The Western Regional Air Partnership: Successor to the Grand Canyon Visibility Transport Commission

David Steele

The U.S. Environmental Protection Agency is currently drafting regulations to address visibility impairment in this country's national parks and wilderness areas. One of the areas of most concern for future protection is Grand Canyon National Park and the surrounding Colorado Plateau region.

In the 1990 amendments to the Clean Air Act, Congress included a directive for specific study of "regional haze" in this area of the country, which lead to establishment of the Grand Canyon Visibility Transport Commission. The Commission spent four years identifying and addressing the sources of visibility degradation on the Colorado Plateau. During this process, the group developed state-of-the-art technical information on regional transport of air pollutants.

In 1996, the Governors, tribal leaders and federal agencies comprising the Grand Canyon Visibility Transport Commission issued their recommendations to address visibility impairment on the Colorado Plateau. These recommendations are widely viewed as the most comprehensive policies ever proposed to address the issue of visibility impairment. They reflect innovative thinking and provide new and creative ways of addressing visibility impairment. The key elements of the Commission's recommendations include:

- *Reducing and Preventing Pollution.* Pollution prevention and reduction of per capita pollution are high priorities. The Commission recommended policies based on energy conservation, increased energy efficiency and promotion of renewable resources for energy production.
- *Tracking Clean Air Corridors.* Clean air corridors are certain regions which provide clear air to Class I Federal areas. The Commission recommends careful tracking of emissions growth in those corridors that may affect visibility in Class I Federal areas.
- *Stationary Sources.* The Commission recommends implementing current Clean Air Act requirements. If projected emission targets for stationary sources are exceeded, the Commission recommends the implementation of a market-based trading program. An improved monitoring and accounting system will be developed as well.
- *Possible Strategies for In-Park and Neighboring Area Emissions.* The Commission's research and modeling show that a host of sources both within and adjacent to parks and wilderness areas, cause significant adverse visibility impacts. The Commission recommends that local, state, tribal, federal, and private parties cooperatively develop strategies for reducing or preventing visibility impairment caused by emissions from areas within and adjacent to parks and wilderness areas.
- *Hold Mobile Source Emissions Constant.* The Commission recommends holding mobile source emissions constant through 2040 based on a regional emissions budget, and also endorses national strategies aimed at further reducing tailpipe emissions using the so-called 49-state low emission vehicle or LEV.
- *Managing Prescribed Fire Emissions.* The Commission recognizes that fire plays a significant role in visibility on the Plateau. The Commission also recognized that prescribed fire is an important management tool for federal, state, tribal and private land managers. Accordingly, the Commission recommended the implementation of programs to minimize emissions and visibility impacts, as well as to educate the public on these issues. These visibility impacts could be significant, but will be mitigated through smoke management programs.
- *Recognizing Mexico's Contribution to Visibility Impairment.* The Commission recognizes that pollution from stationary, mobile and area-wide emission sources in Mexico contribute to visibility degradation on the Colorado Plateau. Additionally, unless steps are taken, expected economic development in the border region will increase transboundary pollution. The Commission lacks the authority to address these problems directly, but it supports several ongoing efforts to develop emission inventories, establish binational institutions and bilateral agreements to facilitate cooperation, and create incentives for the implementation of cost-effective air pollution abatement strategies.

Given the breadth of the Commission's recommendation, they also concluded that there is a need for an "entity like the Commission to oversee, promote, and support many of the recommendations."

The Western Regional Air Partnership (the Partnership) is that entity. It was established in the fall of 1997 and consists of the governors from the states of Arizona, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, Washington and Wyoming. The tribes represented are: Pueblo of Acoma, Campo Band of Kumeyaay Indians, Cortina Indian Rancheria, Hopi Tribe, Hualapai Nation of the Grand Canyon, Jicarilla Apache Tribe, Northern Cheyenne Tribe, Salish and Kootenai Confederated Tribes, Pueblo of San Felipe, and Shoshone-Bannock Tribes of Fort Hall. The U.S. Departments of Agriculture and Interior and

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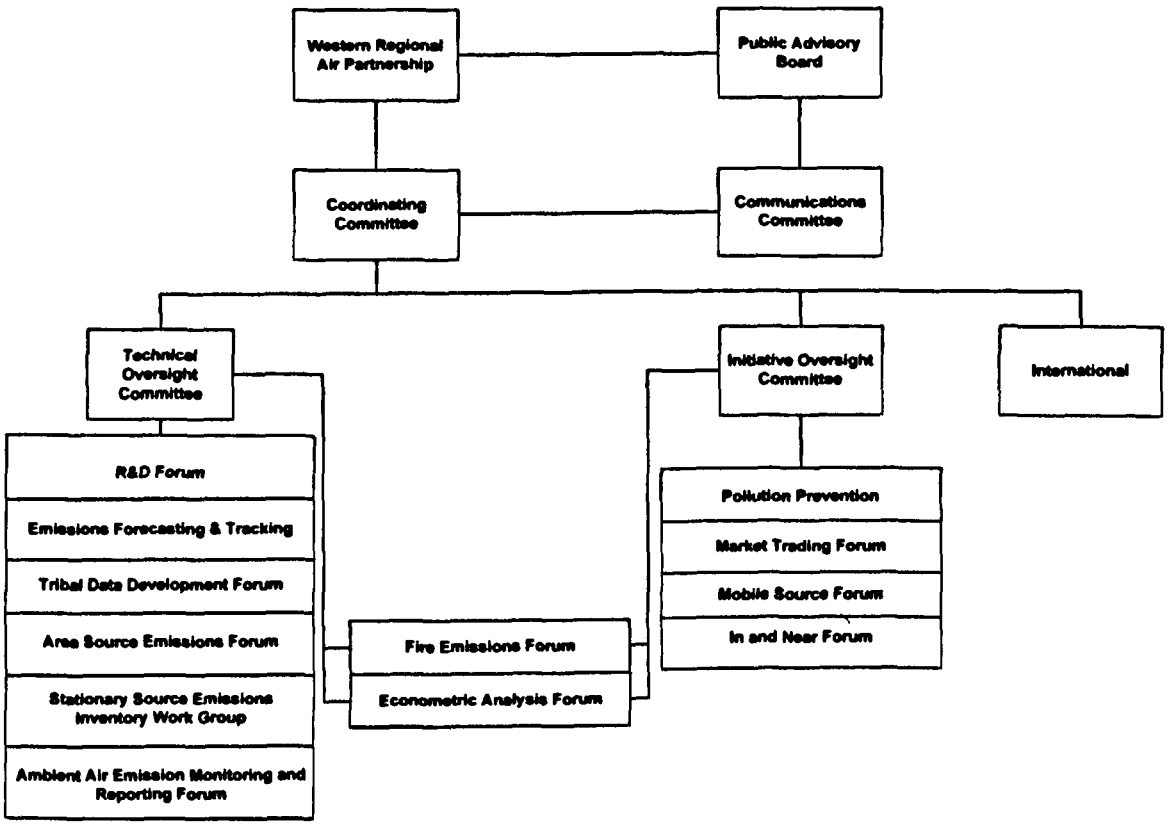

Figure 1. Organizational Structure of the Western Regional Air Partnership

Environmental Protection Agency also serve on the Partnership.

Similar to the Commission, the Partnership attempts to resolve all issues on a consensus basis. Voting is usually reserved for only administrative matters. Also, all activities of the Partnership are open to the public and in fact, public participation is strongly encouraged.

The Partnership's organizational structure consists of four standing committees, a public advisory board and several forums created to accomplish specific tasks (Figure 1). Each of these sub-units of the Partnership contains representatives from local governments, business and industry, environmental organizations and academia. Below is a more detailed description of the standing committees:

The Technical Oversight Committee. This committee identifies technical issues and establishes forums to analyze, monitor and review science-based factors relating to Western states' air quality. This committee reviews the findings of these bodies and makes recommendations to the full Partnership.

The Initiative Oversight Committee. This committee is responsible for the coordination and development of strategies to prevent air pollution and improve air quality. This committee also works with forums to develop specific policy recommendations for the Partnership.

The Communications Committee. This Committee oversees interactions among the standing committees and with the general public. This committee also is responsible for developing a public education campaign to provide background information and explain the rationales behind the Partnership 's recommendations.

The International Projects Committee. This Committee oversees the Partnership's international projects, including cross-border air quality issues involving other organizations.

The Public Advisory Board (PAB) is also critical to the function of the Partnership. It provides policy guidance to the Partnership as well as making recommendations for additional issues to be addressed. Like the other Committees, the PAB consists of a cross section of representative stakeholders from throughout the region.

The remaining elements in the Partnership's organizational structure are the issue specific forums. Since its establishment in 1997, three different forums have been established and are up and running. They are:

The Market Trading Forum. This forum is developing the stationary source market trading program pursuant to the Commission's recommendations.

The Fire Emissions Joint Forum. This Forum will make recommendations to the Partnership on estimating the impacts on visual air quality from natural and human-caused fires, developing the means for tracking fire emissions, and strategies and methods to manage emissions from these sources.

Special SO_2 Inventory Work Group. Given the Commission's initial focus on SO_2 emissions as a determinant of reasonable progress toward meeting the national visibility goal in the western U.S., this work group is charged with verifying, or "truing-up," regional estimates of this species.

There are a number of other forums that have been authorized by the Partnership but are not as far along. They include: Emissions Inventory Forum; Pollution Prevention; Areas in and Near Class I Areas; Mobile Sources; Area Sources; Regional Meteorology; Emission Inventories.

The Partnership is currently seeking interested individuals to participate on the various forums. Additional information can be obtained by accessing the Partnership's homepage at http://www.westgov.org/wrap/ or by contacting either of the two individuals below:

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Benefit-Cost Analysis of the RECLAIM Program

Nancy Pfeffer

The most common approaches to the control of environmental pollution are emission standards and emission fees. Standards strictly limit the amount of pollution, but provide no incentive to reduce emissions below the standard. Fees, in theory, provide an economic incentive for firms to reduce pollution, but do not in themselves limit emissions.

An alternative policy is the trading of pollution permits, which in theory should control pollution more cost-effectively than prescriptive requirements such as standards. As early as the 1920's, economists pointed out the potential for market forces to serve as an incentive to reduce pollution. The Economic Incentive Programs described in the Clean Air Act Amendments of 1990 provide a statutory basis for emissions trading programs at the federal, state, and local levels.

In a research project for a graduate course, another student (Ariel Ramirez, PhD candidate at the University of Southern California) and I evaluated the costs and benefits of an emissions permit trading program in the Los Angeles metropolitan area. The program, known as RECLAIM (REgional CLean Air Incentives Market), allows industrial facilities to reduce emissions of nitrogen oxides (NOx) and sulfur oxides (SOx) either directly or by purchasing reductions from other facilities.

RECLAIM was adopted by the South Coast Air Quality Management District (the District) in October 1993, and it took effect in January 1994. The District, originally established in 1947 as the Los Angeles Air Pollution Control District, is among the oldest local air-quality regulatory bodies in the United States. It also has one of the toughest jobs: meeting stringent ambient air quality standards in the most heavily polluted air basin in the country.

Facilities entering the RECLAIM program are assigned a "starting allocation"—a permitted quantity of emissions—for each pollutant. Over the 10-year life of the program, each facility's allocations decrease annually. Facilities can meet these declining emissions caps by installing pollution control equipment, by modifying facility processes, or by purchasing credits (emission reductions) from other facilities in the program. The facilities' operating permits have been consolidated and reformatted to reflect the allocations.

Compliance with the allocations is determined partly through typical enforcement methods (site inspections, for example), but the RECLAIM program also requires participants to install continuous emission monitoring systems (commonly known as CEMS) that report emissions data electronically to the District every day.

For simplicity, we focused the analysis by:

- Calculating benefits and costs related only to the petroleum industry. In many respects, this industry accounts for a large portion of benefits and costs observed in the program generally.
- Calculating benefits and costs only for SOx.

The implications of these choices are discussed under Sensitivities and Uncertainties, below.

Methodology

Benefits and costs of the RECLAIM program were evaluated in comparison to traditional regulations known as "command-and-control." In other words, we calculated benefits and costs as the difference between what happened under RECLAIM and what would have happened under command-and-control regulations resulting in equivalent emissions reductions. Typical command-and-control requirements for the petroleum industry displaced by RECLAIM include the treatment of fuel gas to remove sulfur (thereby reducing SOx emissions) and the modification of refinery heaters to reduce NOx formation.

Since California must meet federal ambient air quality standards in all regions, RECLAIM should result in emission levels at least equivalent to those under command-and-control. In theory, then, the RECLAIM program must achieve at least the same quantity of reductions as the command-and-control scheme.

Benefits and costs were quantified by interviewing District and industry personnel and reviewing industry cost records. To estimate costs and benefits for the Southern California petroleum industry, we determined costs and benefits for one company (ARCO) and extrapolated those costs to the industry as a whole.

Benefits of RECLAIM

The largest benefit of the RECLAIM program is the cost savings to businesses that can now choose less expensive control methods than under command-and-control. The program benefits are, in effect, avoided costs in the private sector; no benefits were assumed to accrue in the public sector.

Two other potential types of benefits from the RECLAIM program were considered, but not quantified. The first was environmental and health benefits resulting from reduced emissions of SOx. Current and former District personnel confirmed that it was probably reasonable to assume that RECLAIM was an "air-quality neutral" program: in other words, enactment of RECLAIM in place of command-and-control regulations could be expected, over the life of the program, to achieve the same level of air quality improvement.[1] It is, of course, possible that RECLAIM will result in more air quality improvement than the command-and-control approach would have, particularly if emission reductions prove substantially less expensive or even profitable under the emissions trading

[1] Communications with M. Buckantz, Justice & Associates, and J. Broadbent, South Coast Air Quality Management District, March 1998.

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