air Pollution Emergency Rule: During periods of atmospheric stagnation and/or degraded air quality, the DEQ can suspend all open burning. [4][5] • The Monitoring Unit considers existing air quality conditions and other local data in each Airshed when determining the need for burning restrictions. Upon analysis of all available information concerning planned burning, forecast meteorological conditions and existing air quality, the Monitoring Unit recommends whether any restrictions to burning are necessary for the following day. [1][5] • The Operating Guide expects Members to curtail burning if they are not getting adequate smoke dispersion or if local weather factors are such that smoke problems could result. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	• All the actions taken as indicated in the answer to question 9 are documented. The information is used during annual program evaluation. [5]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	• MOA Signatories must provide, on their annual list of planned burns, the following information for each planned burn: 1) identification number (the Program Coordinator assigns each MOA Signatory a block of numbers), 2) legal description, 3) elevation, 4) planned number of acres, 5) type of burn, 6) Airshed number, and 7) impact zone code. [1][3]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	• Each morning a weather balloon is used to obtain an upper air sounding at selected cities in Montana and Idaho for the program. The Monitoring unit uses this data, along with other available surface and upper air data, and numerical models, to analyze dispersion conditions (wind speed, wind direction, mixing height, and stability). The Monitoring Unit also considers existing air quality conditions and other local data in each Airshed when determining the need for burning restrictions. Upon analysis of all available information concerning planned burning,

	<p>forecasted meteorological conditions, and existing air quality, the Monitoring Unit decides whether any restrictions to burning are recommended for the following day. The smoke dispersion forecast and burn restrictions are posted on the web by 3:30pm daily (Friday's forecast includes forecast and burn restrictions through Monday). [1][5]</p> <ul style="list-style-type: none"> • Members are expected to curtail burning if, in their opinion, they are not getting adequate smoke dispersion, if local weather factors are such that smoke problems could result. [1] • Visibility in Class I areas is taken into account when prescribed burning is being conducted in or nearby the Class I areas. [5]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • The public can find out about any burn restrictions in their area by calling the hotlines or looking at the following web site: http://www.smokemu.org. [5]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Prescribed burning restrictions are in effect as long as stagnant meteorological conditions and/or elevated air quality concentrations persist. [3][5]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • DEQ has real-time PM10 and PM2.5 air quality monitors located throughout the State (TEOMS and nephelometers). DEQ provides the data daily to the Monitoring Unit. [3] • The Monitoring Unit is responsible for the daily monitoring of meteorological data, air quality information, and planned forest and range prescribed burning. It is responsible for notifying Local Airshed Coordinators when acceptable limits of smoke accumulation are threatened to be exceeded. [1][5] • DEQ uses stagnant meteorological conditions and air quality concentrations as thresholds for issuing open burning bans under the authority of the Air Pollution Emergency Rule. [4][5]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went	<ul style="list-style-type: none"> • One of the roles of the Airshed Group is to prepare and disseminate information on prescribed burning. The Airshed Group has a web page at http://www.smokemu.org/About_us.html that explains the function of Group and gives general information on prescribed burning. [1] • The Airshed Coordinators are available to answer questions and inquiries concerning the smoke management program from the public.[1]

through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The public can find out about any burn restrictions in their area by calling the hotlines or looking at the following web site http://www.smokemu.org. [5] • Although the operating guide does not discuss how the public can file a complaint, the guide contains procedures for handling public complaints. [1] • A brochure on the program is available to the public. [3] • DEQ posts daily air quality data on a web site which includes any open burning restriction information. [5]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Complaints and real-time air quality monitoring are used to monitor compliance. [3]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Should any MOA Signatory fail to follow any procedures, requirements or restrictions issued under the SMP, it is considered grounds for revocation of their membership in the SMP. [1] • The Department of Environmental Quality may take appropriate action as authorized under existing State statutes or rules and regulations for violation of open burning. [1][5] • The Open Burning Rule does not exempt burners from liability for damages or injuries that result from open burning. [2][5]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Yes, members must compile and submit to the Program Coordinator a final listing by burn number of all prescribed burns accomplished during the calendar year. The Accomplishment Report must contain the dates on which the burns were accomplished, the total acres burned, and the tons/acre of fuel consumed (not all members) on each burn unit. [1][5]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Program evaluation is conducted in the spring during an annual meeting of all members. The Executive Committee meets as needed to evaluate the program and discuss any needed improvements. [1][3][5]
21. What are the review criteria?	<ul style="list-style-type: none"> • The annual report, which is completed for the annual membership meeting, includes a comparison of burn restrictions to air quality concentrations, and summary of smoke events and complaints. [3][5]

Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Special protection zones are defined as impact zones. Impact zones are any area of the State which is determined to be a smoke sensitive area. Appendix 2 of the Operating guide contains lists of impact zones. [1] • All nonattainment areas are included in impact zones. Other areas of concern are also identified as impact zones. [3] • Restrictions on burning may be made by impact zone. [1]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Each Member is responsible for proper smoke management in their area of operation. [1] • Each MOA Signatory adheres to the Airshed Group's restriction procedures which enables the Monitoring Unit to reduce burning, stop burning in specific areas, or cease burning entirely when meteorological or existing air quality conditions warrant. [1]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Each MOA Signatory adheres to the Airshed Group's restriction procedures which enables the Monitoring Unit to reduce burning, stop burning in specific areas, or cease burning entirely when meteorological or existing air quality conditions warrant. [1][5] • Should any MOA Signatory fail to follow any procedures, requirements or restrictions issued under the SMP, it is considered grounds for revocation of their membership in the SMP. [1][5] • The Department of Environmental Quality may take appropriate action as authorized under existing State statutes, or rules and regulations for violation of open burning. [1][5]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The Rules do not include a specific nuisance rule. There are, however, general odor and visible emission rules (58.01.01. 625 and 58.01.01.775). The odor rule states that no person shall allow, suffer, cause, or permit the emission of odorous gases, liquids or solids in such quantities as to cause air pollution. The visible emission rule specifies opacity standards for any point of emission. [2][3][5] • In addition, there may be general public nuisance regulations that would allow someone to seek relief through court actions not associated with the air quality rules. [5]
26. Is the smoke management program, or the	<ul style="list-style-type: none"> • Although the State Open Burning Rule is part of the Idaho SIP and

regulations authorizing the program, part of the State's implementation plan (SIP)?	indicates that the Idaho DEQ will develop and put into effect a smoke management plan for prescribed burning, the program has never been formally submitted as part of the SIP or approved by the EPA. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> Each member pays an annual membership fee (including Idaho DEQ) and there is an additional per acre fee for accomplished burns. The fee varies depending on whether it is a forest or range burn. There were additional "start-up" costs when the North and South programs were initiated. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> Starting in 2000, the program will be collecting year-round data (as described in #11 and 19) that could be used to develop annual emissions inventories for forest/range prescribed burning. Non-member burn activity data would not be included, but the data would represent the bulk of the Federal, State, and private burn activities. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> No. [3] Also see answers to questions 8, 9, and 10. [5]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> After the next revision of the SMP, the state plans to certify the SMP to the EPA. [5]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Appendix 7

State of Kansas Survey Responses

**Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”
EC/R Incorporated - January 26, 2001**

**From communication with Kansas Department of Health and Environment 12/16/02
Smoke Management Program Components Regarding Vegetative Management**

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Kansas Department of Health and Environment (KDHE) Bureau of Air and Radiation (BAR) Open Burning Regulations: K.A.R. 28-19-645 through 648
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	KDHE is working with 9 states in a north – south corridor as part of CENRAP on regional haze issues. This process will include evaluation of emissions from wildfires and potentially reduction strategies. The coordinate with CENRAP does not currently extend to burn/no burn decisions.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Agricultural burning for the management of crop residues, as well as for grass & woody growth for pasture, range, and watershed management.
5. How do land managers apply for authorization to burn?	For agricultural burning, no authorization is required by KDHE, but the local fire authority often requires notification. Any non-agricultural open burning (development land clearing, etc.) requires written application and approval by KDHE prior initiating the open burning operation.
6. What are the criteria for getting permission to burn?	Clean, and dry (to the extent feasibly) plant growth; no other waste materials are allowed to be burned. Written applications, when required, must provide description of location, and methods proposed to conduct the open burning. Burn must be supervised until extinguished.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	There are no operating agreements. There are no qualifications for burners. Smoke management training is not provided by the state.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives	Open burning is discouraged except where it is a necessary method for crop, pasture, rangeland or watershed management.

are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Open burning generally not authorized which create a traffic hazard (local law enforcement must be notified) or airport safety hazard (airport authority must be notified). Cannot initiate burn at night. Burn must be supervised until extinguished. No burning during inclement weather or foggy conditions or on cloudy days (more than 70% cloud cover and a ceiling under 200 ft.) No burning when surface wind speeds are expected to be less than 5 mph or over 16 mph. Must not burn within 1000 ft of an occupied dwelling, unless occupants are notified first.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Burning procedures as outlined, and approved or listed as conditions of, the open burn authorization, when required.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Not required by a SMP, but minimum requirements are set in the KS open burning regulations for agricultural burning. Adequate description of burning procedures must be contained in open burn request, to meet regulatory requirements, when applicable (non-
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	Smoke dispersion conditions must be evaluated on a local level for safety concerns. Regional haze is not accounted for in the process.
13. Must the affected public be notified of planned fires? Please describe.	Generally, only occupants of dwellings within 1000 feet of an area to be burned must be notified (for non-agricultural burning only , where pre-approval by KDHE is required)
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	No
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are	Impacts on a regional scale are monitored by existing ambient monitoring network. Monitoring is for PM fine and PM10. No triggers have been established

they? What actions are taken if they are exceeded?	
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	Open Burning Guidance Document produced by KDHE.
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	KDHE continues to take appropriate enforcement action for violations of the Open Burning regulations (K.A.R. 28-19-645 through 648)
18. What penalties are authorized for non-compliance?	Under KS administrative law, KDHE can levy civil penalties up to \$10,00 per day per violation of KS air quality regulations. These are maximum civil penalties, first time offense generally receive a lower civil penalty base on KDHE Enforcement and Compliance Penalty Policies.
19. Are post-burn reports required? What information is required?	No
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	No formal review process is included.
21. What are the review criteria?	
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Not on the statewide level
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No
24. What additional smoke management requirements apply if the performance standards have been exceeded?	NA
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also	Some local authorities in the heavily populated counties of the state do prohibit or more strictly regulate open burning activities, including prescribed

apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	fires. Criteria of what constitutes a nuisance is established by the local authority.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	Yes
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	Program budget
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	State inventory includes prescribed fire emissions for certain counties. It is based on actual acres burned, and fuel types.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	no
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	No
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	In Kansas, application of herbicides is regulated by the Kansas Board of Agriculture, and are not subject to KDHE regulations, except for reporting regulations associated with the community right-to-know- program.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No, regulated by the Kansas Board of Agriculture.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From Communication with City of Wichita, Kansas 4/11/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Decisions on burning/no burning of rangeland are made by local/county fire departments.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	Kansas Department of Health & Environment regulation K.A.R 28-19-648 exempts agricultural open burning for the purpose of crop, range, pasture, wildlife or watershed management from the prohibition on open burning except as regulated by the local governing body.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	There is no “smoke management program” except for the that smoke from an open burning operation shall not create a traffic safety hazard or an airport safety hazard
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	K.A.R. 28-19-648 deals specifically with “Agricultural open burning”. K.A.R. 28-19-645 deals with all open burning activity.
5. How do land managers apply for authorization to burn?	Applications for open burning permits are made at local fire stations.
6. What are the criteria for getting permission to burn?	Date, type, and anticipated duration of burn. Fires then must be supervised until extinguished.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	No agreements, qualifications or training.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are	There are no incentives or disincentives and I am currently unaware of any emission reduction tracking.

emission reductions tracked?	
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	No requirements
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	None
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	None
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	None
13. Must the affected public be notified of planned fires? Please describe.	Traffic control authorities must be notified in advance if a potential traffic hazard may occur as a result of the burn.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	None
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	None
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP?	None

What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	None
18. What penalties are authorized for non-compliance?	
19. Are post-burn reports required? What information is required?	None
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	None
21. What are the review criteria?	None
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Open burning is restricted in areas adjacent to any airport or public roadway in the fact that notification must be made to the proper authorities of the burn times.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	None
24. What additional smoke management requirements apply if the performance standards have been exceeded?	None
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes, City of Wichita Code 7.40.010 requires a majority of homeowners so affected sign a complaint to deem something a nuisance as does Sedgwick County Code 14-136
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	No
27. How does the State and/or local districts fund	Permit fees

operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	No
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	None
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	No
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No state of local air quality regulations
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No

Appendix 8

State of Montana Survey Responses

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Communication with Montana DEQ 4/18/2002

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

[1] Montana/Idaho State Airshed Group Operating Guide, updated August 2001.

[2] Comments received from the Department of Environmental Quality, Permitting and Compliance Division, Air & Waste Management Bureau dated August 19, 1999.

[3] Montana Department of Environmental Quality Rules, Title 17, Chapter 8-Air Quality, Sub-Chapters 5-Air Quality

Permit Application, Operation and Open burning Fees; 6-Open Burning; 11-Visibility Impact Assessment; and 14 - Conformity of General Federal Actions.

[4] Comments received from the Montana Department of Environmental Quality, Permitting and Compliance Division, Resource Protection Planning Bureau dated July 13, 2000.

[5] Comments received from Scott Kuehn, Plum Creek Timber Company, October 23, 2000.

Special Note:

Interactive GIS program is now in operation. Contact Scott Kuehn for details.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Monitoring Unit consists of a full time meteorologist/program coordinator and is the decision-making body during the spring (March through June) and fall (September through November)prescribed burning seasons and makes a recommendation to the Department of Environmental Quality (DEQ) each day as to whether or not any restrictions on burning are necessary for the following day. The DEQ has the regulatory authority to restrict burning and makes the final restrictions (75-2-201-233, MCA). [1][4]• In addition to the Monitoring Unit, airshed coordinators located within the 10 geographically defined Montana airsheds have responsibility for coordinating or restricting burns. [1][4]• From June 1 through August 30 the burn/no burn decision is left up to the burner. [2]• Open burning is generally closed from December 1 through February 29. [2]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so,	<ul style="list-style-type: none">• Montana is part of the Montana/Idaho State Airshed Group (Airshed Group). The Airshed Group is composed of three Units: Montana, North Idaho and South Idaho. The intent of the Airshed Group is to minimize or prevent smoke impacts to communities while using fire to accomplish

what does the coordination involve?	<p>land management objectives or fuel hazard reduction. The members of the Airshed Group (Members) agree to develop and abide by the Montana/Idaho State Airshed Group Operating Guide (Operating Guide). The Operating Guide contains pertinent agreements, guidelines, deadlines, plans and procedures inherent to the successful operation of the Airshed Group. [1]</p> <ul style="list-style-type: none"> • Several Memorandums of Agreement (MOA) are contained within the Operating Guide, including the North Idaho and Montana Airshed Group MOA and the Montana Smoke Management MOA (MSM-MOA). Two of the objectives of the MOAs is to minimize or prevent the accumulation of smoke in Montana and to develop a smoke management plan. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • MOA Signatories agree to abide by the Smoke Management Plan for Montana and are responsible for proper smoke management in their areas of operation. [1] • If an entity meets the definition of a major open burner, it needs to apply for a permit even if it is not part of Airshed Group. [2] Major Open Burners do not have to be members of the MSM, but need to follow all restrictions issued by the DEQ. [5]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The Operating Guide covers fires used to accomplish land management objectives, fuel hazard reductions, regeneration and wildlife habitat improvement. [1] • The Smoke Management Plan was not established to regulate agricultural burning, but the fall restrictions do apply to agricultural burners. [2]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • All major open burners (defined as any person, institution, business or industry conducting open burning that emits more than 500 tons of CO or 50 tons of any other pollutant per year) must obtain an annual burning permit from the DEQ and pay a fee based on emissions produced. Signatories to the MSM-MOA obtain an annual burning permit as part of being a member and following all rules and regulations of the Group. January 1 is the start date of the annual permit. [1] [2] • Prior to March 1 of each year, all MOA Signatories are required to provide to the Monitoring Unit, a list of all prescribed burns planned for the entire calendar year. [1] An update of the burn list is allowed until

	<p>August 31 for the fall burning season. [5]</p> <ul style="list-style-type: none"> • Each MOA Signatory is required to submit a daily report of planned burning for the next day to the Local Airshed Coordinator. [1] The Airshed Coordinators gather all of the proposed burns from their respective Airsheds and pass that information onto the Monitoring Unit. The Monitoring Unit evaluates existing air quality conditions, meteorological conditions, amount of proposed burns and the expected amount of residual smoke from previous days' burning. Restrictions by Airshed are then forwarded onto the DEQ for final approval. The DEQ can accept or modify these recommendations based on all of the available criteria. The DEQ issues final restrictions by 4:00 local time and these are posted on the web site and the hotline. Restrictions can be by individual burn, group of burns, by elevation, or Impact Zone, or any combination. This system allows burns that will not impact air quality to continue, but restricts those that will. [5] • For pre-season operations (after September 1 but before the startup of the Monitoring Unit), signatories to the MSM-MOA needing to burn must contact their Group Representative by 10 a.m. each day with their planned acreage and location. During pre-season, signatories to the MSM-MOA may assume they are authorized to burn if they have an Air Quality Permit and their daily planned burn lists were submitted to their Group representative, but must conform to the best available control technology (BACT) and have good or better ventilation . [1] • MSM-MOA Members planning to conduct "Essential Winter Burning" (burning performed December through February) are required to submit a planned winter burn list to the Monitoring Unit not later than November 1 of each year. [1] • The list for those planning to conduct "Essential Winter Burning" is reviewed by the monitoring unit coordinator and passed along to the DEQ, who, in turn, notifies the burner of approval or denial of the proposed burn. [2] • Each MOA signatory is responsible for making burning crews aware of any burning restrictions. [1]
6. What are the criteria for getting permission to	<ul style="list-style-type: none"> • A burning restriction must not be in place. The need for a burning

burn?	<p>restriction is determined by evaluating existing air quality conditions, meteorological conditions, and the expected amount of residual smoke from previous days' burning. Upon analysis of all available information, the Monitoring Unit recommends restrictions to the DEQ and they decide whether any restrictions to burning are necessary for the following day. [1][4]</p> <ul style="list-style-type: none"> • Essential winter burning will be conducted only when good or excellent smoke dispersion conditions are indicated by the National Weather Service (NWS). [1] • Each MOA signatory is responsible for making burning crews aware of any burning restrictions. [1]
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<ul style="list-style-type: none"> • The MSM-MOA exists between the following agencies and companies: Montana DEQ, USFS Regional Forester, BLM State Director, Glacier National Park Superintendent, NWS, Western Region, Yellowstone National Park Superintendent, Missoula City-County Air Pollution Control Board, Smurfit-Stone Container Corp., R-Y Timber Inc., BIA Area Director, DNRC, Plum Creek Timber Co., Inc., Big Sky Lumber Co., Department of Fish, Wildlife and Parks, U.S. Department of Fish & Wildlife Service, Pyramid Mountain Lumber, Louisiana Pacific, and Stolze Land & Lumber Co. [1] • Burner qualifications are not explicitly outlined in the Operation Guide. However, proposed language encourages land managers to train personnel in proper smoke management techniques. Smoke management training is available through state and federal agency training courses (i.e. RX-450). [4]
Minimizing Air Pollutant Emissions	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<ul style="list-style-type: none"> • Both MOAs state that alternative methods are to be encouraged when such methods are practical. No further detail regarding alternative methods is provided. [1] • The smoke management program operates on fees based upon emissions produced. Lower fees may be an incentive for choosing alternative treatments. However, alternatives generally cost more to implement than the potential fee savings. [4] • Currently, emissions tracking does not take place. [4] Except that data

	<p>collected as part of the fee calculation. [5]</p> <ul style="list-style-type: none"> • Include the Ops Guide when referencing MOAs.[1]
<p>9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?</p>	<ul style="list-style-type: none"> • Op Guide contains more detailed alternative measures to burning; • The rules (ARM 17.8, Sub-Chapter 6) require that BACT be applied to minimize emissions from fires. BACT means those techniques and methods of controlling emission of pollutants from an existing or proposed open burning source, which limit those emissions to the maximum degree, which the department determines, on a caseby-case basis, are achievable for that source, taking into account impacts on energy use, the environment, and economy, and any other costs, including cost to the source. Such techniques and methods may include the following: scheduling of burning during periods and seasons of good ventilation, applying dispersion forecasts, utilizing predictive modeling results performed by and available from the department (DEQ) to minimize smoke impacts, limiting the amount of burning to be performed during any one time, using ignition and burning techniques which minimize smoke production, selecting fuel preparation methods that will minimize dirt and moisture content, promoting fuel configurations which create an adequate air to fuel ratio, prioritizing burns as air quality impact and assigning control techniques accordingly, and promoting alternative treatments and uses of materials to be burned. [2][3] • Members are expected to curtail burning if they are not getting adequate smoke dispersion or if local weather factors are such that smoke problems could result. [1] • The Monitoring Unit considers existing air quality conditions and other local data in each Airshed when determining the need for burning restrictions. Upon analysis of all available information concerning planned burning, forecast meteorological conditions and existing air quality, the Monitoring Unit decides whether to recommend to DEQ restrictions to burning necessary for the following day. [1]
<p>10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?</p>	<ul style="list-style-type: none"> • Currently, the Operations Guide and state open burning rules do not require the documentation of emissions reduction actions. However, proposed language seeks to require minimum burn plan elements that may include documenting emissions reductions. [4]

Smoke Management Components of Burn Plans	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Currently, burn plans are not required by the SMP. However, signatories to the MSM-MOA must provide, on their annual list of planned burns, the following information for each planned burn: 1) identification number (the Program Coordinator assigns each signatory a block of numbers), 2) legal description, 3) elevation, 4) number of acres, 5) estimate of fuel consumption (tons/acre consumed) (needed on the end-of-season accomplishment report), 6) type of burn, 7) airshed number, and 8) impact zone code. [1] <p>Accomplishment dates of each burn are required for the end of season report. [5]</p> <ul style="list-style-type: none"> • The DEQ requires that for essential winter burning enough information be recorded so that a decision can be made by the DEQ that these burns are truly essential. Essential winter burning means that the unit can not be burned at any other time of the year, except during December through the end of February. At a minimum, information to be documented includes: assigned State Airshed Group number for each burn, legal location of burn, size of burn, type of burn (e.g., road clearing, piles, pit burning), fuel load, elevation of burn, and a brief explanation detailing why the burn is an essential winter burn. [1][5]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<p>Visibility affects included as part of education and outreach efforts - not mandatory by program. • Each morning a weather balloon is used to obtain an upper air sounding at selected cities in Montana and Idaho. The resulting temperature and wind information is plotted by the Monitoring Unit and then relayed to the NWS office at Missoula. The NWS will compile all meteorological data and issue an updated management forecast each day at approximately 9 AM, and a forecast for the following day at approximately 3:30 PM. Burners may also work directly with the NWS Fire Weather Forecasters to obtain spot weather forecasts for specific burns. [1]</p> <ul style="list-style-type: none"> • Members are expected to curtail burning if, in their opinion, they are not getting adequate smoke dispersion, or if local weather factors are such that smoke problems could result. [1] • Essential winter burning will be conducted only when good or excellent

	<p>smoke dispersion conditions are indicated by the NWS. [1]</p> <ul style="list-style-type: none"> • The Monitoring Unit considers existing air quality conditions and other local data in each Airshed when determining the need for burning restrictions. Upon analysis of all available information concerning planned burning, forecast meteorological conditions and existing air quality, the Monitoring Unit makes recommendations to the DEQ whether any restrictions to burning are necessary for the following day. [1] • The DEQ requires that burners demonstrate that emission from a major source will not cause or contribute to adverse impact on visibility within a Federal Class I area or the DEQ will not issue a permit. Estimates of visibility impact must be based on models contained in "Workbook for Plume Visual Impact Screening and Analysis" (EPA-450/4-88-015, 1988). [3]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • The available information does not discuss if the affected public must be notified when fires are authorized. However, the Operating Guide does discuss how to process a citizen complaint which should include an explanation of the smoke control program. [1] • The public can find out about restrictions in their area by calling the hotline or looking on the Internet. [2] • The public is notified by way of the legal notices in the major newspapers for each major open burners application for their Open Burning Permit. It is not required to notify the public of each burn. [5]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • The Operating Guide does not require contingency plans to reduce exposure to smoke if intrusions occur. [4] • Burning restrictions during the programs operation would continue through the intrusion event – until conditions improve. [2]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • During the months of March through June and September through November, the Monitoring Unit is required to monitor daily meteorological data, ambient air quality information, and planned forestry burning. The Monitoring Unit is responsible for notifying local Airshed Coordinators, DEQ and local authorities when acceptable limits of smoke accumulation are threatened to be exceeded. [1][4][5] • The DEQ tracks thermo-electric oscillating monitor (TEOM) data on a

	<p>daily basis. [2]</p> <ul style="list-style-type: none"> Emissions thresholds are not spelled out in the Operations Guide though as a guideline, restriction are imposed to maintain PM-10 levels around 50 and below or about 1/3 of the NAAQS standards. However, the program has Impact Zones around each nonattainment area where greater sensitivity to burn restrictions is observed. County air programs have threshold stages with required control activities. [4] This is not true, Missoula County for example has thresholds based on PM-10 regardless of source. [5]
Public Education and Awareness	
<p>16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?</p>	<ul style="list-style-type: none"> One of the roles of the Airshed Group is to prepare and disseminate information on open burning. The Airshed Group has a web page at http://www.smokemu.org/About_us.html that explains the function of Group and gives general information on prescribed burning. [1] The Airshed Coordinators are available to answer questions and inquiries concerning the smoke management program from the public. [1] The public can find out about any burn restrictions in their area by calling the hotlines or looking at the following web sites for the fall program and the prototype spring/summer program: http://www.smokemu.org and http://www.fs.fed.us/r1/fire/nrcc/smoke.html[3] Although the Operating Guide does not discuss how the public can file a complaint, the guide contains procedures for handling public complaints. [1] The Airshed Group prepared a brochure to educate people about the Group and smoke management. [2] The Airshed Group was formalized in 1979. Public participation is unknown. Formal and informal prescribed fire and fire ecology information is disseminated in association with individual prescribed burns through the NEPA process or informal meetings. [4]
Surveillance and Enforcement	
<p>17. What actions can be taken by the central authority to monitor compliance with the smoke</p>	<ul style="list-style-type: none"> The DEQ and the Group rely on complaints and TEOM readings to monitor compliance. [2]

management program?	
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Should any MOA signatory fail to follow any procedures, requirements or restrictions issued under the SMP, it may be considered grounds for revocation of their annual air quality permit, and/or membership in the SMP. The DEQ or local air pollution control agency may take appropriate action as authorized under existing State or local statutes, rules and regulations for violation of open burning rules and regulations. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Yes, prior to the last day of January (after the fall burning season), Members must compile and submit to the Program Coordinator a final listing by burn number of all prescribed burns accomplished during the prior calendar year. The accomplishment report must contain the dates on which the burns were accomplished, the total acres burned, and the tons/acre of fuel consumed on each burn unit. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • MOA signatories agree to evaluate each of their smoke management programs, and review their agreements and make improvements to each program at the end of the burning year (on December 1). [1] • Signatories to the MSM-MOA agree to evaluate the program, review the Agreement and improve the SMP where feasible. [1] • Op Guide also mandates periodic review [1]
21. What are the review criteria?	<ul style="list-style-type: none"> • The annual report, which is completed for the annual membership meeting, includes a comparison of burn restrictions to air quality concentrations. [1]
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Special protection zones are defined as impact zones. Impact zones are any area that the Airshed Group (or the DEQ or local air quality program) determines to be a smoke sensitive area. Appendix 2 of the Operating guide contains lists of impact zones. [1][5] • Impact zones may be established by the Airshed Group, the DEQ or local air quality authority; a general description of the impact zone is given in the SMP operating guide. [2] • Restrictions on burning may be made by impact zone, individual burn and or by elevation within the impact zone. [1]
23. Does the program establish any performance	<ul style="list-style-type: none"> • The Operations Guide does not establish any performance standards.

standards"? What are performance standards? How is performance evaluated?	<p>However, each Member is responsible for proper smoke management in their area of operation. [1][4]</p> <ul style="list-style-type: none"> • Each MOA signatory adheres to the Airshed Group's restriction procedures which enables the Monitoring Unit to reduce burning, stop burning in specific areas, or cease burning entirely when meteorological or existing air quality conditions warrant. [1]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • There are no additional smoke management requirements that apply if the performance standards have been exceeded. [4]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The rules do not include specific provisions regarding a potential nuisance created by open burning (except for firefighter training). There is a general section of the Rules (ARM 17.8.315) that pertains to odors. Those rules state that no person shall cause, suffer or allow any emissions of gases, vapors or odors beyond his property line in such a manner as to create a public nuisance. In addition, there may be general public nuisance regulations that would allow someone to seek relief through court actions not associated with the air quality rules. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Yes, see 59 FR 2988. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • The State portion of the smoke management program is fee funded (see Rule 17.8.500). Currently, the fees for "major open burners" are based on the actual or estimated actual amount of air pollutants emitted in the last calendar year. This is calculated based on tons of particulate matter, oxides of nitrogen, and volatile organic compounds using emission guidelines from AP-42 handbook. The fees are adjusted periodically to cover the Department's costs and the cost of the Meteorologist/Program Coordinator of operating the smoke management program. In kind services may be used to reduce the fees of some major open burners. [2][5]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports	<ul style="list-style-type: none"> • The State maintains an annual emission inventory of open burns. A description of each planned open burn is included with a permit application. The Department does not attempt to separate prescribed natural fires from other fires, such as slash burns. The emissions that are

(i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	used to calculate fees are generally based on post-burn reports. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	•See Question #9. [4]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• Program certified by Montana (only) as a Basic Smoke Management Program on 11/2/01. Montana is proposing to certify its SMP to the EPA following the incorporation of necessary language into the Operation Guide. Revisions to the Operating Guide may be completed by Fall 2000. [4]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	None
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	None

**Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”
EC/R Incorporated - January 26, 2001**

**From Communication with Missoula City-County Health Department, Montana 6/14/02
Smoke Management Program Components Regarding Vegetative Management**

Source of summary information:

- [1] The Missoula City-County Air Pollution Control Program regulations, Chapter 7, Outdoor Burning. Amended and Revised November 17, 2000.
[2] Agreement Between Agencies Involved in the Regulation of Outdoor Burning in Missoula County to Cooperate in Outdoor Burning Permit Issuance and Enforcement.
[3] Missoula County Fire Protection Association, Burning Permits. Available at <http://www.mcfpa.org/permits.phtml>.
[4] Comments received from the Missoula City-County Health Department, Environmental Health Division, dated September 22, 2000.

Other available information:

- Missoula City-County Air Pollution Control Program. Proposed Changes - Second Draft, Public Comment Document, June 5, 2000.

Special Note:

- This survey was reviewed by the Missoula City/County Health Department. For more information, contact Shannon Therriault, Missoula CCHD, 301 West Alder, Missoula, MT, 59802.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Agreement authorizes all signatory fire protection agencies to issue outdoor burning permits within their geographic area of jurisdiction. [2] MCCHD has the regulatory authority to make burn/no burn decisions. Burners must call a recorded hotline after 9 a.m. on the day they want to burn for any restrictions in effect.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none">• A formal agreement exists between the agencies that regulate outdoor burning in Missoula County. The purpose of the Agreement is to provide for a single unified outdoor burning permit throughout Missoula County that combines outdoor burning permits and air quality permits which will satisfy the requirements of Missoula County and City regulations. The Agreement outlines the responsibilities of the Missoula City-County Health Dept (MCCHD) and the Fire Protection Agencies. [2]• Signatories to the agreement are several Missoula County Commissioners, Missoula City Mayor, Air Pollution Control Board, Clearwater Unit-Dept. of Natural Resources, Clinton Rural Fire Dept., East Missoula Rural Fire Dept, Florence Rural Fire Dept., Frenchtown Rural Fire Dept., Greenough/Potomac Fire Dept., Missoula City Fire Dept., Missoula Ranger District-USFS, Missoula Rural Fire Dept.,

	<p>Missoula Unit-Dept. of Natural Resources, Ninemile Ranger District-USFS, Seeley Lake Rural Fire District, Swan Unit-Dept. of Natural Resources and Seeley Lake Ranger District-USFS. [2]</p> <ul style="list-style-type: none"> • A management team consisting of the Chair of the Missoula County Fire Protection Association (MCFPA), the Director of Environmental Health, and the County Sheriff is designated as the outdoor burning coordinating team for purposes of managing mutual cooperation and further defining policies. [2] • In addition to the outdoor burning coordinating team, Missoula's outdoor burning program is fine-tuned through bi-monthly Missoula County Fire Protection Association meetings, where outdoor burning is regularly discussed. The MCCHD also participates in those meetings. [4] • The MCCHD also coordinates with the Montana/Idaho Interstate Airshed Management Group (Airshed Group). The MCCHD uses forecasts produced by the Group's meteorologist and mirrors the restrictions placed on the major burners. The MCCHD and meteorologist often discuss the next day's restrictions before they are finalized. [4]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The available information does not specifically discuss a smoke management plan; however all outdoor burning requires a permit and compliance with best available control technology (BACT). [1][2] • The MCCHD's air regulations, in essence, make participation in the smoke management program mandatory for every burner in Missoula County. The regulations require a permit for every burn, and the permit, in turn, requires the burner to call the outdoor burning hotline on the day they wish to light the fire. The County's hotline reflects the Airshed Group's restrictions when its monitoring unit is operating and making forecasts. However, only the major burners and the MCCHD participate monetarily in the program. [4] • There are a lot of requirements burners in Missoula County must adhere to that are not part of the Airshed Group's program, especially for the smaller burners. These requirements include getting a permit, not burning prohibited materials, and adhering to the hours for burning set out by the permit. [4]
4. What types of burning (agricultural, silvicultural,	<ul style="list-style-type: none"> • All burns in the County are covered, except small recreational fires.

<p>other) are covered by the program?</p>	<p>The Regulations discuss essential agricultural open burning (open burning conducted on a farm or ranch to eliminate excess vegetative matter from irrigation ditches, eliminate excess vegetative from cultivated fields, improve range conditions or improve wildlife habitat); and prescribed wildland open burning (planned open burning, either deliberately or naturally ignited, that is conducted on forest land or relatively undeveloped rangeland to improve wildlife habitat, improve range conditions, promote forest regeneration, reduce fire hazards, control forest pests and diseases and promote any other accepted silvicultural practices). [1][4]</p> <ul style="list-style-type: none"> • The fire departments issue permits for general burning, essential agriculture burning and prescribed wildland burning. The MCCHD issues permits for major burners, firefighter training, bonfires, commercial film making, conditional permits (for trade waste and burns at landfills) and emergency outdoor burning. The MCCHD allows the major burners to use a State of Montana permit for outdoor burning when the Airshed Group's monitoring unit is in operation. [4]
<p>5. How do land managers apply for authorization to burn?</p>	<ul style="list-style-type: none"> • All burns must have a permit. The burner must call the outdoor burning hotline for permission to burn on any given day. The hotline is a recorded message that lists any restrictions in place due to air quality or fire danger concerns. In some fire districts, burners must also contact the fire agency the day they want to burn. [4] • For minor open burns (emits less than 500 tons per calendar year of carbon monoxide or less than 50 tons per year of any other regulated pollutant), the burner must conform with BACT, comply with all open burning rules and regulations (except Rule 1304-Major Open Burning Source Restrictions) and adhere to the time periods set by the MCCHD for burning. In addition, for prescribed wildland open burning during December, January or February, the burner must submit a written request demonstrating that the burn must be conducted prior to reopening of open burning in March and receive specific permission for the burn. [1] • For major open burning, (emits more than 500 tons per calendar year of carbon monoxide or more than 50 tons per year of any other regulated

	<p>pollutant), the burner must submit an application for an open burning permit, provide proof of publication of public notice, conform with BACT and adhere to all conditions in the permit. [1]</p> <ul style="list-style-type: none"> • Large burners, operating under the state permit, have to submit the areas they want to burn the day before. They then have to call the state's ventilation hotline, or check the Airshed Group's website, to see what restrictions have been placed on burning. They are allowed to burn any submitted areas that are not under a restriction. [4]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • For minor open burns the burner must have an approved permit and it must be an approved burning day. [1][3] • For major open burns the burner must have an approved permit, made public notification, and it must be an approved burning day. [1][3]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Operating agreements have not really been established between the MCCHD and land managers, except what is required by regulations. Open burning sources need not apply for and obtain an air quality open burning permit if the open burning source has obtained a permit from the Montana Department of Environmental Quality pursuant to ARM 17.8.610 and where no other provision of these regulations is violated. A permit issued by the Montana Department of Environmental Quality to burn, pursuant to ARM 17.8.610, will be valid in Missoula County only when the Montana State Airshed Group monitoring unit is in operation. Open burning sources issued a permit pursuant to ARM 17.8.610 shall be required to obtain an air quality open burning permit from the MCCHD when the Montana State Airshed Group monitoring unit is not in operation. [1][4] • The Agreement states that the MCCHD and other signatories will conduct training sessions for permit issuance. [2] • Each year the MCCHD offers training to the firefighters issuing the burn permits. While it covers some basic air quality and smoke concerns, it cannot really be termed smoke management training. The US Forest Service offers an excellent class on smoke management which many agencies have taken advantage of. [4]
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to	<ul style="list-style-type: none"> • One BACT method is to promote alternative treatments and uses of

<p>fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<p>materials to be burned. [1]</p> <ul style="list-style-type: none"> • In those areas where burning is allowed, there are no real disincentives to burning or incentives to do something else. [4] • Emission reductions are not tracked. [4]
<p>9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?</p>	<ul style="list-style-type: none"> • Conditional burning, which allows businesses to burn trade wastes and landfills to burn clean wood-wastes, is not permitted within the Air Stagnation Zone, roughly 4.5 miles from the Missoula City limits. [4] • Burn permits may be suspended due to poor air quality. [3] • Burning seasons have been adopted to minimize the impacts of smoke on the public. General burning (only natural vegetation and untreated dimensional lumber generated on the burners property can be burned) is conducted March 1 through August 31. Essential agricultural burning is conducted March 1 through October 31. Wildland burning is conducted March 1 through November 30. [3] • Permits for minor burners require that fires be out by 4 pm. Winds typically come up in the late afternoon and can cause a planned fire to get out of control. Also, smoke disperses better before sunset (Missoula is located in a valley and tends to have nightly temperature inversions that can trap smoke). [4] • All burners are required to comply with BACT determined on a case-by-case basis by the MCCHD. The techniques and methods may include the following: scheduling of burning during periods and seasons of good ventilation, applying dispersion forecasts, utilizing predictive modeling performed by the MCCHD or other public agency to minimize smoke impacts, limiting the amount of burning to be performed during any one time, using burning techniques which minimize smoke production, selecting fuel preparation methods that will minimize dirt and moisture content, promoting fuel configurations which create an adequate air to fuel ratio, prioritizing burns as to air quality impact and assigning control techniques accordingly, and promoting alternative treatments and uses of materials to be burned. For essential agricultural open burning during September or October, or prescribed wildland open burning during September, October, or November, BACT includes burning only during the time periods specified by the MCCHD. For prescribed wildland open

	burning during December, January or February, BACT includes burning only during the time periods specified by the MCCHD, which may be determined by calling (406) 728-2667. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The BACT methods that the burner must comply with are indicated in the burn permit, but do not have to be documented by the burner. [1][4]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Written burn plans are required of the major burners. The plans must include a legal description or map, the elevation and average fuel loading of each site to be burned, as well as the method of burned to be used at each site. [4]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Smoke dispersion conditions are evaluated by the MCCHD and, when it is operating, the meteorologist of the Airshed Group's monitoring unit. The MCCHD and meteorologist then place restrictions on burning, usually based on elevation in the fall. For example, in Impact Zone M, the area surrounding the city of Missoula, no new fires may be lit below 4500'. The MCCHD relies heavily on current particulate levels and the forecasts of the meteorologist or the National Weather Service. [4] • Missoula County's rules require the burner to evaluate the dispersion conditions on site. Large burners employ spot weather forecasts to ensure they have good dispersion at their location, especially when they are burning close to town. [4] • Regional haze and visibility impairments can be taken into account by the meteorologist of the Airshed Group's monitoring unit. However, because of prevailing west winds, Missoula is often subject to haze and smoke from more western burns. Burning is often curtailed in Missoula County because of smoke from fires outside the County and State. [4]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Burns that require public notice before a permit can be issued include major burners, conditional burns, firefighter training, and commercial film production burns. For these burns, the burner must provide proof of publication of public notice to the MCCHD before an application will be considered complete. The burner must notify the public of the application for permit by legal publication, at least once, in a newspaper of general circulation in each airshed (as defined by the MCCHD) affected by the

	<p>application. The notice must be published no sooner than 10 days prior to submittal of an application and no later than 10 days after submittal of an application. The form of the notice will be provided by the MCCHD and must include a statement that public comments may be submitted to the MCCHD concerning the application within 20 days after publication of notice or filing of the application, whichever is later. A single public notice may be published for multiple applicants. [1][4]</p>
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • The MCCHD has the ability to require a fire be extinguished if it is contributing to or will cause a violation of the Montana Ambient Air Quality Standards. Land managers who burn close to the City of Missoula are aware of this potential and scope out ways a fire can be mopped up. However, written contingency plans are not required. [4]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Air quality impacts of individual fires are not monitored, but the MCCHD continually monitors particulate in Missoula using TEOM and samples PM2.5 at several locations in the County. In addition, the MCCHD monitors carbon monoxide from October through March. The County's Emergency Episode Avoidance Plan establishes trigger levels and sets out requirements based on these levels. The department will shut down all outdoor burning if ambient particulate levels reach 80 µg/m3, based on an 8-hour average. [4]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The MCFPA makes information on burning permits available on the Internet. [3] • The MCCHD has worked with MCFPA to create informational pamphlets, such as, "It's Fall, Why Can't I Burn?" MCFPA has also created and aired radio spots that explain the limitations of the fall burning season. <p>The MCCHD is in the process of creating a web page that will include permit information and a link to the MCFPA website. Fire departments and the MCCHD routinely get complaints about burning. Missoula County recently made changes to its outdoor burning regulations. These changes went through a great deal of public scrutiny and comment. [4]</p>
Surveillance and Enforcement	
17. What actions can be taken by the central	<ul style="list-style-type: none"> • Signatories to the Agreement notify the appropriate agency of non-

authority to monitor compliance with the smoke management program?	compliance with the outdoor burning regulations including the burning of prohibited materials and conducting outdoor burning without a permit. [2] • Most of the monitoring of compliance is done when complaints are received. The MCCHD, the fire departments, and in some instances, the County Sheriff respond to and investigate the complaints. [4]
18. What penalties are authorized for non-compliance?	• Signatories to the Agreement cooperate in the investigation of complaints concerning illegal outdoor burning including the issuance of verbal and written warnings and preparation of incident reports. [2] • If a fire gets out of control, the burner is liable for fire suppression costs as well as any damage the fire causes to the surrounding community. [3] • In addition to suppression costs, penalties for not having a permit or violating a condition of the permit can be as high as \$10,000 per offense (as per the Missoula City-County Air Pollution Control Program). Fines are typically quite a bit smaller, ranging from around \$500 to \$2000. [4]
19. Are post-burn reports required? What information is required?	• The MCCHD does not require post-burn reports. However, major burners are required to report the amount of fuel burned to the Airshed Group. [4]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	• The program is in a continual state of review. MCFPA meets every other month, and the burn permit program is always a topic of discussion. In addition, the Air Quality Advisory Council has been discussing outdoor burning for the last year and a half, and is currently focusing on yard waste burning. Missoula is finding that more and more of its air pollution episodes are due to smoke from fires, both prescribed and wildfires, so this program will continue to come under review. [4]
21. What are the review criteria?	• There are no specific review criteria, other than the public notice and hearing requirements for any rule changes. [4]
Optional Air Quality Protection	
22. Does the program establish any special protection zones? How are these zones described? What additional smoke management requirements apply in special protection zones?	• There are special protection zones. Impact Zone M includes the area surrounding the Missoula valley and is generally defined by the peaks surrounding the valley. The Airshed Group's monitoring unit pays more attention to burns planned inside the Impact Zone and requires more details from burners in this area. This area was recently enlarged in

	Missoula's air regulations to include more land to the east. The Missoula air regulations only allow prescribed wildland fire in Impact Zone M on days of good dispersion in the fall and do not allow any wintertime burning. Additionally, there are restrictions on what can be burned in the Air Stagnation Zone, which is smaller than Impact Zone M and extends about 4.5 miles outside the city limits of Missoula. [4]
23. Does the program establish any performance standards? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The closest thing Missoula has to performance standards is that the burner has to comply with BACT which is established in the permit. Performance is evaluated on a complaint basis. [4]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • There are no additional requirements, except that if the burner is not complying with BACT, the permit can be revoked and/or a fine can be imposed by a judge. [4]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Missoula County has a nuisance regulation in its odor rule that can be applied to smoke. The regulation reads, "No person shall cause, suffer or allow any emissions of gases, vapors, or odors beyond his property line in such manner as to create a public nuisance." The air regulations have been recently amended (but still must be approved at the state level) to include a general public nuisance regulation that will fit the situation better. Public nuisance is defined by the regulations as, "any condition that endangers safety or health, is offensive to the senses, or obstructs the free use of property so as to interfere with the comfortable enjoyment of life or property by an entire community or neighborhood or by any considerable number of persons." There is no set number of people that must complain before something can be determined to be a public nuisance, but the MCCHD must investigate it and determine that it meets the criteria. This rule can apply to prescribed fires as well as prescribed natural fires, but would not pertain to wildfires. In 1999, the MCCHD determined that prescribed fires had created a public nuisance in the Blackfoot and Missoula valleys but did not pursue the violation in court. [4]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Yes. The Missoula City-County Air Pollution Control Program is part of the SIP. [4]
27. How does the State and/or local districts fund	<ul style="list-style-type: none"> • There are not fees for small burners and the major burners pay fees

operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	directly to the State of Montana to fund the Montana/Idaho Interstate Airshed Management Group. The costs of the permitting program for small burners is absorbed by the MCCHD and the fire departments. [4]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> The state program maintains annual emissions inventories, as that is what the permit fee for major burners is based on. Locally, such inventories are not maintained. [4]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> No, not at the local level. [4]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> The local permitting program is approved by the EPA and incorporated into the SIP. Information is not available as to whether the state is planning to certify the Interstate Airshed Management Group with EPA. [4]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Appendix 9

State of Nebraska Survey Responses

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From Communication with Nebraska DEQ 5/10/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Agriculture burning is exempt from open burning ban under NE Air Pollution Control Rules & Regulations administered by the Nebraska Department of Environmental Quality / Air Division.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	No coordination. A permit may be required from the local fire chief. Land owners responsibility to obtain necessary permits.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	There is no SMP for agriculture burning.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	NA
5. How do land managers apply for authorization to burn?	Local governing authorities.
6. What are the criteria for getting permission to burn?	NA
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	NA
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are	None

emission reductions tracked?	
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	NA
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	NA
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	NA
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	NA
13. Must the affected public be notified of planned fires? Please describe.	Not on the state level. Local level may require advanced notice.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	NA
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	NA
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP?	A program has not been established.

What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	NA
18. What penalties are authorized for non-compliance?	NA
19. Are post-burn reports required? What information is required?	NA
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	NA
21. What are the review criteria?	NA
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	No.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	NA
24. What additional smoke management requirements apply if the performance standards have been exceeded?	NA
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	State – no; not sure on the local. NA
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	NA
27. How does the State and/or local districts fund	No fees.

operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	NA
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	NA
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	NA
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Communication with Lincoln-Lancaster County Health Department, Nebraska 4/30/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Lincoln-Lancaster Co. Health Dept. and Local Fire District
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	Local Fire Districts
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Any and all entities are subject to our regulations and ordinances
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	All
5. How do land managers apply for authorization to burn?	Call Fire District and Health Department
6. What are the criteria for getting permission to burn?	Distance to occupied structure, wind direction, and wind speed.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	No agreements No training
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are	Burying, firewood, landfill, mulch, etc.

emission reductions tracked?	
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Dry, native vegetation only Wind speed and direction restrictions
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Weather service
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	No
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	N/a
13. Must the affected public be notified of planned fires? Please describe.	No
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	No
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	No
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP?	No

What is done on an ongoing basis?	
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	N/a
18. What penalties are authorized for non-compliance?	Fines \$100 and up
19. Are post-burn reports required? What information is required?	No
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	No
21. What are the review criteria?	N/a
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Burning not allowed in city limits
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No
24. What additional smoke management requirements apply if the performance standards have been exceeded?	N/a
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	No
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	Yes
27. How does the State and/or local districts fund	Permits fees: \$50/day of burning

operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	Yes. Estimated fuel consumed.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	N/a
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	N/a
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	FIFRA
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	N/a

Appendix 10

State of Nevada Survey Responses

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From communication with Nevada DEP 5/22/02.

Smoke Management Program Components Regarding Vegetative Management

[1] Nevada Smoke Management Program, July 6, 1999, at <http://www.state.nv.us/ndep/bao/smoke1.htm>

[2] Comments received from the Nevada Department of Environmental Protection dated August 4, 2000.

- This survey has been reviewed by the Nevada Department of Environmental Protection. For more information, contact Curtis Payne, NDEP, 333 West Nye Lane, Carson City, NV, 89706.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Nevada Division of Environmental Protection (DEP) has central authority over the smoke management program. The DEP's jurisdiction does not include Washoe or Clark Counties or any Bureau of Indian Affairs (BIA) trust lands. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none">• Program support agreements are formalized under a MOU and an Interagency Agreement (IA) between the DEP and land management agencies. [1] These agreements have been finalized June 2001.• The county commissioners of the various counties are granted the power to regulate excessive emissions of dense smoke within the boundaries of the county. Incorporated cities have the authority to regulate excessive emissions of dense smoke within the city limits. The DEP is required, by statute, to maintain cooperative programs with local governments and facilitate cooperation across jurisdictional lines. Any source of air contamination is required, by statute, to obtain a permit from DEP. [2]• The SMP requires that the local fire protection agency obtain a burn permit to allow public open burning at single family residences within cities and towns listed in the SMP. The fire protection agency must obtain a permit from the county pollution control agency (Clark and Washoe Counties) or the DEP to set fires for training purposes. [2]• The DEP coordinates burns near the state border, BIA trust lands managed under a tribal air quality agency, or the borders of Washoe or Clark Counties with the respective air regulators. A list of the agencies

	<p>and individuals notified must be included in the burn plans. [2]</p> <ul style="list-style-type: none"> • A draft MOU between the California Air Resource Board and DEP was prepared in July 1998. The draft MOU coordinates prescribed fire issues near the state borders and monitoring at Lake Tahoe. The MOU was never finalized. Current efforts are directed towards Title 17 implementation of prescribed burn permits. Nevada is requesting that the burn permit application incorporate land management agency notification of adjacent states and regions prior to initiating prescribed burns. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Participation in the smoke management program by land managers is required by regulation. Agriculture is exempt from State open burn regulations except where prohibited by local ordinances or regulations. Local governments must allow for customarily accepted agricultural practices and must consult the Division of Agriculture or local conservation district to determine what these practices are before adopting ordinances which may affect agricultural operations. The State is working with the agricultural community toward developing a voluntary program (Handbook for Agricultural Burning in Nevada). [2] • Each land manager involved in the use of prescribed fire is responsible for proper smoke management for the prescribed fires it conducts. The burner must follow best management practices. [1][2]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • Open burning under the SMP may be conducted for the following types of projects: a) Hazard fuel reduction; b) Slash disposal from timber sales and roads constructed within contract areas; c) Wildlife and livestock habitat improvement; d) Forest and rangeland improvement; e) Insect, weed, and disease control; f) Site preparation for revegetation; g) Watershed management and water yield improvement; h) Maintenance and improvement of natural ecosystems; i) Maintenance of threatened and endangered species; j) Other vegetative management and improvement projects; and k) Agricultural practices. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Land managers must obtain a permit from the DEP for all management ignited prescribed fires which emit greater than 1.0 tons of PM10. [1] • For each project emitting between 1.0 and 10 tons of PM10, a one-page permit application form must be completed and submitted to the DEP at least two weeks prior to the planned date of ignition. [1]

	<ul style="list-style-type: none"> • For fires emitting more than 10 tons of PM10, a complete application package must be submitted at least 30 days prior to the planned ignition date. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • In reviewing the application for an open burning permit, the DEP will consider the following factors: a) Consideration and evaluation of alternatives to burning; b) Proximity to populated areas and points of nearest public access; c) Climatic conditions on the day or days of burning; d) Potential contribution to area air pollution. • The issuance of a permit does not constitute final approval. Final approval must be obtained 24 hours prior to ignition. Final approval will be based on ambient air quality conditions. [1] • The land manger must contact the DEP no later than 10 a.m. of the business day preceding the burn to receive approval to ignite a prescribed burn. Notifications must be made to the Smoke Management Coordinator at (775) 687-4670, ext. 3083. The DEP will issue a final decision on the same business day. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Program support agreements are formalized under a MOU and an Interagency Agreement between the DEP and land management agencies. [1] These agreements have not been finalized. [2] • All burns conducted by state and federal land managers must be conducted by personnel trained in prescribed fire and smoke management techniques to the minimum level required by the land management agency in charge of the burn. [1] • The local fire management officer of the state or federal land management agency having jurisdiction over the prescribed burn must have had smoke management training obtained through successful completion of a National Wildfire Coordinating Group (or equivalent) course dedicated to smoke management. [1]
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • In reviewing the application for an open burning permit the DEP will consider several factors including the applicant's consideration and evaluation of alternatives to burning. [1] • A permit will not be issued if this information has not been submitted. [1]

	<ul style="list-style-type: none"> • The Smoke Management Plan requires a description of the emission reduction techniques in the annual fire activity report. It does not require calculations of those reductions. [2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Each land manager conducting prescribed burning must implement as many smoke management and emission reduction measures as are feasible for the specific burn. The following smoke management and emission reduction techniques are considered best management practices: 1) Reducing the biomass ; 2) Burning in seasons characterized by meteorological conditions that allow for good smoke dispersion; 3) Using mass ignition techniques; 4) Igniting burns under good-to-excellent ventilation conditions and suspending operations under poor smoke dispersion conditions; 5) Considering smoke impacts on activities conducted by local communities and land users; 6) Burning only those fuels essential to meet resource management objectives; 7) Minimizing duff consumption and smoldering through fuel moisture considerations; 8) Minimizing dirt content when slash piles are constructed; 9) Burning piles when other burns are not feasible, such as in snow or rain; 10) Using all opportunities that meet the burn prescription and all burn locations to spread smoke impacts over a broader time period and geographic area; 11) Burning during optimum mid-day dispersion hours, with all ignitions in a burn unit completed by 3 p.m. to prevent trapping smoke in inversions or diurnal wind flow patterns; 12) Using chunking of piles and other consolidations of burning material to enhance fuel consumption and to minimize smoke production; 13) Implementing maintenance burning in a periodic rotation mimicking natural fire cycles to reduce excessive fuel accumulations and subsequent excessive smoke production through smoldering or wildfire; 14) Managing smoke impacts. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Each land manager conducting prescribed burning must include a description of the emission reduction techniques used for a specific burn in the annual fire activity report submitted. [1] • The information is used to review program effectiveness and is made available to all interested Working Group members. [2]

Smoke Management Components of Burn Plans	
<p>11. Are written burn plans required by the SMP? What information must be included?</p>	<ul style="list-style-type: none"> • For prescribed fires emitting more than 10 tons of PM10 and located more than 15 miles from a smoke sensitive area, a CO or PM non-attainment area, or a Class I area, the completed application must be accompanied by a burn plan. [1] • The burn plan must include the following: a) The specific location and description of the area to be burned; b) The responsible personnel; c) An emergency telephone number that is answered 24 hours a day; d) The property owner; e) The agency/contractor conducting the burn; f) The burn prescription; g) The number of acres to be burned, the type of fuel, fuel loading estimates and the ignition technique to be used; h) a list of agencies and private parties involved; i) A map depicting the potential impact of smoke; j) Discussion of public notification to be conducted; and k) Evaluation of alternative treatments. [1] • For prescribed fires emitting more than 25 tons of PM10, or more than 10 tons if the burn is within 15 miles of a Class I area, a CO or PM non-attainment area, or other smoke sensitive area, the following information must also be submitted with the burn plan: a) A smoke management plan including actions taken to minimize emissions before, during and after the fire; b) Emission estimates including models, methods, and emission factors used; c) Identification of smoke sensitive areas; d) Safety and contingency plans; e) A list of potential affected air regulators to be notified; and f) Air monitoring to be conducted. [1] • For prescribed fires emitting more than 10 tons of PM10 and are within 15 miles of the state border, BIA trust lands managed under the jurisdiction of a tribal air quality agency, or the borders of Washoe or Clark counties, the air regulators of those areas must be notified prior to the burn and a list of the agencies and individuals to be notified must be included in the burn plans. [1]
<p>12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"</p>	<ul style="list-style-type: none"> • Several smoke management techniques involving smoke dispersion that are considered by the SMP to be best management techniques are listed under question 9 of this survey. [1] • The best management technique of managing smoke impacts includes: a) Limiting smoke impacts to roads, highways, and airports; b) Using

	<p>appropriate signing if smoke will impact any point of public access; c) Notifying the public at potentially impacted smoke sensitive areas; d) Determining nighttime impacts and taking appropriate precautions. [1]</p> <ul style="list-style-type: none"> • For projects that will emit more than 25 tons of PM10 or greater than 10 tons of PM10 if located within 15 miles of a Class I area, an area that is in non-attainment for CO or PM, or a smoke sensitive area, a permit applicant must demonstrate that the project will not violate applicable ambient air quality standards. This demonstration will be conducted using currently accepted models. The model output will explicitly show conditions under which the burn will be conducted so as to minimize impacts of emissions. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • For any project generating more than 10 tons of PM10, procedures for notifying the public of burn dates in smoke sensitive areas must be included with the applicant's burn plan. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • In plans for prescribed fires, each land management organization will have contingency plans enabling it to reduce smoke emissions. [1] • Contingency plans will be implemented when meteorological conditions warrant, the DEP, Bureau of Air Quality determines that acceptable limits of smoke accumulation are or will be exceeded, and/or the responsible land management organization anticipates that the prescription for a particular fire will be exceeded. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • For small fires and fires that are remote enough to result in no noticeable impact on the public, visual monitoring of the direction of the plume and monitoring nuisance complaints by the public may be sufficient. [1] • Other monitoring techniques include posting personnel on vulnerable roadways to look for visibility impairment and initiate safety measures for motorists; posting personnel at other smoke sensitive areas to look for smoke intrusions; using aircraft to track the progress of smoke plumes; and continued tracking of meteorological conditions during the fire. [1] • For large fires expected to last more than one day, locating real-time particulate matter monitors at smoke sensitive areas may be warranted. [1]

	<ul style="list-style-type: none"> • If pollutant levels are anticipated to create a significant threat to human health, the DEP may require the responsible land management agency to monitor in or near population centers impacted by smoke generated from a particular prescribed fire or wildfire. Impact from wildfire will be monitored by the DEP. [1] • If the responsible land management agency or the DEP determines that the prescription for a prescribed fire has been exceeded and/or conditions of the permit are not being met, the responsible parties must initiate suppression action unless, after consultation with the DEP, the prescription is modified, or other appropriate actions are taken. [1]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The State has not developed a public education and awareness program. The State's SMP was developed through the review of the SMPs of other western states and in meetings with land management agencies, local fire protection districts, state agencies, agricultural organizations, the University of Nevada, conservation districts, the Desert Research Institute, and concerned individuals. SMP finalization awaits MOU and IA approval by the land management agencies. [2] • The DEP assessed the magnitude of agricultural burning by distributing questionnaires through the Cattlemen's Association. Currently the agricultural community is exempt from State regulations on open burning; however, the State is attempting to establish a voluntary program. The final draft of the handbook for Agricultural Burning in Nevada is currently under review by the working groups that helped develop it. [2] • The SMP requires periodic review of the MOU and IA to ensure implementation needs are met. [2]
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • DEP staff are allowed to enter and inspect prescribed burn sites unannounced, before, during, and after burns, to verify the accuracy of the permit information and compliance with the burn plan and smoke management plan, if appropriate. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Failure to comply with the procedures and conditions specified in the permit may result in enforcement action. Penalties of up to \$10,000 per

	day per violation may be assessed. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Each permitted user of prescribed fire who emits more than 10 tons of PM10 per year must provide the DEP with an annual reporting of fire activity by March 31 for the previous year's activities. Information to be reported includes: the permit number, the name of the individual conducting the burn or the agency name and contact, date and time ignition began, date and time the fire is declared out, actual acreage burned, fuel type, fuel loading, emissions estimates, emission factors used and their source, name of air quality regulators notified and the notification date, and the emission reduction techniques used. [1] • The land manager in whose jurisdiction a naturally ignited prescribed fire or wildfire occurs must report all such fires when it is expected to attain a size greater than 300 acres for rangeland and 100 acres for forest land on a daily basis to the DEP. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Nevada's Smoke Management Plan requires annual reporting for all organizations that emit more than 10 tons of PM10. The Plan calls for land managers and air regulators to work together to assess program implementation and provide support. These are formalized under the MOU and an IA between the DEP and land management agencies. The agreement is evaluated periodically to ensure implementation needs are met. The MOU and IA, providing support for the Smoke Management Plan, have been approved. [2]
21. What are the review criteria?	<ul style="list-style-type: none"> • No review criteria for the smoke management plan has been established. [2]
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The SMP does not establish specific "special protection zones". It does provide additional protection to Class I areas, areas in non-attainment and areas defined as smoke sensitive areas. The smoke sensitive areas are defined as: those designated as scenic and/or important views, especially during times of significant visitor use; urban and rural population centers; homes, schools, hospitals, nursing homes, airports, recreational areas; and other locations that may be sensitive to smoke impacts for health, safety, and/or aesthetic reasons. [2]

	<ul style="list-style-type: none"> • A permit applicant must demonstrate that the project will not violate applicable ambient air quality standards. This demonstration will be conducted using currently accepted models. The model output will explicitly show conditions under which the burn will be conducted so as to minimize impacts of emissions. [2]
23. Does the program establish any performance standards? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The burn plan itself is a performance standard. [2] • Factors the Division will consider include: modeled data that indicates expected violations of any Ambient Air Quality Standard; air quality monitoring data that indicates a violation of Ambient Air Quality Standards; proximity of the fire to smoke sensitive areas; citizen complaints; National Weather Service Fire Weather Forecast predictions; fuel conditions; existing and predicted size of the fire. [2] • Performance is evaluated on a case-by-case basis. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • If the prescription is exceeded (including impacts on visibility), and/or conditions of the permit are not being met, the responsible parties must take immediate action to reduce further impacts and consult the Division. These actions may include suppression, prescription modification (after consultation with the Division) or other appropriate action. [2] • Failure to comply with the procedures and conditions specified in the permit may result in the permit being revoked or other enforcement actions. [2] • Penalties of up to \$10,000 per day per violation may be assessed. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Nuisance is defined under odors as anything which is injurious to health or offensive to the senses. Per regulation, a controlled fire does not constitute a nuisance if a written plan is approved by DEP, the plan complies with air pollution regulations and is under the direct supervision of qualified personnel. [2] • A controlled fire is defined as the controlled application of fire to natural vegetation under specified conditions and after precautionary actions have been taken to ensure that the fire is confined to a predetermined area. [2] • DEP must investigate odor complaints when 30 percent or more of a sample of the people exposed believe it to be objectionable. [2]
26. Is the smoke management program, or the	<ul style="list-style-type: none"> • Burns are excluded in the SIP. [2]

regulations authorizing the program, part of the State's implementation plan (SIP)?	
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Currently funding for the program is provided by the Clean Air Act. If the MOU and IA with the various land management agencies is finalized, minimal funding will be provided by the land management agencies involved. [2] • There are no fees. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Each land manager conducting prescribed burning must include the emissions estimates, emission factors used and their source, and the emission reduction techniques used for a specific burn in the annual fire activity report submitted. [1] • The emissions inventory is made available to all interested Working Group members. [1]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • The Smoke Management Plan requires a description of the emission reduction techniques in the annual fire activity report. It does not require calculations of those reductions. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • The EPA has reviewed the SMP for Nevada and found it acceptable. The State does not plan to certify the SMP. Washoe and Clark Counties have expressed an interest in using the State's SMP and may seek certification. [2]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative	No.

management, or other chemical treatments)?	
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Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

**From Communication with Nevada - Washoe County AQMD, Nevada 5/14/02
Smoke Management Program Components Regarding Vegetative Management**

**WCAQMD does not have a formal or official SMP, prescribed burning falls under the County regulation for
Open/Prescribed Burning Section 040.035 www.co.washoe.nv.us/health**

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Washoe County District Health Department Air Quality Management Division (WCAQMD).
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<p>The WCAQMD coordinates with the Nevada Department of Environmental Protection (NDEP), Northern California Air Agencies, and Nevada and California fire control authorities or land managers.</p> <p>The Washoe County Air Quality Regulation Section 040.035(D) only allows prescribed burning in forest areas and must be conducted only by local fire control authorities or land managers.</p> <p>There are currently no formal MOU’s for Washoe County but the District may work with the State or draft our own in the near future.</p>
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	WCAQMD regulation requires land managers to get a permit to conduct prescribed burning.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Any open burning not considered prescribed burning requires a permit from the local fire control agency and must follow the restrictions set forth in Section 040.035.
5. How do land managers apply for authorization to burn?	They must submit a Notification of Prescribed Burning form to the WCAQMD. The form requires submittal of the Burn Prescription, specifically the Smoke Management Plan, and must list location of burn, number of acres, date, duration, reason, and volume of material to be burned.

6. What are the criteria for getting permission to burn?	<p>Were other alternatives to burning considered and why were they not used.</p> <p>If burning is allowed the burner must follow best management practices and fires must burn without creating excessive smoke in order to minimize their effects on human health and property.</p> <p>If climatic or air quality conditions on the day or days of scheduled burning are not conducive to burning, i.e. an AQI over 80, the burn will not be allowed.</p> <p>If complaints are received or monitored levels of air pollutants reach unhealthful levels, the fires must be allowed to burn down or be extinguished to alleviate the problem.</p>
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	There are no formal agreements. It is something to consider in the future when we have a formal SMP. WCAQMD does not conduct training, but there is training available in Nevada and California and Washoe County staff plans to attend.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	None at this time. When Washoe County adopts a formal SMP we may look at these items.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	A Land Manager must implement as many smoke management and emission reduction measures that are feasible for a specific burn.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	Actions to minimize emissions before and during the fire must be documented in the land managers Smoke Management Plan. This information is used to determine if a burn will be permitted.
Smoke Management Components of Burn Plans	
11. Are written burn plans required by the SMP? What information must be included?	Not because of a Washoe County SMP, but for a Permit as per District regulation. See 5 above.

12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<p>Land Managers must get updated weather forecasts. The forecasts must indicate that the smoke dispersion will impact the least populated areas, not obscure major roadways, etc.</p> <p>Visibility as it relates to haze is not considered at this time. Visibility if it is extreme and impairs sight while driving or causing hazardous road conditions may be considered.</p>
13. Must the affected public be notified of planned fires? Please describe.	It is not mandatory at this time, but we always recommend that the public be notified within a certain radius of the fire either door to door or with public notices on the radio or posted.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	Not at this time.
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<p>WCAQMD has a monitoring network set up in the urban core, but not in the outlying areas. We monitor for PM10, PM2.5, CO, O3, and NOx.</p> <p>If on a requested prescribe burn day the AQI is over "80" the WCAQMD may request the burn be rescheduled.</p>
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<p>Currently we update our Air Quality Index daily. If burning or wildfire impacts the air quality the AQI message will state the cause. Our AQI number (775-785-4110) is advertised extensively, as is our office number that can be called to report complaints.</p> <p>In the past if the air quality "looks" bad the media is quick to contact us and report the numbers and/or cause.</p> <p>When the WCAQMD formalizes its SMP there may be more formal public awareness procedures as it relates to prescribed burning.</p>
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	WCAQMD may inspect prescribed burn sites to assure compliance with the burn plan and the smoke management plan.

18. What penalties are authorized for non-compliance?	Failure to comply with any District regulations may result in enforcement action. Penalties of up to \$10,000.00 per day per violation are possible.
19. Are post-burn reports required? What information is required?	Not required at this time. WCAQMD requests burn information from Fire Agencies every three years when necessary to complete a Periodic Emissions Inventory.
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	No, but possibly it will when we formalize our SMP.
21. What are the review criteria?	Not applicable.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	Within the urban Truckee Meadows there is a designation of Serious PM10 Non-attainment and open burning is prohibited during the winter.
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	Not applicable.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes, public nuisance rules could apply. Section 040.055 could cause the WCAQMD to request the fire be extinguished if there are at least 8 complainants that find the smoke/odor to be objectionable.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	WCAQMD has an area that is considered a Serious PM10 Non-attainment area. A SIP has been submitted that includes section 040.035.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn	WCAQMD does not assess any special fees to fund this program the cost is absorbed by the EPA 105 grant and other stationary source permit fees.

objective, etc.)?	
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	WCAQMD includes prescribed burning in the Districts' Periodic Emission Inventories. The calculations are based on post burn season reports of acreage or number of fires.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Not at this time.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	When the WCAQMD researches how to formalize our SMP we may want it certified. The process probably would take a couple of years.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	Not at this time, but we definitely would need to know specifics if this was to be done in Washoe County and possibly would want to place restrictions on it if necessary to protect human health.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	See 31 above.

Appendix 11

State of New Mexico Survey Responses

**Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"
EC/R Incorporated - January 26, 2001**

***No response from State of New Mexico contact. Answers are same as in original survey from year 2000.**

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

[1] New Mexico Smoke Management Memorandum of Understanding 1997 - 2002.

The New Mexico Smoke Management Memorandum of Understanding includes: the New Mexico Smoke Management Plan, Fire Activity Report Forms A, B, and C, a Burn Accomplishment Evaluation Form, Emissions Calculation Forms for PM-2.5, PM-10, TOP, and VOC., a Permit Application and Reporting of Open Burning Form, a map of existing fire management zones in New Mexico, and a map of airsheds in New Mexico.

[2] New Mexico State Regulations Title 20 (Environmental Protection), Chapter 2 (Air Quality), Part 60 (Open Burning).
November 30, 1995.

[3] Standard condition of approval on permit; Vickie Komie, NM Environment Department, October 23, 2000.

[4] Discretion of NMED to add a condition of approval when warranted; Vickie Komie, NM Environment Department,
October 23, 2000.

[5] Comments by Vickie Komie, NM Environment Department, October 23, 2000.

Special Note:

- This survey was reviewed by the New Mexico Environment Department. For more information, contact Vince Vigil or Vicky Komie, NMED, 1190 St. Francis Drive, Santa Fe, NM, 87502-0110.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The New Mexico Environment Department (NMED) approves or disapproves permit applications. [1] [2]. • The agency with the approved permit makes the final decision of when to burn and notifies NMED 24 hours prior to ignition of the burn. [3] • In some cases, a permit condition of approval restricts the dates of burning, such as during the balloon fiesta or other event that may be impacted by the burn. [4]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The NMED, the USDA Regional Forester, the USDI Intermountain Region National Park Service, the BLM, New Mexico, the USDI Regional Fish and Wildlife Service, and the New Mexico Dept. Of Energy, Minerals and Natural Resources have signed a Memorandum of Understanding (MOU) that is the basis for the Smoke Management Plan (SMP). [1]

	<ul style="list-style-type: none"> • Signatories to the MOU must notify the appropriate local agencies as required in their burn plan of intent to burn and the location of each burn. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The signatories of the MOU agree to abide with the New Mexico SMP, which includes ensuring proper smoke management of prescribed fires conducted by the signatories. [1] However, there is some difference of opinion as to whether the MOU is legally enforceable. [5] • Most other open burning requires a permit and approval to burn from the NMED. [2]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • Acceptable burning projects within the MOU are: (1) Hazardous fuel reduction, (2) Slash disposal from timber sales and roads constructed within contract areas, (3) Wildlife habitat improvement, (4) Forest stand improvement, (5) Insect and disease control, (6) Site preparation for revegetation, (7) Water yield improvement, (8) Maintenance of natural ecosystems, (9) Maintenance of threatened and endangered species, (10) Other vegetative management improvement projects, and (11) Cultural scene maintenance. [1] • State regulations allow burning of fully dried tumbleweeds and burning for agricultural management, excluding timber, directly related to the growing or harvesting of crops. [2] • Other open burning is permitted for the following purposes when a permit is obtained from the NMED: (1) Weed Abatement, (2) Prevention of fire hazards, (3) Disposal of dangerous materials, (4) Instruction and training of fire fighting and fire rescue personnel, (5) Civil defense, (6) Conservation, (7) Game management, (8) Disease and pest control, (9) Land clearance for highway construction, (10) Forestry management, (11) Control of vegetation in irrigation ditches and canals, (12) Clearance and maintenance of watercourses and flood control channels to eliminate flood hazards, (13) Disposal of hydrocarbons spilled or lost from pipeline breaks or other transport failure, and (14) Other special circumstances. [2] • The NMED is prohibited by state regulation from requiring permits for agricultural burning. [1]
5. How do land managers apply for authorization to	<ul style="list-style-type: none"> • Within the MOU, for planned ignition prescribed fire, an annual

burn?	<p>application for an annual permit for all burns planned from January 1 through December 31, must be submitted to the NMED office in Santa Fe. The NMED, after review, will inform the applicant that the permit is approved, approved with conditions, or denied within 35 days after receipt of a complete application. [1]</p> <ul style="list-style-type: none"> • Within the MOU, for prescribed natural fire, application for burns are made on an annual basis. An operating plan including the prescription and map showing the area for the prescribed natural fire is included with each initial application. The application is reviewed and approved, approved with conditions, or denied. Subsequent annual applications for approved areas need not include plan and maps but only minor necessary changes for that area and the permit application form. [1] • Burn projects not covered by the MOU or not considered part of forest and public land management projects must submit an application for a burn permit for a specific project to the local NMED district office. The NMED will process the application within 20 days. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • For planned ignition prescribed fire within the MOU, land managers must have a valid annual permit, there must not exist any practical alternative to burning, managers must select appropriate smoke management techniques, each manager must use the best meteorological information to assure burning during conditions of at least “good” smoke dispersal, the permittee must notify the appropriate local agencies as required, the NMED, and managers must consider potential visibility impacts of smoke. [1] • For prescribed natural fire within the MOU, land managers must have a valid annual permit and the manager must telephone the Air Quality Bureau Enforcement Section to report fires that exceed ten acres. [1] • For projects not covered by the MOU or not considered part of forest and public land management projects, the burner must have a permit to open burn, there must not exist any practical alternative to burning, the health or welfare of any person must not be detrimentally affected, and the ambient air quality of other property must not be detrimentally affected. [2]
7. Have operating agreements been established	<ul style="list-style-type: none"> • A MOU exists between the NMED and large land managers in which

between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	the signatories agree to the SMP. [1] • The land management agencies and the NMED develop, exchange, and present interagency training as resources allow to promote understanding of the regulatory context and effects of fire ecology and smoke management. The responsible parties are the Southwest Area Fire Training Committee and the NMED Air Quality Bureau. [1]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	• Although specific alternatives are not discussed, the signatories of the MOU must consider practical alternatives to burning and may conduct prescribed burning only if there are no practical alternatives. [1] • The NMED reserves the right to deny a permit for any type of burning for which there appears to be a reasonable alternative to burning. [1][2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	• Each signatory to the MOU is responsible for proper smoke management for the prescribed fires it conducts and, on a case-by-case basis, identifies and implements the best smoke management techniques appropriate to minimize the amount and /or impact of smoke produced. For prescribed natural fire, the responsible parties must promptly initiate appropriate suppression action if the conditions of the permit are not being met. Potential visibility impacts of smoke must be considered and factored into the prescription for the burn. Piled material must be cured and as free of dirt as possible. To the degree practical, all burning must be done during periods conducive to smoke dispersal, to be determined by using the best meteorological information reasonably available. Other conditions required for smoke management may be added to the permit if deemed necessary. [1] • Other open burning must be maintained under the following conditions: no natural or synthetic rubber or petroleum products may be burned, care must be taken to minimize the amount of dirt on the material being burned, all burning, except agricultural burning, must take place between the hours of 10 a.m. and 4 p.m., and the material to be burned must be as dry as possible. [2]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	• A smoke management plan identifying sensitive receptors and the measures planned to minimize and mitigate impacts to those receptors must be included in the permit application to NMED. The information

	provided is reviewed for adequacy and completeness prior to issuance of permit. [5]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • The MOU does not specifically discuss written burn plans; however, signatories are required to apply for an annual permit and received approval. The permit application requests the following information: (1) Organization, contact name and telephone number, (2) Location, acreage, fuel loading determination method, type of fuel and number of tons/acres to be burned, (3) If smoke sensitive areas will be affected, and if so, a map of the smoke sensitive areas including distance and direction. [1] • The NMED is instituting standardized burn plan and smoke management plan forms in order to more readily evaluate applications for conformance with Federal Air Quality Standards and minimizing smoke impacts to sensitive receptors. [5] • For other open burning, the regulations do not discuss written burn plans; however, the person seeking to open burn must request a permit from the NMED in writing. The request must include the following information: (1) The requestor's name, address, and telephone number, (2) The location where the burning is to be conducted, (3) The type and quantity of material to be burned, (4) The date when the burning is to be conducted, (5) The methods that will be followed to ignite, maintain and control the burning, (6) The reasons why the requestor believes the burning is necessary, and (7) The alternatives to burning and the reasons why the requestor believes them not be feasible. [2]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Each signatory to the MOU must use the meteorological information produced by the National Weather Service Fire Weather Forecaster before burning. For planned ignitions, a single test fire may first be ignited to indicate local mixing depths. [1] • For other burning, the regulations do not discuss how smoke dispersion conditions must be evaluated; however, the wind direction at the site of agricultural burning must be such that the smoke will generally be carried away from areas of human habitation. [2] • In a prescribed fire plan, visibility in smoke sensitive areas must be

	<p>identified and smoke management techniques applied both in planning and implementation to minimize smoke impacts. [1]</p> <ul style="list-style-type: none"> • Regional Haze and other visibility impairments, excepting impacts on roadways and airports, have yet to be addressed in a comprehensive way. [5]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Signatories to the MOU must ensure that public notification plans are developed and implemented for each prescribed fire activity. In addition, signatories must notify the appropriate local agencies as required in their burn plan of intent to burn and the location of each burn. [1] • For other burning, the regulations do not discuss if the public must be notified when fires are authorized. [2]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Signatories to the MOU must have a prescribed fire contingency plan in place that will identify how the organization will reduce fire emissions, eliminate ignitions in certain areas, or take appropriate suppression action. The contingency plans will be implemented when meteorological conditions warrant, or the NMED determines that National or State Air Quality Standards are or will be exceeded, and/or the responsible land management organization anticipates that the prescription for a particular fire will be exceeded. [1] • The new SMP forms explicitly require contingency plans for each burn. For other open burning, the regulations do not discuss if contingency plans are required. [2]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • If pollutant levels are anticipated to exceed National or State Ambient Air Quality Standards, air quality control regulations, or significantly impact visibility, the NMED may require the responsible land management agency to monitor and/or model pollutants generated from a particular prescribed fire or wildfire. The NMED may assist in identification of instrumentation, site selection, installation of instrumentation, operation, calibration, quality assurance, quality control, laboratory analysis, data interpretation, and supplies. [1]

	<ul style="list-style-type: none"> • For other open burning, the regulations do not discuss if monitoring is required. [2]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The MOU states that Fire Managers, Public Information Officers, and other Agency individuals contacting the public will know details about the prescribed burning program, project(s), and objectives of the burn. Prescribed Fire handouts and other developed educational material can enhance the process. [1]
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Within the MOU, all prescribed burning operations are subject to inspection by the NMED. The determination of compliance with air quality standards is the responsibility of the NMED and is determined through modeling, emissions inventories, and air quality monitoring. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • If at any time the NMED determines that any condition of the permit is not being complied with, the permit may be revoked for the specific project where the non-compliance is occurring. In addition to revocation of the permit, the NMED may take any other enforcement action authorized under State or Federal statutes, rules and regulations. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Within the MOU, as a condition of the permit, the actual activity that occurred with each permitted burn must be reported to the NMED. Each permitted user of prescribed fire provides the NMED with an annual reporting of fire activity (by using Fire Activity Report Forms A, B, and C attached to the MOU) by March 1 for the previous calendar year's activities. [1] • The Fire Activity Report needs to demonstrate where, when, and how much fuel was burned; what types of fuel were burned; and how the emissions from the burn were determined. The Fire Activity Report must also include location, time, fuel types, (vegetative type, piles or in-situ, etc.), fuel loading (e.g., tons per acre, pile weights), number of acres or piles burned, emission calculated (pounds per ton, acre, or burn), emission rates (e.g., pounds per minute, ton per hour), and the emission

	<p>factors used in the calculations. [1]</p> <ul style="list-style-type: none"> • Upon request, the responsible land management agency must furnish to the NMED within 90 days a fire activity report for a particular prescribed fire or wildfire. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The MOU signatories agree to meet annually during the second week of January to update maps and contact persons, to evaluate the prescribed fire program and the permitting and data collection system in New Mexico, and review and modify the New Mexico Smoke Management Plan where necessary. [1]
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Within the MOU, smoke sensitive areas are described as including but not limited to Class I areas as well as other scenic and important views, especially during times of significant visitor use, urban and rural population centers, schools, hospitals, nursing homes, transportation facilities such as roads and airports, recreational areas, and other locations that may be sensitive to smoke impacts for health, safety, scientific, or aesthetic reasons. [1] • Each signatory to the MOU must explicitly consider potential visibility impacts of smoke in Class I areas and other smoke sensitive areas. Each signatory must minimize smoke impacts through application of appropriate smoke management techniques including scheduling burns outside times of significant visitor use and employment of alternatives to prescribed burning to the extent they are environmentally acceptable, technologically feasible and economically reasonable. [1] • Smoke sensitive areas that are scenic and/or important views are identified in zone management plans. Zone smoke management plans are coordinated by each Zone Board. [1] • For other open burning, the emission of smoke must not be allowed to pass onto or across a public road or landing strip such that a hazard is created by impairment of visibility, and the wind direction at the site of agricultural burning must be such that the smoke will generally be carried away from areas of human habitation. [2]

23. Does the program establish any performance standards? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The MOU identifies six objectives: (1) To minimize the generation and/or impacts of smoke in New Mexico when prescribed burning is necessary, particularly in smoke sensitive areas and in important views in Class I areas, (2) To encourage, consider, and use alternative treatments when they are ecologically beneficial, technologically feasible, and economically reasonable, (3) To assure that the New Mexico Ambient Air Quality Standards and air quality control regulations are not violated., (4) To develop and implement an interagency system among land management agencies to monitor and inventory emissions from prescribed fires and wildfires, (5) To cooperate in developing, exchanging and presenting training for employees to promote their understanding of smoke management, fire ecology, and regulatory requirements, and (6) To establish and maintain communication and information exchange among all agencies with responsibilities for smoke management on prescribed fires. [1]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Information not provided.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Information not provided.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • The program budget of the Air Quality Bureau funds the State smoke management program in the form of salary for personnel to evaluate applications, issue permits and track the burns. No fees are charged to the applicants for permits or approved burns. [5]
28. Does the State and/or local districts maintain	<ul style="list-style-type: none"> • Combined with appropriate emission factors for each vegetative type

daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<p>indicated, the information from annual reporting and Summary of Burn Accomplishment Evaluations allow the NMED to have an emission inventory for VOC's, TSP, PM10, PM2.5, and visibility impacts due to fire. [1]</p> <ul style="list-style-type: none"> • To develop the emission inventory, the fire activity report provided by land management agencies needs to demonstrate where, when, and how much fuel was burned; what types of fuel were burned; and how the emissions from the burn were determined. The Fire Activity Report must also include location, time, fuel types, (vegetative type, piles or in-situ, etc.), fuel loading (e.g., tons per acre, pile weights), number of acres or piles burned, emission calculated (pounds per ton, acre, or burn), emission rates (e.g., pounds per minute, ton per hour), and the emission factors used in the calculations. [1] • Although required by the MOU, the post-burn fire activity reports are rarely submitted by the agencies. At this time the NMED does not have a comprehensive emission inventory. Measures to correct this lack will be taken soon by notifying each agency of the need to fulfill the requirement for submittal of emission reports. [5]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No mechanism is specified to evaluate reductions in potential emissions based on alternatives to burning, thinning or burn techniques. [5]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Plans to create new regulations regarding prescribed burning are now pending. These regulations will take precedence over the MOU now in effect. [5]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding	No.

biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	
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Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

***No response from City of Albuquerque/Bernalillo County Environmental Health Department, New Mexico. Answers are same as in original survey from year 2000.**

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

[1] Title 20, Chapter 11, Part 21-Open Burning. Effective date December 1, 1995.

[2] Application for an Open Burn/Open Detonation Permit Form. Environmental Health Department, Air Pollution Control Division.

[3] Comments received from Mark Dear, R.A., Compliance Supervisor, Air Quality Services, Environmental Health Department, Bernalillo County, NM, October 10, 2000

Special Note:

- This survey was reviewed by the City of Albuquerque/Bernalillo County Environmental Health Department. For more information, contact Mark Dear or Angel Martinez, EHD, P.O. Box 1293, Albuquerque, NM, 87103

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Albuquerque Environmental Health Department (AEHD), along with the Bernalillo County Fire Department, decides whether or not burning is allowed for any given period of time, based on both climatological information and safety precautions. The decisions are made separately, so anyone who wishes to burn must have approval from both organizations. [3]• The AEHD evaluates applications and grants, grants with additional conditions, or denies, multiple and single event open burning permits. [1]• The Air Quality Division (Division) of the AEHD has the regulatory authority. [3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none">• At this time there is no regional coordination. The Division's jurisdiction extends throughout Bernalillo County, but does not include Indian lands. There are currently no MOUs in place. [3]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none">• There is no SMP at this time. [3]• Permits are issued based on the best interest of the local community consistent with the Board's goal of eliminating burning that is environmentally non-essential. [1]• Burners must comply with the Open Burning Regulations and any

	additional conditions the AEHD decides are necessary . [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The Regulation covers a number of different types of burning including burning for timber and forest management and commercial agricultural burning (means the burning of crop residues for field preparation or that is otherwise necessary for the production of a crop that is sold by or used as feed in a registered agricultural business). [1] • Burning for the removal of dead and dry tumbleweed does not require a permit but the burn must take place during specified times (11 a.m. to 3 p.m. and during October thru March 6 a.m. to 5 p.m.) and the staff engineer or the environmental health specialist of the AEHD must be notified at least 24 hours prior to the planned burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Burners must submit an Application for an Open Burning Permit at least 24 hours in advance of a single event (the Application for an Open Burning Permit form asks burners to allow at least one week for processing.). Single event permits are required for timber and forest management and commercial agricultural burns of 1/4 acre or more. [1][2]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The AEHD must approve the application and issue a permit and the burner must comply with all conditions of the permit. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The permits serve as agreements between the Division and other agencies, both governmental and private. There is no SMP. [3]
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The Application for an Open Burning Permit form asks the burner to state the alternatives to burning that were considered and the reason why they were not chosen instead of burning. [1][2] • Emission reductions are not tracked. [3]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The AEHD considers anticipated atmospheric conditions before issuing a permit. The AEHD Director has the authority to suspend any open burning in the event of current or prospective violations of the ambient air

	<p>standards. Open burning is suspended during declared “No burn periods” of the winter pollution advisory. [1]</p> <ul style="list-style-type: none"> • Permit conditions establish the minimization required by the Division.[3]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • If it is part of a permit condition. The information is used for establishing both yearly emission levels (Title V Operating or Authority to Construct) and for emissions inventories. [3]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Burners must submit an Application for an Open Burning Permit form. The burner must provide the following information: the burner's name, address, and telephone number; location where burning is to be conducted; type and quantity of ignitable material and fuel; date(s) when the burning is to be conducted; or estimated number, character, and schedule of fires to be conducted; general description of method to ignite, maintain, control and terminate the burning; reasons why the requestor believes the burning is necessary; and what alternatives to burning have been considered and why they were not chosen instead of burning. For multiple event permits – the number and character of similar fires conducted during the previous permit cycle for which renewed approval is sought. [1] • Additional information required varies according to the request. [3] • Once the permit is approved, any need to deviate from it must be reported to and approved by the AEHD in order to maintain the validity of the permit. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • These items are considered, but are not officially established. [3]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • No, not at this time. [3]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Such needs are established in the permit, if it is deemed necessary. [3] • Burners are required to provide a general description of methods to control and terminate the burning in the Application form. [1]
15. Must the air quality impacts of fires monitored?	<ul style="list-style-type: none"> • Monitoring can be required by permit, but generally it is not. [3]

Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The public is aware of who to contact for obtaining burning permits, and the phone numbers are advertised on radio and television. There is not an outreach program specifically designated for SMP support. [3]
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • There is no SMP. [3]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Any permit may be revoked if the burner fails to comply with the permit provisions. [1] • Authorized penalties for non-compliance include federal penalties (\$15,000 per day, per violation) or civil, including injunctions, or citations through Metro Court (\$50 to \$2000). [3]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Post burn reports generally are not required, but in some cases they are required by permit. [3]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • No. [3]
21. What are the review criteria?	<ul style="list-style-type: none"> • Not applicable.
Optional Air Quality Protection	
22. Does the program establish any special protection zones? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • There are no special protection zones, other than common sense in regards to each permit. [3]

23. Does the program establish any performance standards? What are performance standards? How is performance evaluated?	• There are no performance standards. [3]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	• Not applicable.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	• There are no applicable “nuisance” regulations. Complaints and problems are handled on a case-by-case basis.[3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	• Not at this time. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	• There are no fees for burn permits at this time. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	• Emissions from burning are considered when the source holds a federally enforceable permit, or when such information is required for an emissions inventory. Such inventories are based on post-burn reports when available, or on the original application, or by personal contact. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• No. [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• There is no SMP. [3]

<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Appendix 12

State of North Dakota Survey Responses

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Communication with North Dakota Department of Health and Air Quality, 4/26/02

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

[1] North Dakota Air Pollution Control Rules, Chapter 33-15-04, Open Burning Restrictions at

<http://www.health.state.nd.us/ndhd/enviro/ee/air/regs/331504.pdf>

[2] North Dakota Department of Health, Application for Open Burning Variance, SFN-8509 at

<http://www.health.state.nd.us/ndhd/enviro/ee/air/forms/air/08509si.pdf>

[3] Comments received from the North Dakota Health Department dated July 20, 2000.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • North Dakota regulations specify permissible open burning and the applicable conditions. In order to burn a material not specifically allowed in the regulations, a variance to the rules must be obtained from the North Dakota Department of Health, Division of Air Quality (DAQ), by first submitting an application for an open burning variance. Fires purposely set to forest or rangelands for a specific reason in the management of forest, rangeland, or game are permitted by rule and do not need a variance; however, prior approval of the DAQ is required. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • Applications for an open burning variance must be approved by both the Local or District Health Unit and by the City or Rural Fire Department before submittal to the DAQ. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • North Dakota does not have a smoke management program.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<p>The regulations cover several types of open burning including, but not limited to:</p> <ul style="list-style-type: none"> • Fires purposely set to forest or rangelands for a specific reason in the management of the forest, rangeland or game in accordance with practices recommended by state or federal agencies, as appropriate,

	<p>and the burning is approved in advance by the DAQ. [1]</p> <ul style="list-style-type: none"> • The burning of trees, brush, grass, wood, and other vegetable matter in the clearing of land, right-of-way maintenance operations, and agricultural crop burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • They use a standardized form which contains the legal description of the area(s), the number of acres to be burned, the time required to burn (hours/days) and a map showing the area(s). [3]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Fill out the required form. Most Federal Agencies have a smoke management plan which they have submitted to the DAQ for review. Most prescribed burning is coordinated by the North Dakota Fire Council. [3]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The application form was a coordinated effort between the DAQ and the North Dakota Fire Council which is comprised of all the Federal and State Agencies that conduct prescribed burning in the State. [3] • Smoke management training and fire control techniques are taught by the agencies conducting the prescribed burning. [3]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The smoke management plans prepared by the agencies conducting prescribed burning usually examine alternative procedures. [3]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Burning must not be conducted upwind of, or in proximity to, an occupied building such that the ambient air of such occupied building may be adversely affected by the air contaminants being emitted. [1] • Care must be used to minimize the amount of dirt on the material being burned and the material must be dry enough to burn cleanly. [1] • Except in an emergency, burning may not be conducted in such proximity of any Class I area that the ambient air of such area is adversely impacted. [1] • Burning is prohibited if the fire index is in the “extreme” category as issued by the National Weather Service. Notification is required to the DAQ prior to starting the burn if the fire index is in the “very high” category. [1]

	<ul style="list-style-type: none"> • If state or local fire officials determine conditions unsafe for open burning, such burning must cease until conditions are deemed safe by such officials. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • No. If complaints are received about a prescribed burn, an inquiry into the procedures followed and the conditions that existed during the burn would be initiated. [3]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • The application for open burning approval must include: [2] <ul style="list-style-type: none"> - Applicant information - Location of burn site and description of materials to be burned - Reason for burning and when it will be completed - A list of towns or occupied residences within one mile
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • The burning may be conducted only when meteorological conditions favor smoke dispersion and air mixing. [1] • The burning must not be conducted adjacent to any highway or public road so as to create a traffic hazard. [1] • The burning must not be conducted adjacent to any operational military, commercial, county, municipal, or private airport or landing strip in such a manner as to create a hazard. [1] • Except in an emergency, the visibility of any Class I area cannot be adversely impacted. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • There is no current requirement to notify the affected public but the Federal Agencies typically alert the nearest radio station for public announcements. [3]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • No contingency plans are required and there have been no reported smoke intrusions to date. [3]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • There is no current requirement to monitor for air quality impacts. [3]
<i>Public Education and Awareness</i>	

16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	• No program has been established at this time. [3]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	• No actions are planned at this time. [3]
18. What penalties are authorized for non-compliance?	• Fines up to \$10,000 per day per violation are authorized under the Air Pollution Control Rules. [3]
19. Are post-burn reports required? What information is required?	• At year end, burners must submit post burn report summarizing acreage burned.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	• Not at this time. [3]
21. What are the review criteria?	• Not applicable. [3]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	• No. [3]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	• No. [3]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	• Not applicable. [3]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires?	• The State does have nuisance laws which could apply, but it is unlikely that the DAQ would initiate action under these laws. A more likely course of action would result from non-compliance with the conditions contained

What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	in the variance or approval, if it was determined that such a departure had occurred. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	• Chapter 33-15-04 is part of the SIP and any smoke management plan policy that might be added in the future would likely be added to this chapter. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	• Not applicable. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	• Not at this time. This may have to done to comply with the proposed requirements of EPA's "Consolidated Emissions Reporting". [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• No. [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• No plans are in place at this time. [3]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	• No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for	• No.

vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	
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Appendix 13

State of Oklahoma Survey Responses

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”

EC/R Incorporated - January 26, 2001

From Communication with State of Oklahoma DEQ 6/13/02

Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	Burn/no burn decisions are fragmented between two state agencies. The primary responsibility regarding “vegetative management” rests with the Department of Agriculture. In Eastern Oklahoma’s Forest Fire Protection Area, the Department of Agriculture’s Forestry Services has regulatory authority to approve burning in unincorporated areas. In the remainder of the state no central authority regulates burning, although some municipal fire departments may issue burning permits for their city limits. During a severe drought the Governor may ban burning anywhere in the state, based on a recommendation by the Department of Agriculture’s Forestry Services. The Air Quality Division regulates the open burning for the purpose of clearing land through Subchapter 13, Open Burning Prohibited ₁ .
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	Forestry Services coordinates with Fire Departments, counties and tribes at the local level. However there is formal agreement in place for permitting. Some tribes have elected to adopt “state statutes” and in so doing, also have agreed to honor the Governor’s and Forestry Services jurisdiction for the regulation of burning. There is generally no coordination with adjacent State. There are no formal MOUs in place at this time.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	Oklahoma does not have a formal Smoke Management Program in place. (See #5.)
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Oklahoma does not have a formal Smoke Management Program in place. (See #5.)
5. How do land managers apply for authorization to burn?	The Department of Agriculture requires an oral application be approved prior to burning. They should follow Oklahoma’s Voluntary Smoke Management Guidelines (“Guidelines”) published by the Oklahoma Department of Agriculture, Forestry Division.
6. What are the criteria for getting permission to burn?	Adherence to the “Guidelines” is expected. Permission to burn is generally

	granted by Forestry Services, unless extreme fire danger is expected or exists.
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	No. No. No.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	None. None. No.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	None. None.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	N/A.
Smoke Management Components of Burn Plans	
11. Are written burn plans required by the SMP? What information must be included?	No.
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	There are no requirements in the AQD rules, except for a prohibition against nuisances. The "Guidelines" address Category Days (ventilation rate), Screening distance, Trajectory of the smoke plume, Identifying smoke sensitive and other impacted areas and Evaluation of these criteria in the burn/no burn decision. N/A, there is no SMP. No.
13. Must the affected public be notified of planned fires? Please describe.	No.
14. Are contingency plans required to reduce	No.

exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	No.
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	No. N/A N/A N/A N/A
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	N/A
18. What penalties are authorized for non-compliance?	Noncompliance with an air pollution rule could result in a penalty of up to \$10,000/ day. In reality, it would probably be much less for a violation of SC 13.
19. Are post-burn reports required? What information is required?	No reports are required in the AQD rules. However, the Department of Agriculture logs date and scope (acres) of the burn.
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	No.
21. What are the review criteria?	N/A.
Optional Air Quality Protection	
22. Does the program establish any special protection	No, there is no SMP. However refer to the discussion regarding #12.

zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	No.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	N/A.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	Yes. Generally, complaints would be the primary consideration for establishing a nuisance.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	No. Subchapter 13 Open Burning Prohibited is a part of the SIP.
27. How do the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	The AQD program budget supports the implementation of SC 13. N/A.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	Annual estimates. No.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	No.

30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	No.
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	There are no air quality rules that are applicable in this area. The Department of Agriculture regulates the application of herbicides, pesticides, etc. No. No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

¹The Oklahoma Administrative Code (OAC) 252:100-13-5 **Open burning prohibited**, prohibits open burning save the exceptions found in OAC 252:100-13-7 **Allowed open burning**. OAC 252:100-13-7(d) reads as follows:

(d) **Land Management and land clearing operations.** Open burning is allowed for the following land management and land clearing operations:

- i. Fires purposely set to forest, crop or range lands for a specific reason in the management of forests, crops or game, in accordance with practices recommended by the Oklahoma Department of Wildlife Conservation, the Oklahoma State Department of Agriculture, and the United States Forest Service.
- ii. Fires purposely set for land clearing operations if conducted at least 500 feet upwind of any occupied residence other than those located on the property on which the burning is conducted,

Appendix 14

State of Oregon Survey Responses

**Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"
EC/R Incorporated - January 26, 2001**

**From Communication with Oregon Department of Forestry 6/13/02
Smoke Management Program Components Regarding Vegetative Management**

Source of summary information:

[1] Smoke Management Reference Manual. Oregon Department of Forestry, Fuels and Meteorological Services Section.
June, 1993.

[2] Memorandum of Understanding between the Oregon Department of Environmental Quality, Oregon Department of Forestry, U.S. Department of Interior Bureau of Land Management, and U.S. Department of Agriculture Forest Service. Undated.

[3] Comments received from the Oregon Department of Forestry dated August, 1999.

[4] Comments received from the Oregon Department of Forestry dated August 8, 2000.

Special Note:

- This survey was reviewed by the Oregon Department of Forestry. For more information, contact Mike Ziolk, ODF, 2600 State St., Salem, OR, 97310.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Oregon Department of Forestry (ODF) State Forester is responsible for making the burn/no burn decisions. Burning instructions must be complied with on all applicable lands. [1][3] • The authority for approving prescribed burning is delegated to the District Forester for burning conducted within ODF protection district boundaries. [1] • Authority is delegated to the Forest Supervisor for the USDA, Forest Service, and the park Superintendent for the National Park Service for burning in their administrative areas that are coordinated with the State forester. [1] • The Bureau of Land Management is delegated authority in areas outside of the restricted area. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The ODF coordinates with the Oregon DEQ. Cooperating agencies that provide information and/or resources include the Washington Department of Natural Resources, the USDA Forest Service, the Bureau of Land Management, Bureau of Indian Affairs, U.S. National Park Service, U.S. Fish & Wildlife Service, National Weather Service, Regional air pollution authorities, and Oregon Forest Industries Council.

	<p>[1]</p> <ul style="list-style-type: none"> • A memorandum of understanding (MOU) exists between the Oregon DEQ, Oregon ODF, U.S. Department of Interior Bureau of Land Management, and U.S. Department of Agriculture Forest Service to achieve the common goal of protecting air quality, life and property, and restoring and maintaining the health of forest ecosystems in northeast Oregon. [2] • Courtesy coordination occurs between ODF and the NE California Air Alliance, keeping each other informed of activities. [4]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The program is applicable to prescribed burning on forest land in Oregon within Oregon ODF forest protection district or national forest boundaries where the intent is to maintain the land in use for forest management purposes or as a commercial forest operation. [1] • Private and non-federal government forest landowners must perform forest land prescribed burning according to the Oregon Smoke Management Plan and must burn according to directions from ODF field administrators. Federal land managers must also perform according to the SMP, they have the delegated authority. [1][4] • The program does not apply to prescribed natural fires. [1] • Burning on private land, at any time, outside of a protection district is not part of the program. All such burning must be conducted in accordance with requirements of state or local agency air quality regulations. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The program covers prescribed burning on forest land in Oregon within Oregon ODF forest protection district or national forest boundaries where the intent is to maintain the land in use for forest management purposes or as a commercial forest operation. [1]
5. How do land managers apply for authorization to burn?	<p>Three basic steps are involved:</p> <ul style="list-style-type: none"> • A ODF Forest Practices Forest Activities Computer Tracking System (FACTS) number must be obtained through the local ODF office prior to burning a unit. [1] • A "Unit Description" is reported on a Reporting System Coding Sheet (Part 1, Form 1-4-1-501) and then entered into the computer by the field administrator. [1]

	<ul style="list-style-type: none"> • Unit numbers of planned burns in the restricted area are submitted by field offices on the day before burning is to be done. This results in a list of planned burns (Part 2, Form 1-4-1-501). [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • A forest landowner or operator must, in cooperation with the State Forester, develop a written burn plan when the ODF district determines that the plan is needed. [1] • Burning will not be initiated until smoke management instructions are issued from Salem. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Although the Washington Department of Ecology is not a signatory of the MOU, the DEQ, ODF, BLM, and the Forest Service coordinate with them on all air quality and forest health concerns. [1] • Burner requirements are not discussed in the SMP. • Smoke Management training is available upon request.
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The program does not specifically discuss alternatives to fire as a land management tool but does encourage, through the Forest Practices Foresters, alternate treatment practices that are consistent with the purposes of the Forest Practices Act. [1] • The ODF will encourage private forest landowners to burn only those units that must be burned to achieve the landowners' objectives. Forest Practices Foresters will encourage utilization of residue, fuel reduction measures, low emission-producing burning methods, and alternate treatment practices that are consistent with the purposes of the Forest Practices Act. [1] • Emission reductions are tracked, but the techniques used to achieve the reductions are not. [4]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Mass ignition methods are encouraged to help reduce emissions where such techniques are economical and practical. [1] • Mop-up is initiated consistent with atmospheric and wind conditions. [1] • Tonnage limits are reviewed by the DEQ and ODF for possible update and revision, as necessary, as uniform fuel loading estimation and consumption procedures are developed and tested. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this	<ul style="list-style-type: none"> • The reporting system forms do not require documentation of the actions taken to minimize emissions before and during fires. [1]

information used?	
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • A forest landowner or operator must, in cooperation with the State Forester, develop a written burn plan when the ODF district determines that the plan is needed for fire control or air quality reasons. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • The State Forester and the field administrators will monitor weather factors and air quality conditions in designated areas and other areas sensitive to smoke. [1] • The Salem Forestry Weather Center provides smoke management forecasts daily. The forecast is for the following day with an update as necessary on the morning of the forecast period. The forecasts include reference to transport winds and mixing for the restricted area and other areas sensitive to smoke. Burning will be conducted in accordance with the current forecast information. [1] • Smoke management instructions are issued by the state meteorologist at the Salem Forestry Weather Center and during periods when weather is favorable for significant amounts of burning. The instructions are based on an analysis of the atmospheric conditions affecting smoke transport, dispersion, and air quality in designated areas and other areas sensitive to smoke. [1] • For purposes of visibility protection, the Mt. Hood, Mt. Jefferson, Mt. Washington, Three Sisters and Diamond Peak Wilderness areas and Crater Lake National Park as well as all Class I areas have been set aside under the SMP as "smoke sensitive" areas from July 1 to September 15. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Federal and non-federal landowners are encouraged to notify adjoining residents of planned burning at least one week in advance and also on the day of the burning, if possible. [1] • Daily information is available on the web. [4]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<p>While formal contingency plans are not discussed in the reference manual, the following is required:</p> <ul style="list-style-type: none"> • The field units are required to provide a smoke intrusion report to the smoke management meteorologist if smoke from prescribed forest burning enters a designated area or other area sensitive to smoke at

	<p>ground level. This allows the smoke management personnel to obtain monitoring data prior to and during the incident. It also facilitates public relations work resulting from an incident. [1]</p> <ul style="list-style-type: none"> Any wildfire that has the potential for smoke input into a designated area or other area sensitive to smoke must be reported immediately to the State Forester's Fire Operations Center. [1]
<p>15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?</p>	<ul style="list-style-type: none"> The DEQ maintains a realtime monitoring network used by ODF. [1] [3] Particulate levels are monitored. [4] The air quality impacts of fire must be monitored. [1] The State Forester monitors prescribed burning operations when necessary by aircraft and other means to insure compliance and determine the effectiveness of smoke management procedures. [1] Random audits and requiring smoke intrusion reports are ways of monitoring. [1] Field units are responsible for monitoring burn activity and reporting intrusions. [1] Monitoring is intensified when needed by using lookouts, aerial observations, and on-site observations of smoke behavior. [1] Landowners are responsible for intermittent monitoring for at least 3 days to ensure the smoke is not causing an impact in a nonattainment city. Landowners must provide a level of mop-up, as directed by the ODF, which will prevent or minimize smoke impacts upon the PM-10 nonattainment areas. [1] Impact severity levels are established. Data is used to modify burning and improve the program. [4]
Public Education and Awareness	
<p>16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?</p>	<ul style="list-style-type: none"> A public education and awareness program has not been established. [4]

<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • To evaluate compliance with the smoke management program, the State Forester will conduct a review of approximately 1% of the units burned each year in the restricted area. Approximately one-half of the audits will be conducted on the day of the burn and approximately one-half will be pre-burn audits. [1] • The DEQ may participate in audits. [1] • Daily reporting procedures allow tracking of burns that are or are not in compliance with daily burning instructions. [4]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • On non-federal lands violations of the smoke management program, directive, or the daily instructions issued by the State forester are subject to enforcement action by the State Forester: 1) burning without a permit is a violation of ORS 477.515, and 2) burning not in compliance with the smoke management program and directive is a violation of OAR 629-615-0300(2)(a). [1] • On Federal forest land violations of the smoke management program, directive or the daily instructions issued by the State Forester are subject to federal enforcement action under Section 118 of the Clean Air Act, as amended in 1990. [1]
19. Are post-burn reports required? What information is required?	Yes, a computerized accomplishment report is submitted by field offices in the restricted area the day after burning. The report requires the following information: fire unit number, district or forest identifier, actual date of burn, actual ignition time, number of acres actually burned, fuel actually consumed in piles, fuel consumed in broadcast portion of units or underburns, ignition duration, ignition method, if rapid ignition was achieved, weather station, 10-hour fuel moisture, 1000-hour fuel moisture, 1000-hour fuel moisture method used, number of days since significant rain, unit weather at the time of ignition, and snow-off month. [1]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The smoke management plan and directive is reviewed at least every five years. The review is conducted by the State Forester and the Director of Environmental Quality and includes representatives of affected agencies and parties. [1]

21. What are the review criteria?	<ul style="list-style-type: none"> • There are no specific review criteria. The entire plan is reviewed for applicability and need on a periodic basis. [4]
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The program establishes special protection zone (SPZ) requirements. [1] • The SPZ is shown on maps which are included with the documentation for Special Protections Zone Requirements (Appendix 4) of the Smoke Management Reference Manual. [1] • Prescribed burning in the SPZ will be allowed only when the smoke management meteorologist believes there will be no measurable smoke impacts within the PM-10 nonattainment area. [1] • Between December 1 and February 15, no new ignitions will be allowed in the SPZ on a day that a "Red" day has been declared through the local woodstove curtailment program. No pile burning will be allowed if ODF believes that the piles will produce significant smoke after the third day. [1] • For SPZs, in the event that areas violate the PM-10 standards beyond statutory deadlines and prescribed burning is demonstrated to be a significant source, the following contingency plan provisions will be implemented: 1) the SPZ boundaries will be expanded to include the area from which burning could have a significant impact during the nonattainment period, 2) SPZ restrictions will apply over more of the calendar year (November 1 to March 1), 3). The SPZ around Kalmath Falls and La Grande, as well as all future PM-10 nonattainment areas will have mandatory smoke management programs during the time when the zones are in effect, and 4) Prescribed burning will be prohibited within the SPZ during December and January if an impact of 5 to 10 micrograms per cubic meter, 24 hour average, is demonstrated, after contingency provisions are in effect. Burning will be prohibited November 1 to March 1 if an impact of 10 micrograms per cubic meter, 24 hour average, as demonstrated by monitoring, after the contingency provisions go into effect. [1]
23. Does the program establish any performance standards"? What are performance standards? How	<ul style="list-style-type: none"> • While the program does not establish any specific performance standards, the program does established a smoke management

is performance evaluated?	<p>Directive. The objective of the Directive is to prevent smoke, resulting from burning on forest lands, from being carried to or accumulating in designated areas and other areas sensitive to smoke; to provide maximum opportunity of essential forest land burning; to coordinate with other state smoke management programs; to conform with state and federal air quality and visibility requirements; to protect public health,; and to encourage the reduction of emissions. [1]</p> <ul style="list-style-type: none"> • Intrusions intensity is defined. [1][3] • An emissions reduction goal is established. [4]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Adjustments in burning strategies are made after the progress in meeting objectives is evaluated during periodic reviews. [4]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The smoke management plan protects “other areas sensitive to smoke” (OAR 629-043-043(2)(q)) [1] [3] • Intrusions of smoke are defined in the smoke management operational directive with quantitative nephelometer values. [1][3][4] • The regulations do not apply to prescribed natural fires. [4]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Yes. [3] • Visibility considerations are also part of the SIP. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • General fund, harvest tax, per acre fees, and direct payment for services fund the program. OAR 629-043-041 describes the acreage assessment. An MOU exists with federal agencies in northeast Oregon for direct payment. [3] • The acreage assessment is \$0.50/acre to register a unit for burning and \$2.00/acre for piled burns accomplishments and \$5.00/acre for broadcast and underburn accomplishments. Fee exemptions are allowed for forest health burning and units less than 3 acres in size. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel	<ul style="list-style-type: none"> • The Department of Forestry calculates particulate emissions for every burn. Emissions can be summarized for any time period. [3] • Emissions calculations are based on actual acres burned, weather and fuel conditions and fuel consumption algorithms. [3]

consumed, etc.)?	
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• No. [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• If necessary, the certification would occur during a revision to the SIP. There is no specific timeline. [4]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	No.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Appendix 15

State of South Dakota Survey Responses

Appendix 16

State of Texas Survey Responses

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”
EC/R Incorporated - January 26, 2001
From Communication with Texas Natural Resources Conservation Commission (TNRCC) 6/12/02
Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Texas Natural Resources Conservation Commission (TNRCC) is in charge of overseeing all outdoor burning. [1] • Each county during drought conditions may prohibit or restrict outdoor burning. [3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<p>The TNRCC coordinates with local programs that may enforce the state regulations.</p> <p>The Texas Prescribed Burning Board has developed a certification process that includes smoke management within the burn plan. All requirements must be consistent with TNRCC regulation. Also the TNRCC has representation on the board. Texas Administrative Code. Chapter 225</p>
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The Outdoor Burning Rule is the State’s smoke management program and compliance with the requirements is mandatory to have an authorized burn. [2]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<p>The regulations include all burns, which includes prescribed burning, crop residual burning and landclearing.</p>
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • The Texas Forest Service must be notified prior to prescribed burning for forest management purposes. When possible, the appropriate commission regional office should also be notified, although it is not required. [1] • Most open burning is allowed in accordance with the regulations or by orders or permits of the commission. If possible in some cases, the appropriate commission regional office should be notified of the burn, although it is not required. [1] • Outdoor burning for training fire-fighting personnel must be requested in writing to the local air pollution control agency or the appropriate commission regional office. [1] • Prior to any coastal salt-marsh management burning, verbal or written notification must be made to the appropriate commission regional office.

	<p>[1]</p> <p>Most open burning is allowed in accordance with the regulations or by orders of the commission. If possible, the appropriate commission regional office should be notified of the burn. [1]</p> <p>Prior to any coastal salt-marsh management burning, land must be registered with appropriate commission regional office and verbal or written notification must be made to the appropriate commission regional office. [1]</p>
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Outdoor burning conducted within the parameters of the regulations is authorized. • Outdoor burning not authorized by the regulations may be authorized by written permission from the executive director if there is no practical alternative and burning will not cause or contribute to a nuisance, traffic hazard, or to a violation of any federal or state primary or secondary ambient air standard. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<p>There are no established operating agreements between the central authority and land managers.</p> <p>Legislation created a Prescribed Burning Board within the Texas Department of Agriculture which established curriculum and standards for a prescribed burning certification program.</p>
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The regulations do not discuss alternatives to fire that can be used as a land management tool, but the regulations only allow open burning when no practical alternative to burning exists for the following: right-of-way maintenance, land clearing operations, maintenance along water canals, crop residue burning for agricultural management purposes, and for brush, trees, and other plant growth causing a detrimental public health and safety condition [1]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Anyone performing outdoor burning must not burn electrical insulation, treated lumber, plastics, nonwood/demolition materials, heavy oils, asphaltic materials, potentially explosive materials, chemical wastes, and items containing natural or synthetic rubber. [1] <p>No change with the following addition:</p>

	The regulations include the General Requirements for Allowable Outdoor Burning which includes distance limitations, meteorological conditions, times and conditions for outdoor burning.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> The regulations do not specify whether actions taken to minimize emissions before and during fires must be documented. [3][4]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> The regulations specify that for salt marsh burns the land manager must register all land on which burning will be conducted and provide a map which identifies significant points such as roads, canals, etc. and large acreage. The map must be subdivided into manageable blocks and each block must be identified. The TNRCC uses these maps to determine if the burn will potentially impact any sensitive receptors. The way the TNRCC rule is structured for salt marsh burns, the submission of the map and compliance with the meteorological constraints in the rule as well as the authorization requirements constitutes a burn plan. [1][2]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> The regulations specify that burning must be commenced and conducted only when wind direction and other meteorological conditions are such that smoke and other pollutants will not cause adverse effects to any public road or highway, landing strip, navigable water, or off-site structure containing sensitive receptor(s). [1] It is required that burning must be conducted in compliance with the following meteorological and timing considerations: (1) Burning must commence no earlier than one hour after sunrise and be completed on the same day not later than one hour before sunset; (2) Burning must not be commenced when surface wind speed is predicted to be less than six miles per hour or greater than 23 miles per hour during the burn period; and (3) Burning must not be conducted during periods of actual or predicted persistent low-level atmospheric temperature inversions. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> The regulations require the notification and approval of adjacent land occupants if the burn will be within 300 feet of the property line unless the burn is conducted downwind from the sensitive receptor. [1][2]

14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • If at any time the burning causes or may tend to cause smoke to blow onto or across a road or highway, it is the responsibility of the person initiating the burn to post flag-persons on affected roads. [1] • If smoke from open burning has the potential to create a nuisance or traffic hazard condition the fire must be extinguished. [1][2]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The regulations do not discuss whether air quality impacts of fires must be monitored. [3][4]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The current regulations were developed following an extensive series of roundtable meetings with state elected officials, state and federal environmental and agricultural agencies, environmental advocacy groups, industry associations, local and regional agencies, and academics.
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • A notice of violation can be issued by the regional office.
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • The TNRCC has the statutory authority to levee administrative or civil penalties for any violation of the regulation. Administrative penalties can range as high as \$10,000 per occurrence per violation and civil penalties can go as high as \$25,000. [2]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • The regulations do not require post burn reports. [3][4]
Program Evaluation	
20. Does the program include provisions to	<ul style="list-style-type: none"> • The regulations do not require a review of effectiveness. [3][4]

periodically review its effectiveness?	
21. What are the review criteria?	• The regulations do not specify review criteria. [3][4]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	• The regulations do not specify any special protection zones. [3][4]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	• The regulations do not specify any performance standards. [3][4]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	• The regulations do not specify what additional criteria should be used when performance standards have been exceeded. [3][4]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	• Yes. • The TNRCC has a welfare-based nuisance rule which precludes any person from discharging an air contaminant in such concentration and of such duration as to interfere with the normal use and enjoyment of a landowner's property. Nuisance conditions are established by the investigator, who must document that the observed conditions were of sufficient concentration and duration as to constitute a nuisance condition. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	• Subchapter B has been submitted as part of the SIP. [2]
27. How do the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	• General Appropriations. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions	• The TNRCC is in the process of developing a statewide inventory. [2]

inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• Not at this time. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• Not at this time. [2]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	• The Texas Department of Agriculture has lead authority for pesticide regulation in the state of Texas. This include selected herbicides.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	• Cannot create a nuisance.

Template of Questions from “Wildland Smoke Management Program Survey, Western Governor’s Association, Contract No. 30202-11,”
EC/R Incorporated - January 26, 2001
City and County of El Paso, Texas
From Communication with TNRCC Region 6 – El Paso 6/24/02
Smoke Management Program Components Regarding Vegetative Management

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	This is depended on the laws in effect. Counties and/or municipalities can enact burning laws so long as the rules are consistent or stringent than the state law. Ultimately, the state of Texas has ultimate authority.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	Regional coordination is currently being established with local fire department, county attorney’s office, and city attorney’s office. There is no formal coordination established in this region (this does not reflect other regions in the state), it is mostly courtesy coordination among the various state and local agencies involved in outdoor burning.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	The state has no formal smoke management program (SMP) for any authorized or exempt outdoor burning activity. There are general rules which do state the time burning can be done, what material can be burned, how the fires are to be managed, during what weather conditions a burn may be initiated, and ultimate responsibility for engaging in burning.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	Exempt and authorized burning includes mostly agricultural, refuse disposal, irrigation canal cleaning by burning, fire training, and recreational/ceremonial burning.
5. How do land managers apply for authorization to burn?	This differs among the regions in the state. In this region, requesting authorization is done mostly by telephone. If the outdoor burning is a particular activity or not an exempt activity, then the request is by letter.
6. What are the criteria for getting permission to burn?	The criteria varies. In general, the letter must contain date and time of the burning activity, material and amount to be burned, location and description of the surrounding area, and contact information for the responsible party. If further information is required, then an interview or site investigation is conducted.
7. Have operating agreements been established between the central authority and land managers?	No, there are no formal or informal agreements.

Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	The rules strictly prohibit outdoor burning in the state of Texas, however, exemptions do exist. Our agency provides technical advice to outdoor burning such as the use of permitted incinerators, mulching or composting of vegetative material, landfilling, and trench burning. The state provides small business assistance and technical assistance to individuals to examine various alternatives to outdoor burning, if feasible. Emissions are not tracked unless the permitted activity is required to submit an emissions inventory.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	Emissions from outdoor burning are not controlled, however, the general rules attempt to minimize the impact to sensitive receptors, e.g., residents. Impacts from the fires are strictly the responsibility of the responsible party. The rules do not exempt or waive any other rules. The responsible party is required to provide fire protection. Our agency does not provide any coordination for fire protection.
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	N/A
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	Not applicable. Prescribed burning performed in forestry management is under the jurisdiction of the forest service (federal or state).
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	For our region, esp. El Paso which is non-attainment for ozone. Burning cannot be conducted during "ozone action days" to minimize haze. During the winter months, the city of El Paso has authority to control burning (fireplace) with a "burn/no burn" requirement to minimize haze as a result of winter inversions.
13. Must the affected public be notified of planned fires? Please describe.	Not applicable. No large-scale burning is allowed in heavily populated areas. The only burning allowed are fire training, recreational (bon fires, grilling) and ceremonial fires.
14. Are contingency plans required to reduce	Not applicable.

exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	Not applicable. The city of El Paso has numerous continuous air monitoring stations (CAMS) monitoring for particulates, ozone, NOX, SOX, and CO/CO2. This monitoring is part of the state SIP. A haze monitoring project is underway, however, it is still in implementation phases for the City of El Paso and the Big Bend area. However, this haze project does not differentiate between permitted stationary sources, mobile sources and outdoor burning sources. Esp. for our border region which can not account for any influence from Mexico.
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	To my knowledge, no regional outdoor burning education programs have been implemented. Most of the education is done on a one-to-one basis through technical assistance publications, interviews and/or telephone conversations.
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	Only during special cases and when manpower is available, on-site inspections are sometimes made to insure the general rules are being complied with.
18. What penalties are authorized for non-compliance?	If unauthorized burning is discovered by an environmental investigator (our agency only) or referred to our agency, the compliance and enforcement takes a guided program. Depending on the severity of the action, the first step is a Notice of Violation. Continued or severe impact, then a Notice of Enforcement where fines are assessed. Those fines are determined by the enforcement coordinator and are not set fines. City and County enforcement are independent of our agency.
19. Are post-burn reports required? What information is required?	N/A

Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	N/A
21. What are the review criteria?	N/A
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	N/A
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	N/A
24. What additional smoke management requirements apply if the performance standards have been exceeded?	N/A
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	The state nuisance rules applies regardless of source. However, at least one complaint must be received and confirmed by an investigator for an outdoor burn activity to be described a nuisance.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	I believe so. This answer is better addressed by our Central Office in Austin, Texas.
27. How do the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	No, at least not by our agency. Other agencies with jurisdiction may assess a fee(s).
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the	No, there are no inventories maintained by the state on outdoor burning.

emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	N/A
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	N/A
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	Not applicable. Our agency does not regulate herbicide treatment by any means unless the herbicide “contaminates” the soil, water or air. Application of herbicides is under the scope of work by another agency, Texas Department of Agriculture.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	N/A

Appendix 17

State of Utah Survey Responses

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From communication with Utah DEQ, 5/10/02.

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

[1] Utah Smoke Management Plan, Revised March 23, 2000, at www.utahsmp.net

[2] Memorandum of Understanding (MOU) for Utah Smoke Management Plan and Emissions Inventory Development, March 30, 1999.

[3] Comments received from the Utah Division of Air Quality dated August 8, 2000.

Special Note:

- This survey was reviewed by the Utah Department of Environmental Quality. For more information, contact Greg Zschaechner, UDEQ, Division of Air Quality, 150 North 1950 West, Salt Lake City, UT, 84114-4820.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Smoke Program Coordinator is responsible for the daily operation and management of the SMP and is the decision making authority that provides the communication necessary to implement, after consulting with the Utah Division of Air Quality (DAQ), necessary burn approval or denial decisions. [1]• The DAQ is beginning the rule making process that will place a smoke management rule to govern the program.[3] DAQ now has a rule in place R307-204 that states that the executive secretary will issue approvals. This is delegated to the Smoke Program Coordinator to make these approvals and to keep the executive secretary informed on decisions.
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none">• A formal MOU is in place that is an agreement that voluntarily commits the signatories to abide by the SMP. [2]• The signatories of the MOU are: National Park Service, U.S. Bureau of Land Management, U.S. Forest Service, Utah Department of Environmental Quality– Division of Air Quality, Utah Department of Natural Resources, and U.S. Fish and Wildlife Service. [2]• We don't have any formal MOUs in place that establish procedures for regional coordination. But courtesy calls are made to adjacent states if any smoke impacts could occur from

	prescribed fires or WFURBs in Utah. [3]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Participation in the SMP is required for all signatories to the MOU and to landowners who use prescribed fire on lands where the DNR provides fire protection during the June-October fire season, with the exception of landowners burning less than 20 acres and are permitted through the DNR's Division of Forestry, Fire and State Lands. [1] • Utah is currently in the process of establishing smoke management rules. The proposed rules do not refer to the SMP, but the SMP still exists and provides supplemental information to reporting forms. Utah's open burning rules are not being revised. Therefore, land managers that are disposing of tree cuttings and slash due to harvesting operations are subject to R307-202-5, Permissible Burning– With Permit. [3] <p>Participation is now regulated by R307-204. The SMP becomes the operational guideline for R307-204.</p>
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The SMP covers prescribed fire, wildland fire used for resource benefits, and wildland fire. [1] • The SMP does not apply to agricultural outdoor burning and open burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Each year, land managers who prescribe burn more than 50 acres per year must submit the Utah Annual Burn Schedule to the Smoke Program Coordinator at the DAQ. [1] • Land managers are required to submit a Burn Request form to the Smoke Program Coordinator for approval by 1000 hours two business days before the beginning of the prescribed burn. The form must include: a) the three letter ID and project number consistent with the Utah Annual Burn Schedule; b) the date submitted and by whom; and c) the Burn Manager conducting the burn and phone numbers. [1] • Land managers burning prescribed fires covering up to 20 acres per day or resulting in air emissions of less than 0.5 tons of particulate matter (PM) per day (de minimis prescribed fires) are required to notify the Smoke Program Coordinator the morning of the burn. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Burn approval will be made using all available information regarding the prescribed burn, forecast meteorological conditions, and existing air quality. The criteria for making

	<p>burn approval decisions include, but are not limited to: a) analysis of emissions from prescribed fires in progress and residual emissions from prescribed fires on a daily basis; b) analysis of emissions from active wildland fire used for resource benefits and consideration of potential long-term emissions estimates; c) analysis of the emissions from wildland fires greater than 100 acres of timber, or 300 acres of brush; d) local burn conditions; e) fire prescription including smoke management considerations from the applicable Burn Plan; f) existing and predicted local air quality; g) local and synoptic meteorological conditions; h) type and location of areas to be burned; i) protection of the national visibility goal for Class I areas; j) minimization of smoke impacts in Class I areas, roads or highways, airports, areas that are nonattainment for PM or CO, or other smoke sensitive areas; k) protection of the NAAQS; l) and analysis of smoke transported from areas outside Utah. [1]</p> <ul style="list-style-type: none"> • For de minimis prescribed fires, ignition can only occur when the Weather Service Clearing Index is above 500. [1]
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<ul style="list-style-type: none"> • Since the central authority is the Smoke Program Coordinator that receives direction from the SMP, there is no need to have operating agreements other than stated in the SMP. [3] • The SMP does not set burner qualifications. Each agency sets their own qualifications. [3] • Smoke management training is available through courses taught regionally at NIFC and depending on need, locally arranged. [3]
Minimizing Air Pollutant Emissions	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<ul style="list-style-type: none"> • Land managers are encouraged in the SMP to implement emission reduction and dispersion techniques as feasible. Techniques are submitted in the Daily Emission Report. [3] • An incentive of using emission reduction is having additional opportunities to utilize an airshed for burning. [3] • Only the emission reduction technique used is tracked. [3]
<p>9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?</p>	<ul style="list-style-type: none"> • Each land manager conducting prescribed fires must implement as many emission reduction and dispersion techniques as feasible. The following emission reduction and dispersion techniques may be considered best smoke management practices: 1) reducing biomass and

	<p>providing information to the public on the adverse impacts of using green or wet wood as fuel; 2) burning in seasons characterized by meteorological conditions that allow for good smoke dispersion; 3) using mass ignition techniques; 4) igniting burns under good-to-excellent ventilation conditions and suspending operations under poor smoke dispersion conditions; 5) considering smoke impacts and residual smoke on activities conducted by local communities and land users; 6) burning only those wildland fuels essential to meet management objectives; 7) minimizing duff consumption, smoldering, and large wildland fuel consumption through wildland fuel moisture considerations; 8) minimizing dirt content when slash piles are constructed; 9) burning piles when other burns are not feasible, such as in snow or rain; 10) using opportunities that meet the burn prescription at all burn locations to spread smoke impacts over a broader time period and geographic area to minimize smoke impacts to protect public health, public safety, and visibility; 11) burning during optimum periods to prevent trapping smoke in inversions or diurnal wind flow patterns; 12) consolidating burning material to enhance wildland fuel consumption and to minimize smoke production; 13) implementing maintenance burning in periodic rotation mimicking natural fire cycles; 14) managing smoke impacts. [1]</p>
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Following a prescribed burn, land managers are required to submit a Daily Emission Report to the Smoke Program Coordinator which must include the emission reduction techniques used for the burn. [1] • This information is used for a year end statistical summary to demonstrate techniques used and their levels of success. [3]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Each year, land managers who prescribe burn more than 50 acres per year must submit the Utah Annual Burn Schedule to the Smoke Program Coordinator at the DAQ. [1] • The Utah Annual Burn Schedule must include: project number, project name, Air Quality Basin, location, de minimis category, total project acres, project elevation, major fuel model, type of burn (understory, broadcast, etc.), earliest burn date, burn duration, ignition method (helitorch, hand drip torch, etc.), and county. [1]

	<ul style="list-style-type: none"> • Prescribed fires covering more than 20 acres per day or producing emissions more than 0.5 tons of PM per day must submit the Pre-burn Information form to the Smoke Program Coordinator at least two weeks prior to the ignition window. [1] • The Pre-burn Information form must contain the following: a) the three-letter ID, project number, date submitted, name of person submitting the form, Burn Manager, and phone numbers; b) summary of burn objectives; c) Class I or Non-Attainment Area within 15 miles; d) sensitive receptors and distance/degrees from project site; e) planned mitigation methods (avoidance, dilution, emission reduction); f) smoke dispersion model used; g) estimated range of total PM anticipated; and h) optional information on loading and fuel moisture available. [1] • Written burn plans are required to be submitted for burns above the de minimis levels. Each agency has established requirements for burn plans. [3]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • All parties are committed to comply with the Clean Air Act and the best management practices available regarding emission production and reduction, and regional haze issues. [1] • The criteria for making prescribed burn approval decisions include, but are not limited to: protection of the national visibility goal for Class I areas; and minimization of smoke impacts in Class I areas, roads or highways, airports, areas that are nonattainment for PM or CO, or other smoke sensitive areas. [1] • Coordination with adjacent states along with taking into consideration on-going national fires and regional weather. [3]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Land managers and the DAQ are responsible for providing public notification and education related to the SMP, as needed. The public education and notification program will include smoke impacts from prescribed fires, wildland fire, and wildland fire used for resource benefits. [1].
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • If it is determined by the Smoke Program Coordinator that the prescribed fire, wildland fire used for resource benefits, and/or smoke transported from other locations is degrading air quality levels, the land manager will promptly initiate actions to reduce or eliminate smoke

	production by stopping ignition actions on existing prescribed fires and by curtailing additional prescribed or wildland fire used for resource benefits. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Land managers will monitor effects of a prescribed fire on smoke sensitive receptors, and visibility in Class I areas. Visual monitoring and documentation of the direction of the smoke plume may be performed using the Hourly Plume Observation Record form or an agency equivalent. [1] • Monitoring of nuisance complaints by the public should be noted and recorded in the project file. [1] • For large prescribed fires expected to last more than one day, or fires close to smoke sensitive receptors, locating real-time particulate matter monitors may be warranted to facilitate timely response to smoke impacts.[1]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Land managers and the DAQ are responsible for providing public notification and education related to the SMP, as needed. The public education and notification program will include smoke impacts from prescribed fires, wildland fire, and wildland fire used for resource benefits. [1] • Land managers and the DAQ are responsible for providing public notification and education on the role of prescribed fire and wildland fire used for resource benefits to accomplish land management objectives. [1]
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	• Land managers conducting a prescribed fire will permit DAQ staff to enter and inspect burn sites before, during and after burns to verify the accuracy of the permit or burn plan information and compliance with the burn plan, if appropriate. [1]
18. What penalties are authorized for non-compliance?	• Failure to comply with the procedures and conditions specified in the permit or burn plan may result in an enforcement action, such as, a cease and desist order. [1]
19. Are post-burn reports required? What information is required?	• By 8:00 A.M. the day following a prescribed burn, land managers are required to submit a Daily Emission Report to the Smoke Program

	Coordinator. The report will include the following: 1) the three letter ID and project number; 2) date submitted and by whom; 3) burn start date and end date with time; 4) emission information (black acres, tons fuel consumed per acre, tons particulate matter produced; 5) public interest regarding smoke; 6) daytime ventilation; 7) nighttime smoke behavior; 8) smoke management prescription or FIP/Resource Benefit Fire Plan met; 9) emission reduction techniques used; and 10) optional– dead and live fuel moisture information with average depth of fuels. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	• The Utah Airshed Group, which includes each signatory of the MOU, meets at least once a year to evaluate the effectiveness of the SMP. [1]
21. What are the review criteria?	• Criteria will be determined from elements of the SMP. [3]
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	• Areas of non-attainment are identified in the SMP in Appendix F by county lines. [3]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • As the smoke management program develops, performance standards will be established as levels of PM are categorized. [3] • An evaluation is made on the post-burn report, known as the Daily Emissions Report, regarding whether the smoke management prescription is met. The land manager provides a narrative on whether the smoke management prescription was met. [3]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	• No additional smoke management requirements are imposed, since the evaluation is made after the burn is conducted. But, the evaluation is made in order to improve the smoke management techniques. [3]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Salt Lake County has a regulation titled "Air Pollution Nuisance", that states that "No person shall cause or permit the discharge from any source whatsoever such quantities of air contaminants...which will cause a nuisance to any person or the public." [3] • Complaint calls received by the DAQ will be forwarded to the land manager. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the	• No the SMP is not part of the PM10 SIP. [3]

State's implementation plan (SIP)?	
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> Funding for the smoke program comes from contributed funds by agencies that have signed the MOU. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> The SMP will summarize total PM from the Daily Emissions Reports that are based on actual consumption. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	Not at this time. When these techniques can be quantified, then the reduced emissions will be quantified. [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	The SMP of Utah has been certified by the EPA on November 8, 1999. [3]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	Currently investigating.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	Currently investigating.

Appendix 18

State of Washington Survey Responses

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From communication with Washington Dept. of Natural Resources (DNR) 5/30/02

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

[1] Washington State Department of Natural Resources Smoke Management Plan. 1993, 1998.

*Note: Washington's smoke management data tracking system has three allowable methods, which are: (1) The DNR Local Area Network (LAN); (2) The USFS Smoke Management System (SMS); and (3) Fax machine. The LAN is used by the DNR for tracking of data from State and private burning on DNR-regulated lands. The SMS is maintained by the U.S. Forest Service for data tracking, and SMS data is combined with DNR data within the LAN system. Other participants covered by the SMP will enter their data into one of the three systems to be determined by the DNR and the individual participant on a case by case basis. [1]

[2] Washington Smoke Management Plan Summary. 1997.

[3] Comments received from the State of Washington, Department of Natural Resources dated August 23, 1999.

[4] Comments received from the State of Washington, Department of Ecology dated August 20, 1999.

[5] Comments received from the State of Washington, Department of Natural Resources dated July 14, 2000.

Special Note:

This survey was reviewed by the Washington Department of Natural Resources. For more information, contact Mark Gray, WDNR, 111 Washington Street S.E., P.O. Box 47000, Olympia, WA, 98504-7000.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Washington Department of Natural Resources (DNR) Region Managers are responsible for making burn/no burn decisions on lands that are protected by the DNR. [1]• The DNR's authority is for silvicultural burning on forest land receiving fire protection from DNR only. The Department of Ecology (DOE) should be consulted for information on regulatory authority on all other forms of burning. [3][5]• Federal land managers are responsible for making burn/ no burn decisions on lands not protected by the DNR.[1]• The DNR's Resource Protection Division, Smoke Management Section, must give smoke management approval before a Region or Land Manager can approve a burn. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in	<ul style="list-style-type: none">• Indian nations may choose to participate in the Washington State DNR Smoke Management Plan (SMP) through a written agreement with the DNR, which gives the Indian nations the advantage of statewide

place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<p>coordination with other silvicultural burners. No tribes have chosen to participate. [1][5]</p> <ul style="list-style-type: none"> • There are currently no tribes participating in the SMP. DNR coordinates wildland fire activities with the state of Oregon, and Federal land managers (including the Bureau of Indian Affairs) through the Oregon and Washington Wildland Fire Agreement. [3] • The DNR also has agreements with local authorities to coordinate regulations. [3] • The DNR does not formally coordinate with adjacent states or tribes as part of the SMP. Regional coordination occurs through the Pacific Northwest Wildfire Coordinating Group which includes tribal participation through the Bureau of Indian Affairs. Informal coordination is strongest with Oregon. [4]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Those who receive fire protection from the DNR must participate in the SMP. [1] • Federal agencies that do outdoor burning on forest lands must participate in and abide by the requirements of the DNR SMP. [1] • If a landowner has a proposal that does not conform to the SMP, the landowner may request an exception. [1] • The SMP applies on all state and most private and Federal lands. The SMP is optional on tribal forest lands. It does not apply to naturally-ignited, prescribed fires in wilderness areas or national parks. [4]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The SMP covers DNR-regulated forest land prescribed outdoor burning. [1] • The program does not apply to agricultural burning or outdoor burning on improved property. [4]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • A burn permit application form must first be completed and a permit must be issued by the DNR for all burns on lands protected by the DNR. For small fires, the permit application form itself is sufficient. For large fires, the application must also include: (1) A supplemental data sheet with pre-burn data; (2) Provisions for gathering and submitting post-burn data; and (3) A burn plan, if referenced on the face of the permit application. [1] • Large fires (\$100 tons of fuel) – Lands protected by the DNR: Pre-burn

	<p>data is entered into the smoke management tracking system*. On the afternoon before the burn, the Region Manager is responsible for screening, pre-authorizing, and prioritizing the burns submitted for the following day. On the day of the burn, the DNR Smoke Management Section posts a list of authorized burns for that day and the Region Manager makes the final decision about which burns receive final approval. [1]</p> <p>– Federal and participating tribal lands: Pre-burn data is entered into the smoke management tracking system*. On the afternoon before the burn, the Land Manager is responsible for pre-screening and prioritizing the burns submitted for the following day. On the day of the burn, the DNR Smoke Management Section contacts the Land Manager about burns that are approved and the Land Manager makes the final approval for burning. [1]</p> <p>– The DNR tells the land manager yes or no on the day of the burn, and the land manager has no choice unless the DNR says it is OK for that day. [4]</p> <p>• Small fires– All persons who propose to burn small fires must first call a burn hotline and follow the instructions that apply for the day and location of the proposed burning. [1]</p>
6. What are the criteria for getting permission to burn?	<p>• No fire shall be ignited when the DOE has declared an air pollution episode for the geographic area pursuant to chapter 173-435 WAC; or the DOE or a local air pollution control authority has declared impaired air quality for the geographic area in which the burning is to be done. [4]</p> <p>• The following criteria are from WAC 332-24-205 (Washington Smoke Management Plan Appendix 15): silvicultural burning is not allowed within nonattainment areas of the state as established by Washington Department of Ecology for particulate matter ten microns or less or carbon monoxide, except for: (a) fires for improving and maintaining fire dependent ecosystems; (b) fires for training wildland fire fighters; (c) fires set for a defined research project; (d) military training exercises; (e) the exclusive purpose of managing storm or flood related debris; or (f) where exempted by local or state air pollution control agencies. [4]</p> <p>• Large fires– Burns will not be approved if: (1) There is a likelihood of a</p>

	<p>smoke intrusion into designated areas;</p> <p>(2) There is any likelihood of an over-flight of smoke above a designated area or special public events (but overflights of smoke may be approved over designated areas on days when visibility would be reduced naturally); (3) Burning will not comply with the SIP of the CAA regarding visibility protection of Class I federal areas; (4) Any state or federal air quality regulations, laws, or rules would be violated; (5) Burning on state and private lands does not meet the requirements of Washington State's Forest Practice Rules and Regulations relating to threatened or endangered species protection; (6) Burning will cause mandatory emission reduction levels to be exceeded; (7) Burning will knowingly violate another state's published air quality standards; (8) Smoke will not significantly disperse within eight hours of ignition, and be fully dispersed by 12:00 pm the next afternoon unless it is a multiple day burn. Large fires are also not allowed during certain times of the year. [1]</p> <ul style="list-style-type: none"> • Multiple day burns – Burns will be approved following the criteria for approving large burns. Additionally, three months before the burn the landowner must give the DNR sufficient burn plan information. [1] • Small fires– A burn hotline provides a message that either allows burning or suspends burning during instances of poor air quality and high fire danger. The burn or no burn hotline message for air quality is determined from input about air pollution episodes and impaired air conditions gathered from the Department of Ecology. [1][4] • Silvicultural burning is not allowed inside urban growth areas as designated under growth management plans, or in cities of greater than ten thousand population as follows: (a) in urban growth areas where reasonable alternatives exist; (b) in cities with a population of ten thousand or more as established by the office of financial management: (i) that exceed or threaten to exceed federal or state ambient air quality standards; and (ii) where reasonable alternatives to outdoor burning exist, in accordance with WAC 173-425-090; (c) after December 31, 2000, burning shall not be allowed in urban growth areas or cities with a population of ten thousand or more. [4]
7. Have operating agreements been established	<ul style="list-style-type: none"> • Federal agencies that do outdoor burning on forest lands must

<p>between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<p>participate in and abide by the requirements of the DNR SMP. [1]</p> <ul style="list-style-type: none"> • Indian nations may choose to participate in the SMP through a written agreement with the DNR. [1] • The Oregon and Washington wildland Fire Agreement, entered into by the States of Oregon and Washington, and the Federal land managers, addresses all aspects of wildland fire. [3] • The DNR, in conjunction with the USFS, will provide training in the operation of computer models that allow burners to analyze proposed burns and prepare burning prescriptions that will produce minimum emissions. [1]
<p><i>Minimizing Air Pollutant Emissions</i></p>	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<ul style="list-style-type: none"> • The SMP requires DNR Region Managers to consider the availability and feasibility of burning alternatives during the permit issuance and burn approval process. [1] • As part of its obligation to encourage alternatives to burning, the DNR will: (1) Gather and distribute information about burning alternatives; (2) Cooperate with alternative disposal industries by bringing together industrial landowners and disposal industries; (3) Consult with local government agencies to determine the availability and cost of legal dumping at approved sites. [1] • Appendix 14 of the SMP contains an extensive discussion of alternative debris disposal techniques described under the following headings: (1) Alternative mechanical treatments; (2) Increased utilization; (3) Chemical; (4) Manual; and (5) No treatment. [1] • The DNR encourages landowners to use alternatives to burning through its Backyard Forest Stewardship program. In Spokane County (the most fire prone area of the state) DNR works in partnership with local fire agencies and business through Fire Safe Spokane Inc. (A 501c3 non-profit corporation) to encourage homeowners to take actions to reduce the risk of wildfire using alternatives to burning. [3] • Emission reductions are tracked by the DNR. The tracking system* includes: mandatory reporting of completed burns, a summary of emissions created by each plan participant, calculation of emissions, and the annual total of emissions produced compared to the targets. [1]

	<ul style="list-style-type: none"> • The SMP establishes emission reduction goals based on a calculated emissions baseline. The goal is to reduce burning emissions by 20 percent from 1984 - 1989 baseline levels by December 31, 1994 and then reduce burning emissions by 50 percent from 1984 - 1989 baseline levels by December 31, 2000. [1][5] • The modeling system used to generate the baseline numbers and to calculate and track future emissions is called SMS-INFO. [1]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The DNR encourages burners to use techniques such as fans, crane piling, mass ignition, and accelerated mop-up to reduce the amount of visible smoke produced during burning. [1] • Burn permit approval must consider techniques, and favors pile burning over broadcast burning. [4]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The SMP does not require the actions taken to minimize emissions to be documented, but it does require that the DNR collects burning data from all participants in order to track progress toward the emission reduction targets. This tracking system* includes a summary of emissions created by each plan participant and calculation of emissions. [1] • Burning permits are a form of documentation of actions to minimize emissions before and during fires. Permits can require certain burning techniques in areas close to homes such as crane piling, fans, and mass ignition which minimize emissions. The FLMs do not submit permits to the DNR, but must submit the same pre-burn and postburn data forms required for other land managers into a computer database. "Pile type" and "ignition method" on these forms help document emissions or potential emission reductions. [4]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • A written burn plan is required for State and private burns that will consume 100 tons and greater (large fires) in a 24 hour period, and for all burning that requires reporting by other Land Managers. The burn plan must be referenced on the face of a burning permit, which is required for burning on DNR-protected lands, and becomes part of the permit conditions. [1] • The burn plan must provide pre-burn data including the permit number,

	<p>DNR region, burn type, type of landowner, specific location information, property owner's name, reason to burn, size of unit, and predominant species. [1]</p> <ul style="list-style-type: none"> • Further pre-burn information must be provided for pile/landing or broadcast/underburn burns. For pile/landing burns, this includes pile/landing tons, pile calculation method, and pile type. For broadcast/underburn burns, this includes loading method, duff depth, slope, cut date, snow off date, and ignition method. [1] • Post-burn data must also be provided. The date burned, ignition time, and actual acres burned must be provided for all burns. Consumed pile tons and consumed landing tons must be provided for pile/landing burns. And for broadcast/ underburn burns, ignition duration, weather data, number of days since significant rainfall, wind speed, fuel moisture, and 1000 hour method information must be provided. [1]
<p>12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"</p>	<ul style="list-style-type: none"> • The SMP general burning requirements state: (1) Smoke from burning must not obscure visibility on public roads and highways; and (2) Smoke from burning must not cause a nuisance, which exists when emissions from any open fire causes physical discomfort or health problems to people residing in the vicinity of the burning or physical damage to property. [1] • Large burn approvals will include consideration of dispersal criteria and objectives. The Smoke Management Section predicts large scale dispersion potential and Regions include local knowledge of inversion and local dispersal patterns for individual burn sites. [1] • National Weather Service meteorologists provide synoptic weather patterns and air stagnation advisories and an Ecology meteorologist makes air quality assessments and predictions based on air quality monitoring and weather data and can prohibit all burning when air quality is impaired. When air quality is adequate, the DNR meteorologist evaluates smoke dispersion conditions based on atmospheric stability, mixing height, and transport winds in addition to local knowledge of wind and weather patterns and best professional judgement from past experiences. [4][5] • Provisions in the SMP for making reasonable progress toward the

	<p>national visibility goal include: reduced particulate emissions due to mandatory emission reductions; restricted burning during poor air quality days; increased use of alternative methods of debris disposal; and increased use of pile burning techniques. [1]</p> <ul style="list-style-type: none"> • Multiple day burns between June 15 and October 1 in eastern Washington may be approved by the land manager if specific criteria are met, including land manager certification to the DOE that smoke impacts to Class I areas can be avoided and such consideration is included in the prescription for the burn. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • If the DNR determines that a multiple day burn has the potential to affect communities, the landowner must notify the public of the burn at least one week before they plan to burn. The notification must be published in local newspapers, and may be a paid advertisement, press release, or public service announcement. The notice will list the location, size, and duration of the burn. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • The SMP does not discuss contingency plans for smoke intrusions. The SMP does state that DNR Region Managers are responsible for reporting and documenting where and when smoke intrusions occur, and must react to citizen complaints about smoke nuisances. A Smoke Intrusion Report must be submitted by the Region Manager to allow for a post-incident evaluation whenever smoke intrusion duration exceeds 30 minutes or if the Region Manager determines the smoke impact on the public warrants submission of the report. [1]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Monitoring air quality impacts of fires is the responsibility of the DOE.[3]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find	<ul style="list-style-type: none"> • The SMP establishes an education and awareness program to inform small landowners and the general public about burning regulations and emission reduction techniques. DNR field representatives are the center of this effort through daily contact with the public and small landowners

more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	<p>while writing burning permits. [1]</p> <ul style="list-style-type: none"> • DNR field representatives will provide written information about rules and regulations, provide on-site training sessions about safe and efficient burning techniques, and answer questions. [1] • Region office staff will answer general inquiries or direct questions to field staff for follow-up action. They will also initiate contacts with local news media to generate feature stories about the burning program and regulations. The Regions will also include information about burning in displays used at public gatherings. [1] • The DNR will provide press releases and public service announcements, and distribute them to all media outlets. The DNR will also coordinate with other agencies' public affairs offices. [1] • The Resource Protection Division will develop brochures and other printed materials to be used by the Region offices. It will also seek sponsors to distribute information materials supplied to them by the DNR. [1]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • DNR Region Managers are responsible for ensuring that field enforcement is conducted and consistently applied. After contact with a permit applicant, it may be determined that a site inspection is necessary before issuing the permit. Also, prior to burning, Regions will audit 5 percent of the burn sites that did not receive a site inspection. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Authorized penalties for non-compliance include refusal to issue future burning permits, and fines. [1] • Any person burning on forest land without complying with chapter DNR outdoor burning rules is in violation of the forest protection statute and the state clean air act. Convictions or bail forfeitures in connection with illegal burning under DNR outdoor burning rules may result in refusal to issue further permits for a two-year period from the date of the illegal burning. In addition to any other fines and penalties that may be imposed, the department may charge and recover costs from the person responsible for any response to control or extinguish an illegal fire caused in part or in whole by negligent acts or omissions. [3]
19. Are post-burn reports required? What	<ul style="list-style-type: none"> • Post-burn data must be provided as part of a written burn plan. The

information is required?	date burned, ignition time, and actual acres burned must be provided for all burns. Consumed pile tons and consumed landing tons must be provided for pile/landing burns. And for broadcast/underburn burns, ignition duration, weather data, number of days since significant rainfall, wind speed, fuel moisture, and 1000 hour method information must be provided. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • All or portions of the SMP may be further reviewed or updated as warranted. [1] • The 1993 version was reviewed after five years. A review is scheduled for 2000. [3][4]
21. What are the review criteria?	<ul style="list-style-type: none"> • General plan revisions will adopt the same procedure as used for initial adoption. The plan must be developed by DNR in consultation with the department of ecology, public and private landowners involved in silvicultural burning, and members of the public. [3][5]
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The SMP establishes "designated areas" and "sensitive areas". [1] • Designated areas are established under the responsibility of the Department of Ecology and are defined as critical areas that are otherwise subject to air pollution from other sources. Sensitive areas are defined as areas of heavy recreational use and population centers outside designated areas. [1] • Large burns will not be approved if there is a likelihood of a smoke intrusion into designated or sensitive areas. [1] • See comments on question no. 6. [3]
23. Does the program establish any performance standards"? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The SMP establishes emission reduction goals based on a calculated emissions baseline. The goal is to reduce burning emissions by 20 percent from 1985 - 1989 baseline levels by December 31, 1994 and then reduce burning emissions by 50 percent from 1985 - 1989 baseline levels by December 31, 2000. [1][5] • The goal is to reduce forest burning emissions other than forest health burning emissions (which are exempted from the emissions caps, but not from the nuisance, visibility, or public health requirements). [4]
24. What additional smoke management	<ul style="list-style-type: none"> • The 1994 target levels have been met (A 50% reduction target has

requirements apply if the performance standards have been exceeded?	been met every year since 1993). If the 2000 emission reductions are not met, the Department must immediately limit burning that is not for forest health purposes. If necessary, this will be done by implementing a mandatory emissions allocation system. [1][2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • If a fire creates a nuisance from smoke or flying ash, it must be extinguished. For purposes of this section, a nuisance exists when emissions from any open fire cause physical discomfort or health problems to people residing in the vicinity of the burning or physical damage to property. [3] • Smoke from burning must not cause a nuisance as defined in WAC 332-24-205 (8), as part of minimum requirements for all burning regulated by the DNR. If the fire creates a nuisance from smoke or flying ash, it must be extinguished. A nuisance exists when emissions from any open fire cause physical discomfort or health problems to people residing in the vicinity of the burning, or physical damage to property. [4]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Yes, the SMP is part of the SIP. [3] [4]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • DNR's outdoor burning program is funded through the state general fund, fire protection assessments on forest land, and burning permit fees. Fees for silvicultural burning are assessed on estimated consumed tons. [3] • The state legislature appropriates funds to the DNR for administration and enforcement of the SMP. Funds are appropriated from the state General Fund, the Air Pollution Control Account, and from property taxes (forest protection assessment). Fees assessed for burning are deposited into the Air Pollution Control Account. Only about 30% of the money needed to administer the SMP and the inseparable outdoor burning regulation program is currently recovered by burning permits. [4]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel	<ul style="list-style-type: none"> • The DNR maintains an annual emissions inventory on silvicultural burning. [3] • The DNR maintains an annual air pollutant emissions inventory based on pre-burn and post-burn reports. Preburn data include fuel type, fuel loading, duff depth, and county. The post-burn report includes weather,

consumed, etc.)?	fuel moisture, actual acres burned, and estimated tonnage consumed. This inventory is sent to the Department of Ecology. [4]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No mechanism exists to estimate the emission reduction achieved through not burning. [3] • Air pollution emissions are calculated and recorded in terms of an annual total of PM-10 emissions produced. These forest burning emission records measure statewide compliance with mandated emission reduction goals in the SMP based on a calculated emissions baseline. A 50% emission reduction from this baseline is required by December 31, 2000. This becomes the ceiling level for all future annual emission totals. Annual totals do not currently include tribal forest land or wildfire emissions. Forest-health burning in eastern Washington is exempt from the emissions reduction ceiling. [4]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	DNR will determine the feasibility of certifying the SMP when the plan is reviewed in 2000. [5]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	The Washington Forest Practices Act addresses the aerial application of herbicides on forest land.
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	No.

Appendix 19

State of Wyoming Survey Responses

Template of Questions from "Wildland Smoke Management Program Survey, Western Governor's Association, Contract No. 30202-11,"

EC/R Incorporated - January 26, 2001

From Communication with Wyoming Dept. of Environmental Quality (DEQ), 6/4/02

Smoke Management Program Components Regarding Vegetative Management

Source of summary information:

- [1] Wyoming Air Quality Standards and Regulations, Chapter 10, Section 2, Open burning restrictions.
- [2] Personal communication, B. Bauer, EC/R to Mark Arn, WDEQ-AQD, 307-777-7758, October, 27, 1998.
- [3] Comments received from the Wyoming Department of Environmental Quality dated August 20, 1999.
- [4] Comments received from the Wyoming Department of Environmental Quality dated July 24, 2000.
- [5] Comments received from the Wyoming Department of Environmental Quality dated June 4, 2002.

Special Note:

This survey was reviewed by the Wyoming Air Quality Division. For more information, contact Darla Potter, WAQD, 122 West 25th Street, Herschler Building, 4 West, Cheyenne, WY, 82002

Note: Chapter 10, Section 2 was previously Wyoming Air Quality Standards and Regulations Section 13 Open burning restrictions. The entire set of Wyoming Air Quality Regulations were restructured from one chapter into thirteen chapters as of October 29, 1999. The Division did not make any changes or additions in the content of the existing regulations beyond basic introductions and cosmetic changes to newly organized chapters.

Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Wyoming Air Quality Division (AQD) approves applications and issues burn permits for proposed open burning of trade wastes only. The regulations do not contain a definition of trade wastes. [1][3]• Burn permits request notification at least 24 hours prior to each burn. [3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none">• The application for open burning of trade wastes must provide evidence that the proposed open burning project has been approved by the fire department which has jurisdiction in the burn area. [1]• There is no regional coordination initiated by the Wyoming Air Quality Division on a routine basis. [4]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none">• Wyoming has not yet developed a Smoke Management Program; anticipates development in 2003 [5].• The regulations do not discuss a formal smoke management program. The regulations outline the restrictions and requirements for open burning. [1]• There are no requirements outside of Chapter 10, Section 2 for

	burners. [4]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The regulations provide restrictions and requirements for open burning of trade wastes and open burning of plant and forestry wastes. [1] • The open burning of plant life grown on the premises in the course of any agricultural or forestry operation may be permitted when it can be shown that such open burning is necessary and that no fire hazard or public nuisance will occur. [1] In practice, this has been applied to forestry and rangeland operations but not agricultural operations. [3]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • For open burning of trade wastes, burners must file an application request with the AQD. Upon issuance of a burn permit by the AQD, the person may proceed with the operation under the modeled conditions with due consideration of the permit conditions. [1][3] • AQD burn permits typically contain three conditions for the applicant to consider during the prescribed burn. Those three conditions are: 1) Burning must be conducted during meteorological conditions for which the air quality analyses indicate compliance with ambient standards. Such burning should occur during periods of maximum dispersion, normally from mid-morning to late afternoon. 2) Impacts to the air quality related values such as visibility must be considered in nearby Class I areas during prescribed burning activities, with additional consideration given to the time of year related to Class I visitor usage. 3) although there are no special considerations directly applicable to nearby communities and towns, ambient standards must be maintained and burning can only be permitted if no public nuisance will occur. [3] • Open burning of plant and forestry wastes is permitted when it can be shown that the open burning is necessary and that no fire hazard or public nuisance will occur. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • For open burning of trade wastes, an application must be approved by the AQD. The application must include the following information: 1) name, address, phone# of person submitting application, 2) Type of business or activity involved, 3) description of proposed equipment and operating practices; type, quantity and composition of waste to be burned; and expected composition and amount of air contaminants to be

	<p>released into the atmosphere (Government agencies submit SASEM run, 4) schedule of burning operations, 5) exact location of burning operations, 6) reasons why no method other than open burning can be used for disposal, and 7) evidence that the proposed open burning has been approved by any fire department which may have jurisdiction. [3]</p> <ul style="list-style-type: none"> • The criteria used by the AQD to approve or disapprove an application and issue a burn permit are not described in the regulations. [1] • For open burning of plant and forestry wastes, it must be shown that the burn is necessary and that no fire hazard or public nuisance will occur. The regulations provide no further detail regarding how an applicant would show that a nuisance will not occur. [1]
<p>7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?</p>	<ul style="list-style-type: none"> • Operating agreements are not required as compliance with the regulation is not an option [3][4] • There are no requirements for burner qualifications and no smoke management training is made available by the Wyoming Air Quality Division. [4]
<i>Minimizing Air Pollutant Emissions</i>	
<p>8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?</p>	<ul style="list-style-type: none"> • Reasons why no method other than open burning can be used for disposal, must be included in the application for open burning of trade wastes. [1] • There are no incentives or disincentives for the use of alternatives to burning and emission reduction techniques. [4] • Emission reductions are not tracked. [4]
<p>9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?</p>	<ul style="list-style-type: none"> • No actions to minimize emissions are required by the regulation. [3][4] • AQD burn permits typically contain three conditions for the applicant to consider during the prescribed burn. The conditions refer to the consideration of impacts but do not dictate actions required to minimize impacts. <p>Those three conditions are: 1) Burning must be conducted during meteorological conditions for which the air quality analyses indicate compliance with ambient standards. Such burning should occur during periods of maximum dispersion, normally from mid-morning to late afternoon. 2) Impacts to the air quality related values such as visibility must be considered in nearby Class I areas during prescribed burning</p>

	activities, with additional consideration given to the time of year related to Class I visitor usage. 3) Although there are no special considerations directly applicable to nearby communities and towns, ambient standards must be maintained and burning can only be permitted if no public nuisance will occur. [4]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • No. [3]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Upon issuance of a burn permit by the AQD, the person may proceed with the operation under the modeled conditions with due consideration of the permit conditions. [3] • Burners must file an application request with the AQD which must include the following: (1) The name, address and telephone number of the person submitting the application, (2) The type of business or activity involved, (3) A description of the proposed equipment and operating practices, the type, quantity, and composition of wastes to be burned, and the expected composition and amount of air contaminants to be released into the atmosphere, (4) The schedule of burning operations, (5) The exact location where open burning will be used to dispose of the waste, (6) Reasons why no method other than open burning can be used for disposal, and (7) evidence that the proposed open burning has been approved by any fire department which may have jurisdiction. Upon approval of the application by the AQD, the person may proceed with the operation without being in violation of the regulations. [1] • Open burning of plant and forestry wastes is permitted when it can be shown that the open burning is necessary and that no fire hazard or public nuisance will occur. No written burn plan is required. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • The regulations do not discuss if or how smoke dispersion conditions must be evaluated. [1] • AQD burn permits typically contain the following conditions for the applicant to consider during the prescribed burn: 1) Burning must be conducted during meteorological conditions for which the air quality analyses indicate compliance with ambient standards. Such burning

	<p>should occur during period of maximum dispersion, normally from mid-morning to late afternoon. [3]</p> <ul style="list-style-type: none"> • Government agencies must submit a SASEM run with the burn application. The burn permit then states "The Division has reviewed the SASEM results included with you request and hereby grants permission to conduct the requested burn under the modeled conditions which predict no violation of the ambient standards with due consideration of the permit conditions listed above." [3] • No accounting for visibility impairments or regional haze are required by the regulation. [4] • AQD burn permits typically contain the following condition for the applicant to consider during the prescribed burn: 1) Impacts to the air quality related values such as visibility must be considered in nearby Class I areas during prescribed burning activities, with additional consideration given to the time of year related to Class I visitor usage. [4] • The state anticipates developing a SMP in conjunction with the regional haze SIP depending on recent court proceedings (May 2002) regarding regional haze. Until then, no SMP is anticipated to be developed until well into 2003[5].
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • The regulations do not discuss if the affected public must be notified when fires are authorized. [1] • The fire department that has jurisdiction in the area must be notified. [3]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • No. [3] • AQD burn permits typically contain the following conditions for the applicant to consider during the prescribed burn: "Although there are no special considerations directly applicable to nearby communities and towns, ambient standards must be maintained and burning can only be permitted if no public nuisance will occur". [3]
15. Must the air quality impacts of fires monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • While the regulations do not specifically discuss monitoring, the application for open burning of trade wastes requires that the applicant provide the expected composition and amount of air contaminants to be released into the atmosphere. [1] • No monitoring required. [3]

Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public developing your SMP? What is done on an ongoing basis?	• No. [3]
Surveillance and Enforcement	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	• The regulations do not discuss any actions that can be taken by the AQD to monitor compliance with the smoke management program. [1]
18. What penalties are authorized for non-compliance?	• The regulations do not discuss penalties for non-compliance. [1]
19. Are post-burn reports required? What information is required?	• The burn permits request that a burn completion report be submitted to the AQD. The AQD requests at a minimum: 1) agency name and burn name (as listed on permit), 2) location of burning operations, 3) date burned, and 4) percent burned. [3]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	• No. [3]
21. What are the review criteria?	Not applicable (see question 20). [3]
Optional Air Quality Protection	
22. Does the program establish any special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The regulations do not specifically discuss any special protection zones; however, the open burning of plant and forestry wastes must show that no public nuisance will occur. [1] • AQD burn permits typically contain the following conditions for the applicant to consider burning the prescribed burn: 1) impacts to the air quality related values such as visibility must be considered in nearby Class I areas during prescribed burning activities, with additional consideration given to the time of year related to Class I visitor usage, and 2) although there are no special considerations directly applicable to nearby communities and towns, ambient standards must be maintained

	and burning can only be permitted if no public nuisance will occur. [3]
23. Does the program establish any performance standards? What are performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • No. [3]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Not applicable (see question 23). [3]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The regulation states that the open burning of plant and forestry wastes must show that no public nuisance will occur. [3] • Burn permits typically contain a condition which states "...burning can only be permitted if no public nuisance will occur." [3] • No criteria have been established to define a nuisance. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • The Open Burning Regulation is part of the SIP. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Processing of burn permit requests is funded via a program budget. No fees are assessed to burners. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The division tracks 1) agency name and burn site name, 2) date permit request submitted, 3) date permit issued, 4) number of acres (or piles) to be burned, 5) location, 6) fuel type, 7) burn schedule, 8) particulate emissions, and 9) contact name and phone. All of this information is based on the application as submitted to the Division. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No [3].
30. Are you planning to certify your SMP to the	<ul style="list-style-type: none"> • Wyoming has not yet developed a Smoke Management Program and

EPA? If so, what is your time line?	does not intend to certify Chapter 10, Section 2 to the EPA as a certified Smoke Management Program. [4]
<i>Herbicide Application and Other Vegetative Management Treatment Requirements</i>	
31. Do any requirements exist regarding aerial application of herbicides? Are there any policies or regulations protecting air quality regarding aerial or ground application of herbicides? Are there any air quality regulations on burning previously treated vegetation with herbicides?	• No [5].
32. Do any air quality requirements exist regarding biological, manual, or other chemical treatments for vegetative management (i.e. harvester, cutting, mowing, chainsaws, livestock grazing for vegetative management, or other chemical treatments)?	• No [5].

Appendix 20

**Tribal Smoke Management Plan Gathering Effort
Report,
Institute for Tribal Environmental Professionals**

Tribal Smoke Management Plan Gathering Effort Report

January 24, 2003

Prepared for:

The Fire Emission Joint Forum of the Western Regional Air Partnership

Prepared by:

Institute for Tribal Environmental Professionals
Northern Arizona University
Flagstaff, Arizona

Introduction

During the years 2000 and 2001, the Institute for Tribal Environmental Professionals (ITEP) was contracted by the Tribal Data Development Working Group (TDDWG) of the Western Regional Air Partnership (WRAP) to conduct a data gathering effort among the tribes of the western region of the United States. ITEP contacted tribal professionals by phone from the summer of 2000 through March of 2001, and solicited answers to a variety of questions, ranging from emission inventory efforts to interest in renewable energy sources. The results of this effort were compiled in "An Assessment of Tribal Air Quality Data and Programs in the Western United States", published for the WRAP in August, 2001.

One portion of this assessment focused on smoke management activities involving wildland, range, and agricultural burning on tribal lands. At the time of the assessment, fifteen tribes stated that they possessed smoke management plans (SMPs). The WRAP's Fire Emission Joint Forum (FEJF) contracted ITEP to contact these tribes and collect copies of their SMPs. ITEP began this project during the summer of 2002.

Methodology

In June of 2002, ITEP staff sent a letter of explanation (Appendix A), data release form (Appendix B), and the official FEJF story line to the 15 tribes that stated they possessed an SMP on the 2000 survey. On August 20, 2002, ITEP staff began to contact these tribes by phone and, when possible, email. This task was assigned to ITEP research specialist, Todd Barnell.

The initial contact in each case was the individual who had answered the questions relating to smoke management on the 2000-2001 assessment. In each case the research specialist identified himself as a staff member of ITEP, working on behalf of the WRAP. He first asked if they had received the packet of information mailed in June. If the answer was in the affirmative, he then asked if they would be willing to provide a copy of their SMP so that ITEP might make it available to the WRAP and other tribes.

If the representative was agreeable to providing a copy of the SMP, the research specialist asked that they mail a copy, along with the signed data release form, to ITEP. This copy would then be added to ITEP's clearinghouse and a copy would be provided to the FEJF. Attempts to contact all relevant tribes by phone and email were made from August 20 through November 20, 2002.

Results

Following is a table detailing the results of this project.

Tribe	City/State	Contact Name and Phone #	Contact History	Result
Coeur D'Alene Tribe	Plummer, ID	Lester Higgins 208-686-8101	Received their SMP unsolicited.	This tribe did not mention they had an SMP on the 2000 survey. They learned ITEP was collecting them and sent a copy of their plan to us, along with release form.
Confederated Tribes of the Umatilla Indian Reservation	Pendleton, OR	John Cox 541-966-2410	Spoke with him on August 20. Said he would put a copy in the mail. Left a reminder on October 10. Called on November 15; faxed a copy that day.	They do not have a SMP. They use a short protocol developed by staff of Umatilla County. A copy was sent to ITEP.

Spokane Tribe of Indians	Wellpinit, WA	Jon Castillo 509-258-9042	Left a message on August 20.	He emailed me a four-step protocol they use. They do not have a SMP.
Navajo Nation	Fort Defiance, AZ	Wilson Laughter 928-871-7188	Left a message on August 20. He called back on August 22 and told me they use a BIA SMP. I called the person he suggested on the same day (Daryl Martinez). Left a message. Spoke with Daryl on September 4.	Daryl emailed a copy of their draft SMP on November 15. This document is a work in progress. He asked if ITEP would look it over. This was done and we also provided him with information about FEJF and SMP creation.
Confederated Salish & Kootenai Tribes	Pablo, MT	Randy Ashley 406-675-2700	Spoke with him on August 20. Said he would try and find a copy and mail it. Emailed him a reminder on October 10. No response. Spoke with him on November 15.	Their SMP is under legal review and he is not sure when it will be available.
Nez Perce Tribe	Lapwai, ID	John Degroot 208-843-7328	Spoke with him on October 21.	This tribe did not mention they had a SMP on the 2000 survey. However, a WRAP member suggested we contact them. They do not possess a SMP.
Fort Belknap Indian Community	Harlem, MT	Ina Nez Perce 406-353-8429	Spoke with her on August 20.	They do not possess a SMP.
Northern Cheyenne Tribe	Lame Deer, MT	Jay Littlewolf 406-477-6503	Spoke with him on August 20.	They do not possess a SMP.
Tule River Indian Tribe	Porterville, CA	Kerri Vera 559-781-4271	Spoke with her on August 30.	They do not possess a SMP.
Confederated Tribes of the Chehalis Reservation	Oakville, WA	Raman Iyer 360-273-5911	Left messages on his voice mail on August 20. Emailed him on September 3. Left another phone message November 20.	No response.
White Mountain Apache Tribe	White River, AZ	Asa Lavender 928-338-4346	Three calls made during August, but voice mail was not working. Spoke with him in September. He suggested we speak with Molly Pitts at Tribal Forestry. Tried calling several times during October but her voice mail was either full or not working. Attempted to send an email but her account is down.	Unable to make contact with appropriate person.
Upper Skagit Indian Tribe	Sedro Wooley, WA	Joe Hemmerich 360-854-7000	Left three messages during August and September with co-workers and on his voice mail.	No response.
Southern Ute Indian Tribe	Ignacio, CO	Virgil Frazier 970-563-0135	Messages left August 20, August 30, September 4, and October 12.	No response.
Ute Indian Tribe of the Uintah & Ouray Reservation	Fort Duchesne, UT	Ed Kurip 435-722-3965	Tried calling several times in late August – no response and no voice mail. Spoke with his co-worker (Lelilah Longhair) on September 4. Does not remember seeing the packet. Asked that we email her the information. Emailed a reminder on October 10 and left phone message on November 15.	Information was emailed as requested on September 4. No further response.
Blackfeet Tribe	Browning, MT	Tony Sinclair 406-338-7421	Left a message on August 20. Spoke with him on September 4. He does not remember the packet. Asked that we send him another one. Left reminders on October 10 and November 15.	A second package was mailed to him on September 4. No further response.

San Carlos Apache Tribe	San Carlos, AZ	Jim Brown 928-475-2218	Original contact sent information to a second person, who in turn passed it along to Mr. Brown. Spoke with him on August 20. They do not have a plan, but he agreed to share their protocol. Asked that we email him the release form. Reminder emailed on October 10. Left a phone message on November 15.	No further response and no protocol received.
Picayune Rancheria of Chukchansi Indians	Coarsegold CA	Samuel Elizondo 559-683-6633	Spoke with him on August 20. Thought he had already sent it. Emailed a reminder on October 10. Left a message on November 15.	No further response and no SMP received.

By November 30, 2002 ITEP received one complete SMP (from the Coeur D'Alene Tribe), one SMP developed by a county government (from the Confederated Tribes of the Umatilla Indian Reservation), a four-step protocol (from the Spokane Tribe of Indians), and one draft SMP (from the Bureau of Indian Affairs (BIA), Navajo office).

The Navajo BIA draft copy is a work in progress. However, the BIA staff working on this SMP requested that ITEP review their draft document. ITEP reviewed the SMP, comparing it to the guidelines in "Wildland Fire: Elements of a Basic Smoke Management Plan, July 10, 2001 Draft", prepared by the FEJF, and gave them additional information about the FEJF and the SMP guidelines found on the FEJF website.

Of the remaining tribes, one reported that they do have a SMP, but it is under legal review and will not be available in the foreseeable future (Confederated Salish & Kootenai Tribes). Four tribes reported that they do not possess a SMP (Nez Perce Tribe, Fort Belknap Indian Community, Northern Cheyenne Tribe, and Tule River Indian Tribe). No response was garnered from eight tribes (Confederated Tribes of the Chehalis Tribes, White Mountain Apache Tribe, Upper Skagit Indian Tribe, Southern Ute Indian Tribe, Ute Indian Tribe of the Uintah and Ouray Reservation, Blackfeet Tribe, San Carlos Apache Tribe, and Picayune Rancheria of Chukchansi Indians).

Conclusion

In the TDDWG's 2000-2001 assessment, fifteen tribes stated that they had SMPs. Two additional tribes were contacted based on ITEP's knowledge of their fire activities. Through this project, ITEP collected smoke management information from four tribes. One tribe confirmed they do have a SMP, but could not release it at this time. Four tribes reported that they do not have formal smoke management protocols. Eight tribes were unable to respond to ITEP's inquiries about SMPs.

In each of the contacts made by ITEP through this project, detailed information about the resources on smoke management available on the FEJF website was given to tribal staff. This initial work should pave the way for future activities regarding smoke management issues on tribal land.

Appendix A: ITEP Letter Sent in June, 2002

June 10, 2002

Name
Title
Tribe
Address
City, State, ZIP

Dear Name,

The Institute for Tribal Environmental Professionals (ITEP) has been contracted by the Fire Emission Joint Forum (FEJF) of the Western Regional Air Partnership (WRAP) to collect information from tribes on smoke management from wildland, range and agricultural burning on tribal lands. The FEJF has also collected similar information from western state and local agencies (see FEJF website below). ITEP has been working with the Tribal Data Development Work Group (TDDWG) of the WRAP since 1999 to collect information from tribes in the WRAP region on air quality issues. In the year 2000, ITEP attempted to contact all of the tribes in the WRAP region by phone to ask a detailed list of questions regarding tribal air programs and issues. In that data gathering effort, your tribe indicated that they had a formal smoke management plan (SMP). The FEJF, through ITEP, requests a copy of your tribe's SMP. Providing copies of any documents or information on your tribe's approach to managing smoke, produces several benefits:

- Increases understanding of tribal burning and smoke management practices among state and local agencies.
- Ensures representation of tribal issues, concerns and data in WRAP and other regional decision-making processes.
- Provides a source of guidance to other tribes as they develop their own burning and smoke management programs.

See the enclosed FEJF "storyline" for more information on the FEJF, its goals, tasks and their work to develop programs and tools relating to prescribed fire and air quality. FEJF has already developed several tools, reports and public outreach materials that may be useful to tribes. Visit FEJF's website at <http://www.wrapair.org/forums/FEJF1/FEJFmain.htm> to see what they have available.

The FEJF and ITEP are aware that some tribes have restrictions on sharing tribal information with any groups outside the tribe. Please be aware that any smoke management information that you release for this project will become public information. If your tribe is willing to share some information on your smoke management practices, but does not wish to share entire smoke management documents, please contact ITEP and we will arrange to collect only that information which your tribe agrees is not sensitive. To ensure that sensitive tribal information is not released, please have the enclosed Data

Draft Document: January 24, 2003

Release Form signed by your tribal EPA director or manager, Natural Resources director or manager, a tribal administrator or tribal council, which ever is most appropriate.

If your tribe chooses to provide information to this important effort, please send copies of your smoke management plan and any information or documents relating to smoke management to:

SMP Data Collection
Attn: Fonda Swimmer
Institute for Tribal Environmental Professionals
PO Box 15004
Flagstaff, AZ 86011

Thank you for your participation. If you should have any questions regarding this project, please contact Fonda Swimmer at (928) 523-8785 or via email at Fonda.Swimmer@nau.edu. If you have any questions regarding FEJF activities, please contact Pete Lahm, Co-Chair, at (602) 207-2356 or via email at pete_lahm@compuserve.com.

Respectfully,

Fonda D. Swimmer
Program Coordinator-ITEP

enc: *FEJF Storyline*
Data Release Form

Smoke Management Plan Data Release Form

Please have this form signed by your tribal EPA Director, Natural Resources Director, a tribal administrator or tribal council, whichever is most appropriate.

The _____

Tribe's Name

releases our smoke management plan and related information to the Institute for Tribal Environmental Professionals (ITEP) and the Fire Emission Joint Forum (FEJF) of the Western Regional Air Partnership (WRAP). It is understood that any information supplied will be publicly available for use by FEJF. ITEP will retain a copy of the smoke management plan or information, supplied by the tribe, and will forward a copy to the FEJF co-chairs.

The FEJF and ITEP will use any smoke management information supplied by the tribe to further understanding of tribal burning and smoke management practices among state, local, and WRAP region decision makers. Tribal smoke management information may also be used to guide other tribes as they begin their own smoke management programs.

Signed:

Signature	Printed Name and Title
Signature	Printed Name and Title
Signature	Printed Name and Title
Signature	Printed Name and Title
Signature	Printed Name and Title
Signature	Printed Name and Title

Appendix C: Coeur D'Alene Tribe Release Form and SMP

Smoke Management Plan Data Release Form

Please have this form signed by your tribal EPA Director, Natural Resources Director, a tribal administrator or tribal council, whichever is most appropriate.

The Coeur d'Alene Tribe
Tribe's Name

releases our smoke management plan and related information to the Institute for Tribal Environmental Professionals (ITEP) and the Fire Emission Joint Forum (FEJF) of the Western Regional Air Partnership (WRAP). It is understood that any information supplied will be publicly available for use by FEJF. ITEP will retain a copy of the smoke management plan or information, supplied by the tribe, and will forward a copy to the FEJF co-chairs. The FEJF and ITEP will use any smoke management information supplied by the tribe to further understanding of tribal burning and smoke management practices among state, local, and WRAP region decision makers. Tribal smoke management information may also be used to guide other tribes as they begin their own smoke management programs.

Signed:	Chief Allen, Administrative Director
Signed:	Alfred Nomee, Natural Resources Director
Signed:	Lester Higgins, Air Quality Specialist
Signed:	Marvin Souder, Smoke Management Coordinator

COEUR D'ALENE TRIBE
LAND SERVICES
850 A STREET, PO BOX 408
PLUMMER, IDAHO 83851
(800) 829-2202, FAX (208) 686-0603

COEUR D'ALENE TRIBE
SMOKE MANAGEMENT PROGRAM
FACT SHEET

THE PURPOSE OF THIS PROGRAM IS TO MINIMIZE THE IMPACT OF FIELD BURNING SMOKE WITHIN THE COEUR D'ALENE INDIAN RESERVATION AND OTHER OUTLYING COMMUNITIES.

- THE BURN SEASON (FIELD BURNING) WILL TAKE PLACE FROM AUGUST 1, 1999 THROUGH SEPTEMBER 30, 1999, EXCLUDING FRIDAY'S, WEEKENDS, AND HOLIDAYS, WITHIN THE BOUNDARIES OF THE COEUR D'ALENE INDIAN RESERVATION.
- ALL AGRICULTURAL ACRES BURNED MUST BE REGISTERED WITH THE COEUR D'ALENE TRIBE LAND SERVICES (COST FOR REGISTRATION IS \$1.00 PER ACRE).
- A COEUR D'ALENE TRIBE FIELD BURNING PERMIT, IF APPROVED, WILL THEN BE ISSUED FREE OF CHARGE.
- A COEUR D'ALENE TRIBE FIELD BURNING PERMIT IS REQUIRED PRIOR TO BURNING.
- A COPY OF THE PERMIT SHALL BE CARRIED BY THE PERMIT HOLDER OR HIS/HER DESIGNEE ON-SITE DURING THE BURNING PROCESS.
- AUTHORITY TO BURN WILL BE GIVEN DAILY, BASED ON CLIMATIC CONDITIONS. COEUR D'ALENE TRIBE, LAND SERVICES (800) 829-2202, EXT 5818, 0206, 0804, 0501, 2331 OR 0300) AND SEEDS, INC. AT SETTERS (291-5412 OR 231-5411) WILL HAVE CURRENT BURN INFORMATION AFTER 9:00 A.M. IN THE MORNING ON THE DAYS STATED ABOVE.
- ENSURE THAT ALL FIRE BREAKS ARE FUNCTIONAL PRIOR TO IGNITION OF A FIELD.
- ENSURE THAT FIRE SUPPRESSION EQUIPMENT IS ON-SITE OR NEAR THE AREA BEING BURNED.
- AFTER EACH DAY OF BURNING, THE PERMIT HOLDER SHALL NOTIFY COEUR D'ALENE TRIBE, LAND SERVICES, OF THE AMOUNT COMPLETED.
- DIRECT RADIO COMMUNICATION WILL BE REQUIRED FOR THE 1999 BURNING SEASON.
- FOUR BURN AREAS HAVE BEEN ESTABLISHED WITHIN THE RESERVATION BOUNDARIES.

- A 1/2 MILE BUFFER ZONE (ON EACH SIDE OF THE ROAD) HAS BEEN ESTABLISHED ALONG THE HIGHWAY 95 CORRIDOR AS WELL AS ALL OTHER MAIN STATE ROADS. WITH THE CORRECT PREVAILING WINDS, THE ACREAGE WITHIN THE BUFFER ZONES MAY BE THE ONLY THING BURNED ON A GIVEN DAY TO REDUCE THE SMOKE IMPACT.
- A 2 MILE CIRCLE HAS BEEN ESTABLISHED AROUND THE COMMUNITIES OF WORLEY, PLUMMER, AND TENSED-DESMET, TO REDUCE THE SMOKE IMPACT ON POPULATED AREAS ON THE COEUR D'ALENE INDIAN RESERVATION. THE PREVAILING WINDS MUST BE ABLE TO CARRY THE SMOKE AWAY FROM THE POPULATED AREAS OR BURNING WILL NOT BE AUTHORIZED WITHIN THE TWO MILE CIRCLE ON THAT GIVEN DAY.

COEUR D'ALENE

SMOKE MANAGEMENT PLAN

Introduction, Program Overview
and Operational Procedures

Revised 1999
Resolution No. 222(96)

Coeur d'Alene Tribe
Smoke Management Plan for Agricultural Field Burning

1. INTRODUCTION

1.1 Jurisdiction

The Coeur d'Alene Tribe maintains jurisdictional responsibility over agricultural field burning activities within the exterior boundaries of the Coeur d'Alene Indian Reservation. Such jurisdiction shall be exercised to the fullest extent, including issuing of Tribal burn permits, issuing burn advisories, monitoring program compliance and issuing notices of violations.

1.2 Purpose

The Purpose of this Smoke Management Plan is to establish policies and procedures for a Smoke Management Program to control agricultural field burning. This program will be operated in cooperation and coordination with the Idaho Department of Environmental Quality (DEQ) and the North Idaho Grass Growers. This program will conform with air quality regulations for this source of air pollutants and fulfill the intent of the Tribal Law and Order Code Chapter 13, sections 24.01, 25.01, 26.01.

The operational plan consists of two sections. The user's Instructions intended to provide individuals responsible for burning with instructions and forms needed to comply with the law and specific provisions of this Smoke Management Plan. This Plan also describes how Smoke Management decisions will be made and by whom.

1.3 Smoke Management Goals and Objectives

As a basis for development of its field burning emission control effort, the Coeur d'Alene Tribe adopts the following Goals and Objectives:

- A. To burn fields only when weather conditions are conducive to good smoke dispersion.
- B. Protect identified smoke sensitive areas and minimize adverse air quality or visibility impacts due to field burning activities.
- C. Responds quickly to smoke caused problems and adjust operational procedures as necessary to prevent reoccurrence.
- D. Keep the general public informed of field burning progress on a daily and seasonal basis thru the use of public information releases.
- E. Restrict unnecessary burning and encourage research on alternative methods of disease control and production enhancement.
- F. Develop a meteorological network on the Reservation to assist and enhance program methods of forecasting weather conditions and aid in management decisions.
- G. Promote cooperation with State and local agencies responsible for controlling air quality in Idaho and Washington and strive for consistency to ease interagency relations.

1.4 Background

Open burning of agricultural fields on the Coeur d'Alene Reservation has been a common practice. Smoke management is the practice of restricting open burning to those periods when atmospheric and field conditions are appropriate, thus minimizing adverse impacts on the general

public in smoke sensitive areas. The Coeur d'Alene Tribe's Smoke Management Program will strive to effectively coordinate and monitor all field burning activities.

A successful Smoke management program requires three activities to be conducted with reliable accuracy:

1. Forecasting meteorological conditions.
2. Communicating forecast and burn advisories.
3. Burning in accordance with burn advisory restrictions.

All three activities require responsible judgments and actions. There are no smoke management programs with flawless records. All have on occasion missed forecasts, misinterpreted communications, or executed burns resulting in smoke intrusions into sensitive areas. To minimize the possibilities of undesirable results, Smoke management program staff are continually working to reduce errors in routine operations.

Efforts to enhance this Smoke management program include the development of more precise data gathering equipment, development of more sophisticated forecast techniques, better procedures for communication, and increased training and regulation to make burning results more predictable. Program staff continues to make the necessary types of changes in their efforts to reduce the potential for smoke intrusions. Smoke management experts recognize these steps will never completely eliminate the potential for smoke intrusions.

2. USER INSTRUCTIONS

2.1 Regulation and Authority

Tribal Law and Order Code, Chapter 13, sections 24.01, 25.01, and 26.01, contain specific wording concerning the use and control of fire and open field burning within the exterior boundaries of the Coeur d'Alene Indian Reservation. Section 26.01 (F) contains specific provisions regulating burning and provides the authorization for the Smoke Management Program. Tribal code operates in conjunction with State statutes regulating agricultural burning which are contained in Idaho code 39-2302 to 39-2305, as amended. Copies of Tribal code 13-24.01, 13-25.01 and 13-26.01 are included in the appendix of this document.

2.2 Registration

Field registration is required for all grass fields, cereal grain or other fields' prior to conducting any burning on the Coeur d'Alene Indian Reservation. It is the responsibility of every person requesting to conduct such burning activities, to complete and return the appropriate forms to the Tribes' Smoke Management office. All individuals who register fields on the Reservation shall pay to the order of the Tribe, a per acre registration fee for all cropland to be burned. Field registration is an application for a burn permit. Issuance of a permit is at the discretion of the Smoke management office. Copies of the registration form and permit used for field-burning season are shown in the appendix.

Registration forms may be obtained by contacting:

Smoke Management Coordinator
Coeur d'Alene Tribal Headquarters

850 A Street, P.O. Box 408
Plummer, Idaho 83851
(208) 686-5818 or 686-0206

IT IS IMPORTANT TO NOTE THAT REGISTRATION DOES NOT CONSTITUTE AN AUTHORIZATION TO BURN. THE TRIBE'S SMOKE MANAGEMENT COORDINATOR ISSUES BURN AUTHORIZATIONS, A BURN DETERMINATION IS MADE AFTER WEATHER ASSESSMENTS HAVE BEEN CONDUCTED.

2.3 Restrictions on Burning

For the Tribe's smoke management program to operate effectively, each person requesting to conduct field or open burning, must first obtain guidance regarding burn methods from the Coordinator. Weather conditions may severely limit the number of fields that can be burned with minimum smoke impacts. It may be necessary to limit the burning of some fields and recommend the burning of just a select number of fields to minimize and maintain smoke impacts at an acceptable level. The Coordinator reserves the right to withhold all burn authorizations.

Authorizations to burn may be issued by the Coordinator when all of the following conditions are met:

1. The field registration forms have been completed and filed with the Tribe's Smoke management program.
2. Proper weather conditions exist to disperse the smoke adequately.
3. Fire fighting equipment is on site.
4. The field has been prepared and identified by the program Coordinator as ready to burn.
5. A burn permit has been issued to the responsible operator.

2.4 Other Permits Required

Certain federal, state, and local agencies responsible for fire safety do require burning permits, depending on field locations. Compliance with the Tribe's Smoke management guidelines does not relieve any operator of the responsibility of obtaining or meeting the terms and conditions of any and all applicable agency burn permits.

3. PROGRAM OPERATIONS

The following discussion of daily program organization and operations describes activities for the Coeur d'Alene Tribe, State DEQ, North Idaho Grass Growers, and to the extent necessary, the Spokane County Air Pollution Control Authority (SCAPA).

3.1 Program Organization

The program will be implemented and monitored by the Smoke management Coordinator, an employee of the Coeur d'Alene Tribe. In addition NIGG will provide, directly and through contract,

staff people to maintain, operate and support the collection, analysis and dissemination of data and burn advisories. NIGG will contract to provide personnel to operate and maintain two nephelometer sites within the burn area. Nephelometer numbers and sites will be determined prior to burning based upon instrument and site location availability.

- I. DEQ will register fields and collect burning fees of areas off Reservation.
- II. DEQ will operate fine particulate (PM-10) and other air quality samplers, and monitor field burning activities to assure that no air quality standards are being violated.
- III. The Coeur d'Alene Tribe's Smoke Management Program Coordinator will accept applications and register fields, collect registration fees, and authorize burning within the exterior boundaries of the Reservation.

The Smoke Management Office of the Tribe will provide administrative and clerical support necessary to the Coeur d'Alene Tribe's Program.

3.2 Forecast Areas:

For the purpose of issuing daily burn advisories within the Coeur d'Alene Reservation:

1. Rathdrum Prairie, Northern Kootenai County; The Rathdrum Prairie forecast area is defined as that portion of Kootenai County lying north of township 49 N. (i.e. township 50,51,52, and 53)
2. Reservation Area:
 - (a) Reservation area, Kootenai county forecast area is defined as that portion of Kootenai County lying south of township 50 N. (i.e. 47,48, and 49)
 - (b) Reservation Area, Benewah County, forecast area is defined as the area lying south of township 47 N. and within Benewah County (i.e. township 43,44, 45, and 46).

3.3 Field Burning Forecasts:

Under normal operating conditions, the general forecasts for each area will be issued each day by 9:00 a.m. A discussion of various aspects of daily burn forecasts is presented in the following sections.

3.3-1 Burn Advisories:

Prior to the ignition of any field, advisories for conducting such burning must be obtained by the Smoke Management Coordinator. Advisories will be based on field registration data and forecasted meteorological condition. The Coordinator is solely responsible for assessing the conditions in order to issue burn advisories within the Reservation.

In addition to identification of the fields affected and the earliest and latest ignition times, advisories may also include restrictions or guidance regarding fuel conditions, wind speed and direction, ignition methods or other factors important to smoke dispersion.

Advisory records will be maintained for use in subsequent smoke intrusion analysis or enforcement actions.

3.3-2 Communication:

It is absolutely crucial that Program decisions are communicated clearly to source operators. To take advantage of short-term favorable conditions, it is necessary that communications be as direct and immediate as possible. Routine communications regarding field-burning activities, including advisories for burning, will be handled by phone or radio when available. Rapid communications can also assist in the decision making process. Information may include weather observations, smoke drift observation, progress of burning and the availability of additional burning.

Forecast areas and weather stations are as follows:

Rathdrum Prairie Weather Station
(208) 667-6569
Rockford/Worley Weather Station
(208) 291-3535

There are additional weather stations which will be consulted.

3.3-3 Location Amount and Timing of Burns:

The location, amount and timing of any burning to be conducted in the four forecast areas will be based on the Program Coordinator's judgement of down wind effects and acceptable air quality. Every effort will be made to make the burn season as short as possible. Burning may only be conducted Monday through Thursday. No burning will be authorized Friday, Saturday, Sundays or holidays. Burning will be limited to the hours between 9:00 a.m. and 3:00 p.m. No further ignitions may occur after 3:00 p.m. Approval to burn after 3:00 p.m. must be obtained from the Program Coordinator. Violations of the requirements of the Smoke Management Program may result in penalties according to Tribal Code 13-26.01 (H).

The Coordinator will consider the follow factors prior to making a decision regarding burning:

1. Ventilation conditions - surface and transport wind speed and direction, prevailing visibility, amount and location of acreage already authorized.
2. Plume characteristics - mixing depth, atmospheric stability.
3. Downwind impact area concerns.
4. Field conditions - fuel type, moisture content, burning crew resources, field configuration, type of communications available.
5. Air quality considerations - effects on visibility, particulate loading, and exposure time.
6. Synoptic conditions - high, lows, approaching fronts, precipitation probabilities.

In the interest of flexibility, a good deal of latitude in weighing these factors rests with the Coordinator. Though burning may not be advised due to the considerations of one or more of these factors, burning releases are not tied to or limited by specific values for mixing height, fuel moisture content or other significant parameters.

Advisories prepared by the Coordinator will be based on general atmospheric dispersion conditions, which, over suitable transport distance, are reasonably predictable.

Dispersion forecasts and related advisories regarding burning may not necessarily be appropriate or safe considering specific conditions at a given field. If necessary, burning advisories issued by the Coordinator will be amended as weather conditions, ambient smoke levels, or other factors change.

These amendments will be communicated by telephone or radio upon request of the effected growers; if conditions are expected to deteriorate, the Coordinator will make reasonable efforts to contact growers to limit any additional burning.

4. METEOROLOGICAL AND AIR QUALITY PARAMETERS:

4.1 Area Climatology:

The summertime meteorology of the Northern Idaho is strongly influenced by the position and strength of the Eastern Pacific high-pressure cells. These factors are dynamic and consequently daily weather patterns can change dramatically. Typically, however, a dry warm air mass resides over the field burning areas within Reservation boundaries, resulting in minimal rainfall. The clear skies allow for substantial nocturnal cooling of surface air layers, resulting in the development of strong nighttime surface inversions. The heating and cooling of surface air layers also establishes a definite diurnal surface wind flow pattern due to upslope flow during the day and downslope flow at night. These diurnal patterns are particularly evident on the flat Rathdrum Prairie located between a river valley and surrounding hills.

When the Pacific high-pressure cell weakens sufficiently, an air mass movement may occur from the southwest. Occasionally, these air movements will penetrate with sufficient strength to alter ventilation patterns in Northern Idaho. Under these circumstances, the general ventilation, relative humidity, and the potential for precipitation all increase.

4.2 Synoptic Weather Data:

General meteorological data for the Smoke Management Program will be obtained from the National Weather Service Office at Spokane International Airport or by direct computer linkage to national weather service data. The Program Coordinator will develop field-burning recommendations according to general forecast guidelines published by IGGA in 1978.

Burn forecasts will then be updated throughout the day by the Program Coordinator based on his/her assessment of current and forecasted smoke plume transport and dispersions conditions.

4.3 Wind:

Wind direction and wind speed data will be determined chiefly through:

- a. Upper air soundings (Rawinsondes) which are taken twice daily (4 a.m. and 4 p.m.)
- b. Pilot balloon sounding taken throughout the day (e.g. 7 a.m., 9 a.m., 11 a.m. etc.) at the Rathdrum Prairie, Rockford, WA, Weather stations as well as the Tribe's weather stations with balloons located in the Tensed/DeSmet area;
- c. Visually tracked in-field balloon releases;
- d. Tracking of smoke plume movements; and

- e. Remote wind observation sites which are accessible by telephone.

Information will be recorded on appropriate forms and logs. Accurate wind direction predictions may be the most critical factor in an effective smoke management program. The predicted wind direction establishes the areas allowed to burn to avoid impacts on smoke sensitive areas. Clearly, accuracy in forecasts and responsiveness to change in wind direction are critical if burning is to be accomplished in areas nearby and upwind of an area to be protected.

Since wind directions vary with altitude, the determination and forecasting of winds at all levels anticipated to contain smoke is important. Upper level transport winds will carry a substantial portion of the pollutant materials. Since some time is required for smoke to mix down from these layers, initial impacts occur much farther downwind than those caused by smoke in the surface layer.

4.3-1 Surface Winds:

Wind flows at the surface will be developed based upon wind observations augmented by smoke observations and experience with local terrain-induced flow phenomena. Since information on local winds will be available on a real-time basis, revisions to the surface flow information will be made routinely throughout each day.

Surface winds are predominantly from an easterly quadrant during the night and early morning hours and from a westerly quadrant during the afternoon. This diurnal exchange in the wind direction is normally consistent and usually well defined and occurs due to the region's topography with mountains to the north and east and lower topography to the west. The change in directions from downslope to upslope occurs between the hours of 9:00 and 12:00 PDT. The timing of the shift being influenced by the surface pressure gradient, strength of the nocturnal inversion and the calendar date.

This "turning wind" condition may be used to burn certain fields in difficult locations. Ignition times will be closely controlled so as to coincide with the latest forecast for wind direction change. Such precise control of burning requires:

1. Use of short forecast periods;
2. Close monitoring of meteorological condition; and
3. Immediate communications with the field personnel conducting the burning.

Because of the potential for intrusions from burning under these conditions, supportive advisories will only be considered when all three of these conditions can be met.

Wind speeds at the surface average about 8 mph during the summer season in this area. A study by the National Weather Service of 5 years of hourly observations taken at the Coeur d'Alene Airport showed that the wind is calm 10 percent of the time, less than 3 mph 13 percent of the time, 4-15 mph 70 percent of the time, and greater than 15 mph 7 percent of the time. The directions most frequently observed in this analysis were south-southeast, north-northeast, and south, accounting for nearly 40 percent of the total.

4.3-2 Upper Wind levels

Upper level flow directions and wind speeds will be determined from routine pilot balloon and rawinsonde data received throughout the day. From this wind data, allowing for transverse horizontal dispersion, potential impact areas at long distances, 10 to 60 miles downwind, will be identified for

proposed burning. If such trajectories indicate substantial impact of sensitive areas, burning will be restricted accordingly in the proposed areas. Often the "backward" plume concept will be applied to the wind flow field to determine areas from which burning emissions would cause receptor impacts. To provide for adequate transport and dispersion wind speeds above the surface (2,000 - 10,000 feet) should be 5 -20 mph and generally increase with height.

Upper level transport winds are normally from the southwest and this direction commonly dominates down to the surface in afternoon hours except where altered by terrain factors. Occasionally, the position of the high pressure as well as surface patterns shift resulting in northerly surface and transport winds. This condition is normally short-lived, usually lasting no more than a few days.

To avoid smoke intrusions of the largest population centers, the most favorable transport wind directions for burning are southwesterly for those fields located in Spokane Valley, Foothills, and Rathdrum Prairie; easterly or northeasterly for those located in southern Spokane County and south of the City of Coeur d'Alene. Westerly in southern Kootenai County, and south westerly in Benewah County.

4.4 Temperatures

Maximum daily temperatures average in the low to mid-80's in Spokane, Kootenai and Benewah counties during the summer months with the maximum temperatures reaching into the 90's on many days and, on occasion, exceeding 100 degrees. The maximum temperature recorded to date is 109 degrees at the Coeur d'Alene Airport and 108 degrees at Spokane in August of 1961.

4.5 Inversions and Mixing Heights:

Inversions and vertical dispersion information for conducting the Program Management will be determined from the early morning (4 a.m.) rawinsonde measurements taken at the Spokane National Weather Service station. Other useful information on upper level winds and stability will be sought from the National weather Service throughout the day as conditions may warrant.

Typically, the vertical temperature structure (lapse rate) of the summertime atmosphere is such as to allow turbulent mixing to 8,00 feet (2,400) meters) above ground level (agl). Decreasing insulation occurs as the season progresses, reducing the mixing height and the available hours for burning each day. The change in temperature with elevation is a very critical variable in the dispersal of smoke. If the temperature decreases rapidly with height, the upward forces on the smoke plume will be strong, and a good connective column will result. If temperature remains constant (isothermal) or increases with height (inversion), a stable layer of air results, which traps the smoke or limits the atmospheric volume available for smoke dispersal. During the late night and early morning hours a surfaced-based inversion is usually formed by nocturnal cooling of the surface and the adjacent layers of air. This inversion is normally 100 - 1000 feet thick, depending on wind and sky conditions. The deeper inversions are associated with light downslope winds and clear skies. After sunrise, solar radiation heats the earth's surface, dissipating the inversion. Depending on the thickness, the inversion is usually "burned off" between 0900 and 1200 hours.

Disappearance of the nocturnal inversion is usually accompanied by a change in the wind direction from downslope. The timing of the inversion breaking up and the accompanying wind shift can be used to advantage the burn fields which under normal post inversion wind transport conditions would impact smoke-sensitive areas.

4.5 Cloudiness:

Although sunshine records are not available for Coeur d'Alene, the observation taken over a period at the National Weather Service Station at Spokane have been summarized and analyzed. The average percentage of possible sunshine ranges from 22 in December (a month with a high incidence of fogs) to 80 in July. Cloudiness may be used as an indicator of atmospheric turbulence (in case of cumulus-form clouds) in determining favorable times for field burning. Sunshine and daytime cloud statistics for are displayed in table 4.6.

Table 4.6
DAYTIME CLOUD AND SUNSHINE SUMMARY
SPOKANE, WASHINGTON

MONTH	% OF POSSIBLE SUNSHINE	AVERAGE SKY COVER (TENTHS)	# OF CLEAR DAYS	# OF P/C DAYS	# OF CLOUDY DAYS
JULY	80	3.8	16.5	8.4	6.2
AUGUST	77	4.1	15.3	8.4	7.3
SEPTEMBER	70	5.0	11.8	8.3	9.9

4.6 Field Fuel Moisture Conditions:

In general, determination of proper field fuel moisture conditions for burning will be left up to the individual responsible for conducting the burning, including periods following light rainfall and nighttime periods of high relative humidity and dew.

4.7 Precipitation:

The climate during summertime months in this area can be characterized as mild and arid. Average rainfall amounts range from a dry 1.95 inches at Spokane to a slightly wetter 3.02 inches at Coeur d'Alene. Average monthly precipitation totals are given in Table 4.8.

TABLE 4.8
AVERAGE PRECIPITATION DURING SUMMER (INCHES)

	JULY	AUGUST	SEPTEMBER	SEASONAL TOTAL
COEUR D'ALENE	0.68	0.96	1.38	3.02
SPOKANE	0.50	0.74	0.71	1.95

Generally, field burning is not conducted during periods of precipitation or for sometime after. As a rule of thumb, one day of drying time is required for each one-tenth of an inch of rainfall received. However, the drying period may vary widely depending on the field location and condition and the lateness of the season.

4.8 Relative Humidity:

Although the fuel is dryer and the field will burn more quickly under low relative humidity conditions, other factors such as transport winds and the atmospheric lapse rates are far more critical

parameters to consider in determining burn or no-burn advisories. Also if other factors are favorable for field burning, the relative humidity often will be within reasonable limits. The average relative humidity observed at the Coeur d'Alene weather station at selected times during the burning season as shown in Table 4.9.

TABLE 4.9
AVERAGE RELATIVE HUMIDITY (%)
IN COEUR D'ALENE, IDAHO

	JULY	AUGUST	SEPTEMBER
4. a.m.	76	73	78
10 a.m.	40	44	47
4 p.m.	30	31	45
10p.m.	63	63	70

4.9 Visibility:

Prevailing visibility and the nature of visibility impairment will be factors considered when burn advisories are prepared and issued. In particular, whenever, in the absence of high humidity or rain, prevailing visibility is less than 10 miles (16km), general burning will be strictly limited. Every effort will be made to avoid smoke impacts on the Coeur d'Alene Airport that, due to impairment of visual range, would interfere with normal flight operations.

4.10 Air Stagnation Advisories:

Air stagnation advisories (ASA) are issued by the Idaho DEQ when atmospheric dispersal conditions are poor for an extended period of time (36 hours or more) and buildup of air pollutants is expected. All open burning is prohibited when an ASA is in effect. However, the occurrence of an ASA is extremely rare during the Northern Idaho/Eastern Washington field-burning season.

4.11 Air Quality Monitoring:

Nephelometers, high volume samplers, and other particulate measuring instruments as available in Northern Idaho are not interactive with the Smoke Management Program in at time frame to be of value in controlling burning. Data from high volume samplers is generally of little use for operational or subsequent analytical activities since it is insensitive to short- term impacts due to field burning. In addition, under normal monitoring schedules, high volume samplers are only run every sixth day throughout the year.

Because of their sensitivity to smoke, nephelometer measurements are preferred for analysis of smoke intrusion events. Though only two of the units now available can be used to influence burn advisory decisions in a practical time frame, all measurements would be used by the program to expeditiously identify the severity and extent of smoke intrusions incidents. Such preliminary analysis would be prepared to document smoke levels for the purpose of modification to subsequent burn plan and reporting, in quantifiable terms, the extent of the smoke intrusion.

4.12 Test Fires:

Test fires will be used routinely by the Coordinator to provide proof of atmospheric dispersal characteristics. No specific requirements will be placed on test fires used to determine existing

meteorology except that they should be representative of the type of field and area in which burning is being considered.

4.13 Aerial Observation:

Aerial observations may be used to make rapid, accurate assessments of meteorological conditions as well as important burning information such as plume height and trajectory. In addition, the use of aircraft would facilitate:

- a. Measurements of atmospheric temperatures and winds at high altitudes;
- b. Observation and more precise timing of forecast weather changes;
- c. Immediate identification or verification of micro-meteorological changes;
- d. Observation of the extent and timing of smoke intrusions.

However, due to the additional expense, use of such observations is expected to be limited.

4.14 Complaints:

Complaints are an indirect measure of air quality and will be used by the Coordinator in identifying smoke-affected areas where burning impacts may need to be reduced.

Documented complaints provide important additional information when planning burning advisories and analyzing impacts of burning activity. Accordingly, the Coordinator will receive and respond to complaints, to the extent such activity does not compromise overall program management needs. The Program Coordinator will also receive complaints from the Benewah Medical Center regarding increases in upper respiratory difficulties experienced by patients in an effort to ascertain the sensitivity of the impact of the agricultural burning.

5. PROGRAM DOCUMENTATION:

Well-organized records of weather data, air quality data, burn advisories, and acreage accomplishments will be maintained on a routine basis. Such records will establish a data base to be used for subsequent program evaluations, improvement in quality assurance, as well as supporting burn management decisions.

Where not already in use, standardized procedures will be adopted for the gathering of information and issuance of advisories. These procedures will be facilitated through use of standard forms, logs, checklist and flow diagrams.

Coeur d'Alene Tribe's
Smoke Management Plan
Appendix

TRIBAL CODE
Sections 13-24.01, 13-25.01 and 13-26.01 *

*Please note that the font size is different but the content is the same. These sections are provided for general reference only, and should not be relied upon. A copy of the Coeur d'Alene Tribal Code is on file with the Smoke Management Program Coordinator.

13-24.01 Failure To Report Or Control Fire

It shall be unlawful for any person, knowing that a fire is endangering life or property, to fail to take prompt and reasonable action to give a fire alarm to an individual, agency, or organization having a duty to deal with such emergency. Upon conviction, imprisonment shall not exceed one (1) year or \$5,000.00 fine or both jail sentence and fine, plus costs.

13-25.01 Throwing Away Burning Materials – Starting Prohibited Fires - Permitting Fire To Spread

Any person who shall:

- A) Throw away any lighted or burning tobacco, cigarettes, matches, or other lighted materials;
- B) Kindle or start a fire on land owned or controlled by him/her, or who permits or allows other persons to do" so when such a fire is prohibited by this ordinance;
- C) Kindle or cause any fire to be kindled other than in a building within a receptacle designed for such fire, and leave said fire without totally extinguishing the same or permit said fire to burn or spread beyond his/her control;
- D) Allow, suffer, cause, or permit to be burned any of the following materials:
 - 1) Food and other garbage of moisture content so high as to prevent maintenance of a visible flame;
 - 2) Dead animals or parts thereof;
 - 3) Junked motor vehicles or any materials resulting from a salvage operation;
 - 4) Tires or other rubber materials or products;
 - 5) Plastics;
 - 6) Asphalt or composition roofing or any other asphaltic material or product;
 - 7) Tar, tar paper, waste or heavy petroleum products, or paints;
 - 8) Lumber or timbers treated with preservatives;
 - 8) Trade waste other than dry, untreated vegetable material and products;
 - 10) Insulated wire;
 - 11) Pathogenic wastes; or
 - 12) Hazardous wastes.

Shall be deemed guilty of an offense and upon conviction thereof, shall be sentenced to a period of confinement not to exceed one (1) year, or to pay a fine not to exceed \$5,000.00, or both jail sentence and fine, plus costs.

13-26.01 Open Burning - Starting, Maintaining, Permitting Fire Without Permit

Open burning shall be defined as the kindling, maintenance, or permitting of a fire within the exterior boundaries of the Reservation at any place other than within a building and within a receptacle designed for such fire or burning material. It shall be unlawful for any person to conduct or to allow, suffer, cause, or permit to be conducted any open burning during:

- 1) Any period in which the Superintendent of the Northern Idaho Agency or the Council shall have prohibited open burning, and
- 2) At all other times except as provided in this section.
 - A) The purpose of Section 13-26.01 is to protect public health and welfare from direct fire damage and from air contaminants resulting from open burning.
 - B) Compliance with Section 13-26.01 does not exempt or excuse any person from complying with applicable laws and ordinances of other governmental jurisdictions responsible for fire control or hazardous material disposal or from liability for damages or injuries which may result from open burning.
 - C) The provisions of Section 13-26.01 are not intended to interfere with the rights of any city or county to provide equal or more stringent control of open burning within their respective jurisdictions.
 - D) Categories for which no permit is required. No permit is required for the following categories of open burning when done according to prescribed conditions. Unless specifically exempted each category, in this section, is subject to all of the provisions of Paragraph D, Section 13-25.01.
 - 1) Recreational and Warming Fires. Open outdoor fires used for the preparation of food or for recreational purposes (e.g. camp fires, ceremonial fires, and barbecues) or small fires set for hand warming purposes.
 - 2) Weed Control Fires. Open outdoor fires used for the purpose of weed abatement along fence lines, canal banks, and ditch banks where the total burned area is less than one acre, suitable measures are taken to prevent escape to other areas, and moisture content is low enough to permit maintenance of a visible flame.
 - 3) Training Fires. Open outdoor fires used by qualified personnel to train fire fighters in the methods of fire suppression and fire fighting techniques, or to display certain fire ecology or fire behavior effects. Training fires shall not be allowed to smolder after the training session has terminated. Training fires are exempt from numbers 3), 5), 6), 7), 8), 9), and 10) of Paragraph D, Section 13-25.01.

- 4) Industrial Flares. Industrial flares used for the combustion of flammable gases, the combustion products of which are non-toxic and the burning of which meets EPA air quality standards.
 - 5) Residential Solid Waste Disposal Fires. Open outdoor fires used to dispose of solid waste (e.g. rubbish, tree leaves, year trimmings, gardening waste, etc.), excluding garbage produced by the operation of a domestic household, is an allowable form of open burning when the following provisions are met:
 - a) No scheduled house to house solid waste collection service is available; and
 - b) The burning is conducted on the property where the solid waste was generated; and moisture content is low enough to permit maintenance of a visible flame.
 - 6) Dangerous Material Fires. Open outdoor fires used or permitted by a public or military fire chief to dispose of materials (including military ordinance) which present a danger to life, valuable property, the public welfare, or for the purpose of prevention of a fire hazard, when no practical alternative method of disposal or removal is available, are allowable forms of open burning.
 - 7) Infectious Waste Burning. Upon the order of a public health officer, open outdoor fires used to dispose of diseased animals or infested material is an allowable form of open burning. Infectious waste burning is exempt from Section 13-25.01 D) 11.
- E) Categories for which a permit is required. The following categories of open burning may be conducted only upon the granting of a permit by the Coeur d'Alene Tribe, those other agencies as indicated, and meeting the conditions thereof in accordance with the conditions stated on the permits and the criteria of the appropriate paragraphs of this Section:
- 1) Agricultural Field Burning. The use of open outdoor fires to burn agricultural fields for the purpose of:
 - a) Disposing of crop residues;
 - b) The control of diseases, insects, pests or weed infestations; and
 - c) The developing of physiological conditions conducive to increased crop yields, when the provisions of Paragraph F) are met.
 - 2) Prescribed Fire Management Burning. The use of open outdoor fires to obtain the objectives of prescribed fire management burning when the provisions of Paragraph I) are met.
 - 3) Landfill Disposal Site Fires. The use of open fires for the disposal of solid waste at any solid waste landfill disposal site or facility, only if in compliance with an operational permit issued by the Idaho Department of Health and Welfare in accordance with the Idaho Sanitary Landfill Regulations and accompanied by a permit issued by the Tribe.
- F) Smoke Management Plan for Agricultural Field Burning. The Coeur d'Alene Tribe regulates agricultural field burning within the exterior boundaries of the Reservation.

Such regulation shall be administered through the Tribe's Smoke Management Program and according to the Smoke Management Plan. The Smoke Management Plan is adopted by the Tribal Council. The Program is instituted and supervised by the Smoke Management Program Coordinator.

- 1) No person shall conduct or allow to be conducted any agricultural field burning without first registering each field with the Coeur d'Alene Tribe's Smoke Management Program. Such registration must be completed annually. Approved forms for registering fields may be obtained at the Tribe's Land Services Office. Registration provisions are not met unless the completed forms are received and approved by the Tribe.

NOTE: Registration does not authorize burning.

- 2) After the fields are registered, the Smoke Management Program Coordinator will assess whether acceptable burning conditions exist. If conditions are deemed by the Coordinator to be acceptable, the Coordinator may issue a burn permit. Such permit is granted in accordance with the Smoke Management Plan.
 - 3) If the demand for conducting agricultural field burning exceeds the capacity of the atmosphere to transport and dissipate smoke during the period of August 1st to September 30th, priority will be given in descending order to: Class I - turf grasses; Class II - cereal grain fields; Class III - field and forage grasses; and Class IV - other agricultural field burning. The Tribe may make priority adjustments based on written documentation of extreme economic hardship, disease outbreak, insect infestation, irreparable damage to land, or other conditions.
 - 4) The open burning of any grass field scheduled to be torn out shall be prohibited unless written justification is provided during registration and approved by the Tribe.
 - 5) The open burning of any agricultural field other than turf grass, field grass, and forage grass shall be prohibited unless written justification is provided during registration and approved by the Tribe. The Smoke Management Program Coordinator may prohibit burning of the allowed categories of fields in some years and/or areas.
 - 6) Any person conducting or allowing agricultural field burning shall be immediately accessible by telephone or radio during any approved burning periods. Should approval for burning be rescinded, each person shall use all reasonable efforts to extinguish on going fires and shall not start any new fires.
 - 7) The use of reburn machines, propane flamers, or other devices to ignite a field shall be considered as an agricultural burning operation and as such shall meet the provisions of this Section.
- G) Fees. Any person who registers fields with the Coeur d'Alene Tribe shall pay to the Tribe a fee. The fee shall be deposited in a separate account in the Finance Department and used to cover costs of administering the Smoke Management Program. The fees

shall be charged in order to register fields. There is no fee charged for a burn permit. Disbursement of funds shall be authorized by the designated Smoke Management Program Coordinator only for the purpose of supporting the Program and as approved by Council.

- H) Penalty for Violations. Violation of any provisions of this section or of the Coeur d'Alene Tribe's Smoke Management Program shall constitute a civil violation and subject the violator and/or owner to a civil penalty of \$500.00, plus a charge of \$10.00 for each acre burned in violation.
- I) Burning Permits for Prescribed Fire Management Burning.
 - 1) Whenever a burning permit or prescribed fire plan is required by the Idaho Department of Lands, U.S.D.A. Forest Service, or any other state or federal agency responsible for land management, any person who conducts or allows prescribed burning within the exterior boundaries of the Reservation shall meet all permit and/or plan conditions and terms which control smoke.
 - 2) The Tribe will cooperate in interagency agreements which assure permits or plans, issued by agencies referred to in Sub-paragraph 1) 1 of this paragraph, and provide adequate consideration for controlling smoke from prescribed burning.
 - 3) Rights of Way Fires. The open burning of woody debris generated during the clearing of rights of way shall be open burned according to the Idaho Department of Land's "The Idaho Forestry Act, Fire Hazard Reduction Law, Rules and Regulations Pertaining to Forest Fire Protection", as well as the provisions of Sections 13-25.01 and 13-26.01.

FIELD BURNING PERMIT APPLICATION

1 of 2

DESCRIPTION OF FIELDS					FOR OFFICE USE ONLY	
FIELD NO.	LOCATION OF FIELD	CLASS OF FIELD	NO. ACRES	ACRES BURNED	DATE	
	T R S					
	T R S					
	T R S					
	T R S					
	T R S					
	T R S					
	T R S					
	T R S					
	T R S					
	T R S					
Total Registered Acreage				Total	Date Completed	
Fee Payment Enclosed				Received By:	Date:	

Class of Field

I - Turf Grasses. II - Cereal Grain. III - Field and Forage Grasses, V - Others

Please complete Page 2 for each field. All forms must be completed and returned prior to the burning of any field. A one dollar (\$1.00) per acre fee must be enclosed with this permit. Permit application does not authorize burning. Approval to burn must be obtained from the Coeur D'Alene Tribe Smoke Management Program Manager or, if not available, from the Idaho Field Burning Manager, prior to ignition.

Please make check payable to Coeur D'Alene Tribe - Smoke Management Program and return completed forms to:

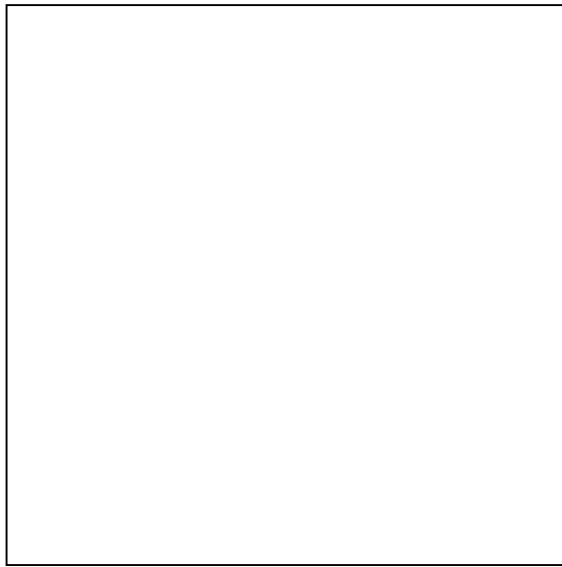
Coeur D'Alene Tribe
Smoke Management Program
Tribal Headquarters
Plummer, Idaho 83851

DETAILED INFORMATION SHEET

Please locate and identify in the Section below: Field (s) to be burned, access roads, highways, houses, other sensitive areas or hazards and include arrows with distances to sensitive areas outside of this section. When more than one field is shown, label the field using the field number from Page 1.

T: _____ R: _____ Section: _____

Field Number(s): _____



N



One mile

Special Burn Considerations:

Appendix D: Confederated Tribes of the Umatilla Indian Reservation SMP

Environmental, Science & Technology Program

CONFEDERATED TRIBES
of the
Umatilla Indian Reservation

P.O. Box 638
73239 Confederated Way
Pendleton, Oregon 97801
Phone (541) 966-2400
Fax (541) 278-5380

August 20, 2002

Mr. Tod Barnell
NTEC
2221 Rio Grande, NW
Albuquerque, NM 87104
Subject: CTUIR Smoke Management Plan

Dear Mr. Barnell:

In reference to our telephone conversation this morning I am providing you with the following information:

- The CTUIR has adopted the Umatilla County's Smoke Management Plan which we are enclosing.
- The address of Oregon State Burning regs can be found at
[http://arcweb.sos.state.or.us/rules/OARS 300/OAR 340/340 264.html](http://arcweb.sos.state.or.us/rules/OARS%20300/OAR%20340/340%20264.html)

I hope that this information is of use and helpful for what you are looking for. Feel free to contact me at (541) 966-2410.

Sincerely,

John Cox, Air Quality Coordinator
Environmental Sciences and Technology Program
Enclosure 1

TREATY JUNE 9, 1855 CAYUSE, UMATILLA AND WALLA WALLA TRIBES

Draft Document: January 24, 2003

UMATILLA COUNTY BURNING PERMIT INFORMATION

Oregon law requires permission for all open burning in Umatilla County. Approval may be obtained from:

1. Your local fire department or fire district within a city or rural fire district.
2. U.S. Forest Service for land managed by the Forest Service.
3. Oregon State Department of Forestry (OSDF) for lands within the state forest protection boundary and within one-eighth mile of that boundary. Generally that boundary in Umatilla County begins along the foothills of the Blue Mountains and continues east to the Union County line. For any information on this boundary please contact OSDF, 1055 Airport Road, Pendleton. 541-276-3491.
4. The Umatilla Tribal Fire Department for all land within the Umatilla Indian Reservation.
5. Umatilla County for other land not within a taxing fire district. Permits are issued by the Planning Department, County Courthouse, 216 S.E. 4th Street, Pendleton, OR 97801. If in doubt about whether lands are within a local fire district, contact the nearest fire district or the Umatilla County Assessor, County Courthouse, Pendleton, 276-7111.

Instructions:

1. Fill out the burning permit form. Permits may be obtained at the Planning Department, County Courthouse, Pendleton, the Milton-Freewater Extension Office or by calling 278-6262 but are valid for a calendar year only. A new permit must be obtained each calendar year. For large farms with multiple field burns please attach a list of each field to be included on the permit by map and tax lot. Only one fee will be charged for fields under the same farm operation.
2. Return the form along with the fee (agricultural \$20.00, residential \$10.00) to Umatilla County Planning Department, 216 SE 4th Street, Pendleton, OR 97801. Checks should be made out to "Umatilla County".
3. You will receive a validated copy for your records with an assigned permit number. You will need the permit number when you intend to burn.
4. Once a permit has been obtained call the toll-free telephone number 1-800-305-2876 (or 278-6397) on the day of the intended burn. If it is a "burn day" leave a recorded message with your name, permit number, location, type and size of burn.
5. Approval to burn will be based upon the daily smoke dispersal forecast and/or fire danger. No agricultural or residential burning will be allowed on "no burn days".
6. You will be held responsible for conforming to the following conditions:
 - A) On field burns or other large burns, the area must be surrounded by a fire break of at least ten feet in width. The break must be plowed or disked to mineral soil.
 - B) There must be water spray equipment on site with enough personnel to operate the equipment. For field burns or isolated locations the equipment must be on a truck or other motor vehicle capable of travel over the area to be burned.
 - C) Unless other instructions are given, burning hours are from 7 a.m. until sunset. No additional fuel may be added within one-half hour prior to sunset. The fire must be patrolled until fully extinguished. Fires must not be left unattended.

D) Burning must be suspended if:

1. temperatures rise above 95
2. wind velocity exceeds 20 m.p.h.
3. humidity falls below 20%

E) State law (OAR 340-23-042) strictly prohibits burning rubber products, wet garbage, plastic, petroleum products, animal remains and other material that emits dense smoke or noxious odors.

7. Burning permits are required for common burn barrels. Metal barrels must be in good condition and have a heavy duty screen top. The ground around the barrel must be cleared and maintained at least ten feet around of all material that could cause a fire to escape. Burn barrel standards and safety tips are available from the County Planning Dept.

8. Burning permits may be revised or cancelled by the Board of County Commissioners or the State Fire Marshal due to severe fire hazard conditions, weather, or for smoke management. All those who burn are reminded that they are responsible for damage to property, the cost of fighting a fire, and possibly civil and/or criminal penalties if they burn without a permit, if they do not comply with the terms of the permit, or if, through negligence, the fire spreads across property lines.

County burning permits are issued in accordance with provisions of ORS 476.380 and County Ordinance #94-05 (Amended).

By Order of the Umatilla County, Board of Commissioners, August 24, 1994

For information contact: Umatilla County Planning Department, (541) 278-6252

DEQ RULES ON OPEN BURNING WITHIN UMATILLA COUNTY

The Department of Environmental Quality (DEQ) wants residents in Umatilla County to be aware of the state's open burning regulations which protect public health and the environment. When possible, DEQ encourages residents to reduce, reuse and recycle. For example, yard wastes can be mulched or composted to return nutrients to the soil and minimize impact to the environment. When feasible, waste should be sent to an authorized landfill rather than be burned.

Outdoor burning, including "burn barrels" and burning piles, is regulated by state and local laws. Some cities and counties such as Pendleton, Hermiston and Milton-Freewater and Umatilla County have local burning ordinances that require permits and restrict burning.

Don't risk a fine. Here is what you need to know about outdoor burning:

- Determine if there is an alternative method to burning for waste disposal.
- Domestic or residential open burning is allowed, subject to restrictions of the Fire Marshall and the local Fire Department and the Umatilla County Smoke Management Program.
- Always contact your local fire department or rural fire district before you burn to see if a permit is required.
- Also contact the Umatilla County Smoke Management Program at 1-800-305-2876 or 278-6397 before you burn to see if it is an appropriate day to burn. Verify the safety requirements for burning. Determine if it is an appropriate day to burn. Determine if the material is appropriate for burning.
- DEQ regulations prohibit open burning of the following materials anytime and anywhere in Oregon:
 - Garbage
 - Plastic
 - Wire insulation
 - Rubber products
 - Automobile parts (auto bodies)
 - Tires
 - Waste oil, or other petroleum products
 - Treated wood (including wood with glues; treated with petroleum products; or treated with other material that will create dense smoke)
 - Asphalt
 - Dead animals
 - Food service waste, and
 - Any material that creates dense smoke or noxious odors
- DEQ regulations prohibit industrial open burning. This includes any waste that may accumulate at any manufacturing or industrial facility; including paper, pallets and manufacturing by-products such as wood waste.
- DEQ regulations prohibit the open burning of Construction, Demolition, Commercial and Land Clearing Debris waste within the incorporated city limits of Pendleton, Hermiston, Milton-Freewater or within three (3) miles of these cities. Construction and demolition waste refers to combustible waste from construction, destruction of structures, and the clearing of any site for land improvement or cleanup. This does not include agricultural waste. Under extraordinary circumstances, DEQ may issue a Letter Permit to authorize the open burning of Industrial, Construction, Demolition or Commercial wastes when no other method of disposal is available. To apply for such a permit please see the application instructions on the reverse side of this paper.

- Agricultural open burning, also known as field burning, is exempt from state regulations east of the Cascade Mountains, but is regulated by the Umatilla County Smoke Management Program and Airshed Smoke Management Ordinance in Umatilla County.

Contact the local Fire District, the Umatilla County Smoke Management Program at 1-800-305-2876, or the Air Quality Program at DEQ in Pendleton at 276-4063 or 1-800-452-4011 for further information.

Application Instructions for an Open Burn Letter Permit from DEQ for:

- * Industrial,
- * Commercial,
- * Construction or
- * Demolition debris.

Open burning of Industrial, Construction, Demolition and Commercial Waste is prohibited within three miles of the corporate city limits of Pendleton, Hermiston or Milton-Freewater. Under extraordinary circumstances, DEQ may issue an Open Burning Letter Permit to authorize the open burning of this waste. The local Fire Department and Umatilla County Smoke Management Program must also issue a permit in addition to the DEQ permit prior to burning the material. It should be noted that DEQ's policy is to limit the amount of this type of material to be burned especially during the winter months when the air quality is poor. To obtain a permit for burning material of this nature will need adequate justification.

To apply for a "letter permit" to open burn industrial, commercial, construction or demolition debris the Department requires certain information. Please send this information to DEQ at 700 SE Emigrant, Suite #330 Pendleton, OR 97801 or stop by our office on the third floor in the State Building in Pendleton. Please submit the following information:

1. The quantity and type of material proposed to be burned;
2. A listing of all alternative disposal methods and potential costs which have been identified or investigated;
3. The expected amount of time which will be required to complete the burning;
4. The methods proposed to be used to insure complete and efficient combustion of the material;
5. The location of the proposed burning site;
6. A diagram showing the proposed burning site and the structures and facilities inhabited or used in the vicinity including distances thereto;
7. The expected frequency of the need to dispose of similar materials by burning in the future (if the Department issues an Open burning permit, it is expected that it will only be a one time occurrence); and,
8. Any other information which the applicant considers relevant or which the Department may require.

If DEQ issues a "letter permit", please be aware that you will be required to comply with certain safety conditions such as "attending the fire at all times" and "ensuring that the fire is fully extinguished by dusk".

Contact the Department of Environmental Quality at our Pendleton Office. Ask them to clarify the rules. Please see OAR 340-23-055 and OAR 340-23-100 for complete information on open burning of this type of material. The Department may deny an application for a letter permit or place conditions on the burning for any number of reasons outlined in these rules.

Contact the local fire department or the rural fire district, the Umatilla County Smoke Management Program at 1-800-452-4011 for further information.

Umatilla County Smoke Ordinance - DEQ Input

Notwithstanding the requirements set forth by Umatilla County and the local fire districts, any person with commercial waste, construction waste or and demolition waste to be burned in an open burn control area or any person wishing to open burn industrial waste anywhere in Umatilla County, with the exception of the Confederated Tribes of the Umatilla Indian Reservation Lands, must contact me Department of Environmental Quality for additional requirements and regulations prior to conducting any open burning.

The definition of industrial waste, construction waste, demolition waste, commercial waste and open burn control areas are defined as follows:

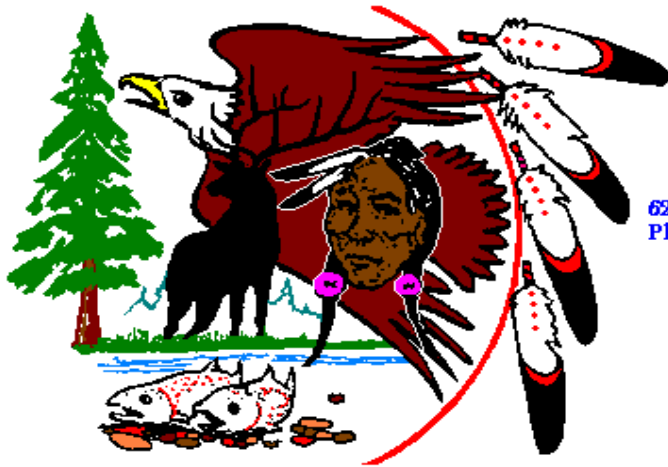
(Industrial Waste) - Any material, including process waste, produced as the direct result of manufacturing or industrial process.

(Construction Waste) - Any material resulting from or produced by a building or construction project. Examples of construction waste are wood, lumber, paper, crating and packing materials used during construction, materials left after completion of a construction project and materials collected during cleanup of a construction site.

(Demolition Waste) - Any material resulting from or produced by the complete or partial destruction or tearing down of any manmade structure or the clearing of any site for land improvement or cleanup excluding yard debris (domestic waste) and agricultural waste.

(Commercial Waste) - Any material except for agricultural waste, domestic waste, construction waste, demolition waste, industrial waste or slash. Examples of commercial waste are waste material from offices, wholesale or retail yards and outlets, warehouses, restaurants, mobile home parks, and dwellings containing more than four family living units such as apartments, condominiums, hotels, motels or dormitories.

(Open Burn Control Areas) - All areas in or within three miles of the corporate city limits of cities with a population of 4,000 or more persons. For Umatilla County, these cities presently include Pendleton, Hermiston and Milton-Freewater.



**Spokane Tribe of Indians
Natural Resources Department
Air Quality**

6290B Ford-Wellpinit Road P.O.Box 480, Wellpinit, WA 99040
Phone 509-258-9744 Fax 509-258-9600
<http://www.spokanetribe.com>

E. Jon Castillo - Program Manager
jonc@spokanetribe.com

To: Todd Barno, ITEP

From: E. Jon Castillo

Subject: Smoke Management Plan

Todd;

A smoke management plan for the Spokane Indian Reservation is nonexistent. It is, however scheduled to be addressed in the future by the IRMP.

What we do have in place right now is as follows:

1. Obtain smoke management approval through the Spokane Tribal NRD Air Quality Director. Contact Spokane fire Weather Office to discuss smoke transport and stability.
2. Develop smaller sized burn units to regulate the amount and timing of smoke production. If possible, complete all ignitions by late afternoon, before diurnal convective winds shift down slope and valley. Consider mop-up operations to reduce emissions.
3. Be attentive of meteorological conditions, which cause inversions.
4. Contact the Indian Health Service in Wellpinit, WA to determine the extent of smoke related health concerns in the burn area and mitigation measures to identify health problems prior to ignition.

The above is taken from BIA Basic Burn Plan used for site prep for reseedling of timber harvest areas and hazard fuel reduction.

If I may be of further assistance, please give me a call or email me at the office.