

## **IMPROVE Steering Committee Meeting Summary**

### **July 18, 1989**

A meeting of the IMPROVE Steering Committee was held in Reno, NV on July 18, 1989. Attached is a list of those in attendance. These included representatives of the air pollution agencies of several state and multi-state organizations, a representative of EPA Region V, the IMPROVE Steering Group participants, and contractors responsible for operation of the monitoring program.

On behalf of the IMPROVE Steering Group and all of those in attendance, I would like to thank Lowell Shifley of the Nevada Division of Environmental Protection for his efforts in hosting the meeting.

### **Summary**

The objectives of the meeting were:

1. to provide a description of IMPROVE activities to those in attendance including the monitoring systems, field and laboratory operations, and data processing procedures,
2. to provide a forum to discuss the utility of the program and methods to increase its usefulness in the future, and
3. to discuss the future of monitoring for visibility protected Class I areas.

The meeting ended with a field trip to the South Lake Tahoe visibility monitoring installation operated by the Tahoe Regional Planning Agency.

Marc Pitchford presented an overview of the IMPROVE Program which included a brief discussion of the legislative, regulatory, and judicial aspects of visibility protection for Class I areas. He stated the objectives of the resulting monitoring strategy which was implemented via the IMPROVE Program and the approach employed to meet those objectives.

The IMPROVE Program is cooperatively managed by an interagency steering group with representatives of five federal government agencies (National Park Service, Forest Service, Fish and Wildlife Service, Bureau of Land Management, and Environmental Protection Agency). Representatives of those agencies (Brian Mitchell, NPS; Bud Rolofson, FWS; Scott Archer, BLM; Marc Pitchford, EPA; and Davie Dietrich on behalf of FS) briefly indicated their agencies interests in and participation with the IMPROVE Program as well as the other visibility-related activities of their agencies. The Clean Air Act of 1977 provides for affirmative action responsibilities of the land managers to protect the Class I areas in their charge from visibility impairments. Their role in the permitting process for new or modified sources requires that they have access to monitoring data.

A more detailed description of the monitoring program was then presented by representatives of Air Resource Specialists (David Dietrich and John Molenar) for the optical, scene, and meteorological monitoring; and University of California at Davis (Thomas Cahill, Robert Eldred, and Kent Wilkinson) for the aerosol sampling and analysis. These presentations covered monitoring system design, deployment, and operations as well as data processing and reporting.

Prior to the meeting, representatives for each of the states with monitoring had been sent data summaries for the monitoring conducted in their states and a set of photographs corresponding to the full range of visibility conditions. During the discussion of these data, additional information was requested which would allow the causes of the impairment in the photographs to be better understood. In order to meet this request, an extinction budget (i.e., apportionment of visibility impairment among the pollutant species) will be calculated for each photograph that corresponds with appropriate ancillary pollutant information.

William Malm described the Winter Haze Intensive Tracer EXperiment (WHITEX) which was co-sponsored by IMPROVE. This study involved the collection of air quality, visibility, and meteorological data in Northern Arizona and Southern Utah to assess the capability of monitoring approaches to identify the influence of a single large point source (in this case the Navajo coal-fire power generating station) on visibility at specific receptor locations (in this case the surrounding national parks). An integral part of this study was the injection of an artificial tracer into the source stack. The data from this study seems to indicate that a large fraction of the visibility impairment at Grand Canyon is due to Navajo power plant emissions.

Participants at the meeting were told of the availability of several documents that have been prepared with some level of IMPROVE Program sponsorship. These include "A Brief Overview of Mathematical Models and Tools for Analyzing Visibility Impacts," "Perception Thresholds and Recommended Screening Analysis Criteria for Plumes and Haze Layers," and "Workbook for Plume Visual Impact Screening and Analysis." In addition, a report on the methods to document and attribute existing impairment is expected to be completed by fall of 1989. A draft of the "IMPROVE Progress Report" (without the extensive appendices) was distributed to the participants for their review. This report documents the IMPROVE Program at about the same level of detail as was presented in the meeting.

Marc Pitchford led the discussion of the future of visibility monitoring with a briefing concerning EPA's preliminary plans for the establishment of a visibility monitoring reference method for use in visibility protected Class I areas. EPA hopes to have a reference approach for visibility monitoring by October of 1990. The plan is to require extinction coefficient monitoring by transmission measurement methods and scene documentation by photography, with aerosol composition monitoring to aid in source attribution as recommended though not strictly required. This information prompted a lively discussion in the meeting concerning the appropriateness of such an approach and the consequences of such a reference method for future monitoring programs. The suggestion was made that workshops on the subject be held with the participation of interested groups early in the process of selection of a reference approach.

In discussions on the future of IMPROVE, representatives of state and multi-state organizations indicated a strong sentiment of support for its continued operation. They were interested in a greater involvement in the way in which data was presented and discussed the possibility of identifying additional funds for expanding the program. WESTAR and NESCAUM representatives said that they have already indicated their support of the IMPROVE Program to EPA including an urging that EPA continue providing resources to ensure that the program continue. A copy of a letter from NESCAUM to John Calcagni of EPA's Office of Air Quality Planning and Standards is attached. At the present time EPA has only committed to one additional year of support for IMPROVE, after which they anticipate returning the resources to the 105 State Grant Funds from which they have been taken for the last few years.

Most of the participants took advantage of the field trip to Lake Tahoe in order to tour the visibility monitoring station that is operated by the Tahoe Regional Planning Agency. Though not directly a part of the IMPROVE Program, TRPA has taken advantage of the technology and procedures that were developed for IMPROVE to establish a cost-effective monitoring capability able to collect data which is directly comparable to those generate in IMPROVE. NESCAUM has also employed this approach for aerosol monitoring in their eight states, as has several of the land managers for non-IMPROVE monitoring efforts.

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## IMPROVE Steering Committee Meeting Agenda

Dates: July 18, 1989

Location: Reno, Nevada

8:15 am	Introduction	Marc Pitchford
8:30 am	Federal perspectives	Brian Mitchell, NPS Rich Fisher, FS Bud Rolofson, FWS Scott Archer, BLM David Stonefield, EPA
9:00 am	Monitoring overview	William Malm
9:15 am	Visibility measurements and data	John Molenaar
10:00 am	Break	
10:15 am	Aerosol monitoring and data	Thomas Cahill
11:00 am	Other IMPROVE activities	Marc Pitchford
11:30 am	Lunch	
12:45 pm	WHITEX	William Malm
1:15 pm	Future of IMPROVE (discussion)	Marc Pitchford
2:15 pm	Trip to Tahoe Regional Planning Agency IMPROVE "look-alike" site	
4:00 pm	Site tour	
5:00 pm	Adjourn	
5:00 pm	Dinner at South Lake Tahoe *or return to Reno	
6:30 pm	Return to Reno	

\*We'll poll the meeting participants earlier in the day to determine interest in dinner.

**IMPROVE Steering Committee Meeting Participants  
July 18, 1989**

<u>Name</u>	<u>Organization</u>	<u>Phone</u>
Marc Pitchford	EPA – Las Vegas	702 798-2363
Bud Rolofson	US FWS	303 969-2071
John Leary	Colorado Dept. of Health	303 331-8502
Dan Ely	Colorado Dept. of Health	303 331-8529
Gary Neuroth	Arizona DEQ	602 257-2346
Jeff Chaffee	Montana Air Quality Bureau	406 444-3454
Dave Dietrich	Air Resource Specialists, Inc.	303 484-7941
Frank Van Haren	Washington Dept. of Ecology	206 459-6246
John Core	Oregon Dept. of Environmental Quality	503 229-5380
Bob Eldred	Univ. of California – Davis	916 752-1124
Pete Beveredge	Univ. of California – Davis	916 752-1124
John O’Gara	Naval Weapons Center, China Lake	619 939-3411
Scott F. Archer	USDI – Bureau of Land Management	303 236-1762
W.W. Parks	Virginia Dept. of Air Pollution Control	804 786-3356
Tom Cahill	Univ. of California – Davis, Crocker	916 752-1120
John Molenaar	Air Resource Specialists, Inc.	303 224-9300
Rich Poirot	Vermont Div. of Air Pollution Control & NESCAUM	802 224-8731
William Malm	National Park Service	303 491-8292
Burnell Cordner	Utah Bureau of Air Quality	801 538-6108
Tony VanCuren	California Air Resources Board	916 323-1530
Curtis Jordan	Tahoe Regional Planning Agency	702 588-4547
Brian Mitchell	National Park Service, Air Quality Div.	303 969-2071

Lowell Shifley	Nevada Div. of Environmental Protection	702 885-5065
Robert E. Smith	Nevada Div. of Environmental Protection	702 885-5056
Lino Castanares	EPA – Region 5 (Chicago)	312 886-6047
Kent Wilkinson	Univ. of California – Davis	916 752-1120



## NORTHEAST STATES FOR COORDINATED AIR USE MANAGEMENT (NESCAUM)

### MEMBERS:

CONNECTICUT AIR COMPLIANCE UNIT  
MAINE BUREAU OF AIR QUALITY CONTROL  
MASSACHUSETTS DIVISION OF AIR QUALITY CONTROL  
NEW HAMPSHIRE AIR RESOURCES DIVISION

NEW JERSEY DIVISION OF ENVIRONMENTAL QUALITY  
NEW YORK DIVISION OF AIR RESOURCES  
RHODE ISLAND DIVISION OF AIR RESOURCES  
VERMONT AIR POLLUTION CONTROL PROGRAM

July 13, 1989

Mr. John Calcagni, Director  
Air Quality Management Division  
Office of Air Quality Planning and Standards  
U.S. EPA  
Research Triangle Park, NC 27711

Dear Mr. Calcagni:

In regard to recent phone conversations in which we discussed potential federal support for continuation of the recently established NESCAUM Regional Particle Monitoring Network, I am very pleased to report that the NESCAUM states have managed to secure sufficient funds to support a second year of operation of this monitoring effort. That support will cover our costs for sampling and filter analysis through September 1990, so we will not require any supplemental funding support at this time.

As you may recall, one of the possibilities we discussed was using a small portion of the EPA funds directed to the IMPROVE monitoring program to support the NESCAUM effort. This seemed logical, given the similar objectives of the NESCAUM and IMPROVE programs, the common sampling methods, and the Section 105 nature of EPA support for IMPROVE.

In discussing this possibility with the Northeast state air program representatives, I was somewhat surprised to learn of the high regard which the Northeast states have for the IMPROVE program, and the strongly held view that NESCAUM activities should not in any way diminish the integrity and continuity of the IMPROVE database. This was particularly surprising given the relative lack of IMPROVE sites in the eastern states and the fact that EPA's current funding support for visibility monitoring relies solely on Section 104 funds which arguably could be used for other state program activities. Despite these potential concerns, the Northeast states believe that IMPROVE is one of EPA's most valuable and cost-effective monitoring efforts and NESCAUM believes that the existing IMPROVE network should be continued and, if possible, expanded (Though not by means of withheld state 105 funds).

The existing IMPROVE database provides otherwise unavailable information of obvious relevance to Section 169A visibility protection requirements. In addition, the remote locations of IMPROVE sites, the excellent spatial coverage of IMPROVE sites through the western U.S. (with NESCAUM in the Northeast), the detailed but highly cost-effective nature of the routinely measured variables, and the relevance of these measurements to a variety of related air quality issues, all are factors which extend the value of IMPROVE measurements well beyond the 169A objectives. In NESCAUM, for example, we feel that our IMPROVE-like measurements will have direct relevance to potential development of a secondary fine particle standard(s) or possible future aerosol acidity standards, to development of state regulatory programs for PM-10 attainment and maintenance and for air toxics control, for identification of local, regional, and distant source/receptor relationships, and as a most effective means to perceive the effectiveness of a variety of source specific, state, regional, national, and international pollutant control programs (acid rain controls, NESHAPS, and EPA's woodstove NSPS, for example).

I emphasize these points because of a long-standing NESCAUM concern that visibility research and monitoring is considered relatively unimportant at EPA headquarters. This low

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priority suggests a failure to consider the very substantial contributions which visibility-related research and monitoring have made and continue to make in so many parallel subject areas. The visibility/ human health connection, for example, is so strong that a number of epidemiological studies have utilized airport visibility or nephelometer data as a surrogate for particulate matter concentrations, and have frequently observed that visibility correlates better with certain adverse health effects than most if not all routinely measured particulate species, including TSP, IP1-, RP, etc.

Another important consideration is that impaired visibility is the principal means by which the American public perceives air pollution. Virtually every attempt at economically quantifying the potential benefits of improved visibility has indicated that the public values visibility highly and would be willing to pay substantially for improvements in visual air quality.

A final consideration is that the potential regulatory tools under existing Clean Air Act Sections 169A and 109 could be quite effective (if implemented) at improving visibility, while reaping substantial ancillary benefits (acid deposition, acid aerosols, other fine particles, SO<sub>2</sub>, NO<sub>x</sub>, OC, etc.). From NESCAUM's perspective, it seems illogical that EPA has premised its indefinite postponement of Regional Haze Regulations under 169A, and a Secondary Fine Particle Standard under 109, on a stated position that sufficient scientific understanding does not exist to allow EPA to proceed in these areas while at the same time, EPA has relegated visibility monitoring and research (to gain sufficient scientific understanding) to very low priority.

To update you on the current status of the NESCAUM particle monitoring network, I've attached a one page summary and a memo submitted to the NESCAUM Directors at their most recent meeting. In particular, I'd like to call your attention to Rudy Husar's Voyager plots in Attachment C. We hope to use Voyager as our means of receiving raw data from the analytical laboratory, screening it for errors and outliers, interpreting and reporting on the results, and sharing this information with all other interested organizations or individuals.

I'm sure any attention you could give this matter would be most productive and greatly appreciated by state pollution control programs in all sections of the country.

Sincerely,

  
Michael J. Bradley  
Executive Director

Enclosure

cc: NESCAUM Directors  
W. Rosenberg, OAR  
D. Clay, OAR  
G. Emison, OAQPS  
R. Cunningham, OAR  
W. Laxton, OAQPS  
W. Wilson, ASRL  
C. Simon, EPA II  
L. Gitto, EPA I  
S.W. Becker, STAPPA  
J. Leary, WESTAR