

# **National Fire Emissions and Modeling Technical Workshop**

## **Briefing Paper**

### **DRAFT**

#### **Introduction**

Rapid changes in policy and regulation governing emissions from fire are currently underway. Wildland managers are increasing the use of fire as a tool to reduce unwanted fuels and manage ecosystems, in accordance with the National Fire Plan and the recent Healthy Forests Initiative, while agricultural burners want to maintain their ability to burn for crop management purposes. At the same time, air quality managers are working to reduce local and regional impacts from fire emissions pursuant to the Clean Air Act's National Ambient Air Quality Standards (NAAQS), Regional Haze Rule (RHR), as well as nuisance concerns.

All Regional Planning Organizations (RPOs) are faced with similar technical issues with regarding fire and its effects. A national technical discussion can lead to better communication and coordination, producing both national consistency and specific regional and local solutions where needed. Workshop participants will discuss how to integrate the objectives of using fire for land management purposes and protecting air quality through the development and use of technical tools.

#### The Purpose of the Workshop

The primary objectives of the workshop are (1) the development short-term technical approaches needed for atmospheric modeling under Section 308 of the RHR; and (2) the development of long-term goals and direction for fire and air quality modeling. The workshop will bridge current knowledge with future needs and address technical tools for fire emissions planning to support the development of State and Tribal Implementation Plans (SIP/TIP). Central topics of workshop include fire activity tracking, emissions estimation, projections of fire activity, air quality modeling and smoke monitoring will be the central topics of the workshop.

The national workshop will address the following objectives:

1. Identify common ground on a national level, and develop consistent technical approaches to produce tools that benefit all RPOs
2. Identify the regional/tribal/local conditions that dictate the need for approaches specific to these conditions
3. Identify methods to project future fire emissions for planning purposes (e.g., 2018 and other milestones)
4. Consider the needs of SIP/TIP planning and development in the assessment of technical approaches and needs
5. Develop a strategy and milestones to ensure the implementation of workshop products, including identification of a responsible entity to steward the process

## **Background and Need for Workshop**

In 1997, a group of fire experts was chartered by the National Wildfire Coordinating Group to convene a national planning workshop of a diverse group of 86 subject matter experts to address technical aspects of fire and air quality management. The final product of this effort was a published technical report entitled *The National Strategic Plan: Modeling and Data Systems for Wildland Fire and Air Quality-PNW-GTR-450*, February 1999 (Strategic Plan).

This Strategic Plan is a technical discussion of the implementation and development of models and data systems used to manage the air quality impacts of wildland and prescribed fires. The Strategic Plan identifies information needs to support management and policy development, and identifies strategies for developing and implementing models and data systems. These strategies were categorized into nine program elements, each with a description of its scope, current situation, desired state, and strategies to reach that state.

Prior to the 1997 workshop, smoke management modeling and data systems were developed and applied in an ad hoc manner, leading to inefficient application of data or modeling systems, and overlapping agendas. The goal of the 1997 technical workshop was to integrate and combine systems to ensure that the best tools were available for land and air quality managers. This effort did not address agricultural burning explicitly, although the Strategic Plan has some applicability to this sector.

The time has come to revisit these issues, particularly in light of new regulations that govern decision-making processes for land and air quality managers. For example, the Regional Haze Rule requires all air quality regulators address fire emissions, assess current and project future fire emissions, and apportion contribution of fire emissions to air pollution for all sources of fire (wildfire, prescribed fire and agricultural burning). These RHR require the collection and assessment of data at much finer temporal and spatial scales than before. At the same time, new tools and data systems that can address more demanding requirements on air quality regulators with respect to fire emissions are being developed in the federal agencies.

Additionally, current information and data are not consistent between states/tribes or RPOs, nor are approaches to modeling the contributions of fire sources to air quality. The workshop will provide a forum for interested stakeholders from RPOs, Environmental Protection Agency (EPA), and public and private land managers to discuss both common technical needs and goals, and to build on them, as well as, discover areas where needs diverge. This workshop will make current tools more accessible and applicable to a wider range of analytical, policy and planning issues; it will identify what new tools need to be developed, and will enable the evolution of a shared suite of tools that are applicable regionally and nationally across a broad spectrum of users.

## **Workshop Overview**

The EPA and the Western Regional Air Partnership in conjunction with other RPOs, the Forest Service and the Department of the Interior are planning this national workshop. The workshop is envisioned as a three-day event to be held in New Orleans in late April or early-May. Participants will include approximately 125 subject matter experts who represent diverse stakeholders from federal, state, tribal and private sectors, with interests in wildland management, agriculture and air quality regulation.

The workshop will balance the competing objectives of the increased use of fire to restore ecosystems and reduce fire hazard versus protection of air quality vis-à-vis the RHR, NAAQS, and nuisance avoidance. The workshop participants will (1) assess current fire emissions technical tools; (2) identify ways to broaden the applicability of existing tools as well as identifying needed tools for the future; and (3) identify specific strategies for accomplishing the workshop findings and recommendations. The workshop findings will be published in a timely manner so that the findings can be utilized for both immediate SIP/TIP modeling needs and for implementation of longer-range technical goals. The report will also be useful in supporting SIP/TIP planning for immediate and long-term air quality requirements.

The workshop will involve a blend of plenary presentations, breakout group work, poster sessions, and networking events. Breakout groups will be developed so that both wildland fire and agricultural burning are addressed. The workshop will address the topic areas below in a multi-dimensional fashion. These dimensions will include planning, operations and monitoring; temporal ranges (from individual event occurrence to longer-term averages); and spatial ranges (from specific event locations to region-wide considerations).

#### I. Fire Activity Tracking

- Fuel and Fire Characterization
- Remote Sensing
- National Fire Activity Database

#### II. Emissions Estimation

- Emission Calculation Techniques
- Emission Reduction Techniques
- Emissions Modeling Systems to Calculate Emissions
- Projection of Future Fire Activity/Emissions

#### III. Air Quality Modeling

- Approaches to Transport, Dispersion, Background and Secondary Pollutant Formation
- Air Quality Impact Assessment and Apportionment
- Fire Behavior

#### IV. Smoke Monitoring

- Wildfire
- All Other Fire

The planning and implementation of the workshop will be undertaken by a team of four entities, whose responsibilities are detailed below.

Inter-RPO Oversight Committee (IROC): Over-all Planning and Implementation of Workshop

Workshop structure, presentations, topics, breakout constituency/make-up, poster session criteria, breakout group deliverable outline, breakout session facilitation, and follow-up including Report review and publication as well as stewardship of implementation strategies identified during the workshop.

Western Governors' Association: Administration/Contracting & Meeting Logistics

Hotel contract, meeting room/AV arrangements, invitations, receptions, printed materials, registration, contractor contracts, etc.

Rebecca Reynolds Consulting, Inc.: Project Management

Workshop design and implementation, workshop management/facilitation, management/coordination of overall project and IROC work.

ECR: Technical Writing and Support

Breakout group note-taking, pre-workshop technical writing, and Report drafting.