



In the last edition...

NARSTO 2005 Executive Assembly Meeting Report
Emission Inventory Assessment Goes to Press
Air Quality/Health Effects Forum
Mexico NEI
Desktop Air-Chemistry and Reactivity Simulation
RRWG Meeting Held in May 2005

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<http://www.NARSTO.org>

NARSTO Executive Assembly To Be Held In Ottawa

The 2006 NARSTO Executive Assembly will be held May 9 – 10, 2006, at the Lord Elgin Hotel in Ottawa, Ontario, Canada. Invitations were mailed to NARSTO members the week of March 6. Reservations at the hotel should be made before April 7 in order to take advantage of the special room rate.

This year's Executive Assembly will feature a panel discussion of the implications of the Energy Policy Act of 2005 for air quality management, a review of air quality forecasting activities in Canada, the United States and Mexico, a discussion of GEOSS (Global Earth Observation System of Systems) and a possible role for NARSTO in this program, and a presentation on how science is used to inform public policy on air quality management in Canada. We will also discuss future NARSTO activities – specifically, upcoming NARSTO workshops on PM modeling and a proposal for a NARSTO assessment addressing the technical challenges of multi-pollutant approaches to air quality management. Additional information on the workshops and the proposed assessment, can be found in this edition of NARSTO News.

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New NARSTO Assessment Considered

One of the principal items of new business at this year's Executive Assembly will be consideration of the proposal that NARSTO conduct an assessment of the technical challenges of a multi-pollutant approach to managing air quality under an accountability framework.

Motivation for the assessment is expectation that over the next decade decision makers in Canada and the United States will be called upon to evaluate the effectiveness of past air quality management practices. By 2010 major air pollution reduction programs at the federal, state, and provincial level will be in place; and although implementation of their provisions will still be incomplete, major reductions in emissions will be expected by that time. As these programs take effect, air quality managers will be placing greater emphasis on tracking compliance and progress towards meeting health and environmental goals. They will also be considering the need to take additional actions to meet these goals if compliance and progress are not sufficient. As they track progress, air quality managers will need to demonstrate whether or not recent emission reduction programs have been effective in improving air quality and in protecting human health and sensitive ecosystems. It will not be sufficient to show that ambient concentrations of individual pollutants have decreased. It will be necessary to show why they have decreased; and if they have not, or if expected improvements in human and ecosystem health have not occurred, they will need to determine why. In assessing the success of these programs, air quality managers will need to determine whether or not 1) the expected emission reductions have taken place, 2) the actual emission changes resulted in changes in ambient concentrations consistent with the predictions of air quality models, 3) the changes in ambient concentrations have resulted in reductions in human exposure to the air pollutants in question, and 4) these reductions have led to improved public health and reduced damage to sensitive ecosystems. This process of demonstrating the efficacy of air quality management actions is often called "accountability".



New NARSTO Assessment Considered (cont.)

In order to accomplish these tasks, air quality managers will need:

- 1) The means to measure progress toward air quality, public health and environmental goals, and
- 2) The means to determine the adjustments to existing emissions controls that might be needed if progress is not sufficient, if new science identifies different or additional causal sources, or if health and environmental goals are modified.

In order to provide the information needed to design and conduct these “accountability” studies and air quality program adjustments, it is proposed that NARSTO perform an assessment of the technical challenges (including the adequacy of the data and modeling tools) and implications of a multi-pollutant approach to managing air quality under an accountability framework. The NARSTO assessment will be completed during 2008 in order to provide decision-makers the information they will need to prepare to perform periodic “accountability” studies, which are expected to begin in 2010 and to be repeated on a 5- to 8-year cycle. The assessment approach would start from a clear understanding of the health and environmental goals and work backward to identify the source emission reductions and ambient air quality improvements needed to achieve these goals. If the Executive Assembly agrees to move forward with assessment proposal, the next steps will be to convene a small workshop to draft a charge for the assessment, define the tasks required to complete the work, and identify the expertise that will be needed.

The NARSTO News is published biannually for the purpose of communicating NARSTO activities and progress to members of the extended NARSTO community. Persons wishing to comment on the newsletter or submit material for publication are invited to do so by contacting either Diane Fleshman at 509-375-5694 or Bill Pennell in the NARSTO Management Coordinator’s office, at the following address:

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Dan Albritton Retires

As many readers of NARSTO News already know, Dan Albritton retired from the U.S. National Oceanic and Atmospheric Administration (NOAA) on March 3, 2006. Dan joined NOAA’s Aeronomy Laboratory in 1967, became its Director in 1986, and served as Director until his retirement. Dan was one of NARSTO’s founding leaders and served as an active and invaluable contributor throughout the NARSTO’s initial decade of operation. Dan has a remarkable ability to bring people together and to translate complex scientific issues into terms that are understandable to experts and non-experts alike – a talent particularly important to an organization like NARSTO.

Dan received many awards and honors during his career. But perhaps more importantly, he earned the affection of his colleagues. In 2005, Dan received the Vienna Convention Award for Outstanding Contributions to the Protection of the Ozone Layer from the United Nations Environment Programme. In profiling Dan for the award, UNEP stated that Dan’s “personal skills and tireless efforts at communicating scientific findings with the highest standards of integrity and accuracy have become the scientific basis for national and global decision-[making] at all levels.” NARSTO and the atmospheric science community are going to miss him.



Thanks Dan

NARSTO’s Website to Get a Facelift

If you go to the new NARSTO web address – <http://www.narsto.org/> – sometime after the first of May, you may be surprised. The NARSTO website is undergoing a complete facelift and redesign. The new site will be more polished and easier to navigate. The existing content will be preserved, and we are planning to offer key-word search capabilities that will facilitate searching NARSTO documents for specific topics. New software will also be implemented that will make it easier for the Management Coordinator’s Office to keep the site up to date. We are also planning some new features that we hope will make the site more interesting and useful to NARSTO members. As these features are implemented, we will describe them in future issues of NARSTO News. And yes, if you enter the old address (<http://www.cgenv.com/Narsto/>) you will be directed to the new site.



NARSTO to Host

PM Modeling Workshops

From June 27-30, 2006, NARSTO will host two back-to-back workshops at the Millennium Hotel in Boulder, Colorado. The workshops will address the state of the science in modeling the lifecycle of atmospheric particulate matter (PM) as it pertains to air quality management, health effects research, and climate change. The first workshop, scheduled for June 27 and 28, will emphasize improving representation of the physical and chemical processes involved in the formation and transformation of atmospheric particles and in estimating the effects of these particles on clouds and on radiative energy transfer. The second workshop, which will begin on the afternoon of June 28 and conclude before noon on June 30, will focus on evaluating the performance of emission-based (chemical transport) and observation-based (receptor) models in identifying the sources of PM. The second workshop will also examine the application of these models in health effects research, standards-setting, and air quality management. Participation in the workshops will be by invitation.

Purpose and Outcomes

The first workshop will conduct a critical assessment of the state of the science in PM modeling, with special emphasis on regional climate change and PM forecasting. In achieving its purpose the workshop will

1. Provide a critical review of past model evaluation activities.
2. Assess the potential of high-resolution models (i.e., spatial grid resolutions less than 10 km) for simulating PM concentrations, the chemical and physical properties of PM, and on estimating PM effects on radiative energy transfer. Particular focus will be placed on evaluating model elements that represent PM formation, transformation, fate, and effects.
3. Review new developments in the modeling of PM processes.
4. Provide guidance to determine which model processes are in greatest need of evaluation and the associated data needs, including observational program designs.
5. Discuss the challenges of providing operational forecasts of PM concentrations and chemical properties and techniques for improving these forecasts.
6. Discuss the distinct needs of regional climate and air quality models and ways the emission-based and observation-based modeling communities

can complement one another by taking advantage of the research being conducted by both.

The output of the first workshop will be a critical review of past model evaluation activities and the performance of contemporary and emerging models in simulating PM concentrations, properties, and effects. The workshop will provide specific suggestions on the need for and the design of future PM model evaluation activities. Workshop conclusions and recommendations will be documented in a comprehensive workshop report and in one or more publications in the peer-reviewed scientific literature, if appropriate.

The second workshop will conduct a critical assessment of the state of the science in PM modeling for source attribution and for future air quality standard-setting and management issues. This workshop will

1. Assess the performance of emission-based, chemical transport models in simulating PM concentration, chemical properties, and deposition.
2. Assess the performance of receptor and chemical-transport models in identifying the sources (including magnitude) of primary and secondary PM.
3. Provide specific guidance on the observations and methodologies for evaluating the performance of PM models in characterizing the chemical composition of atmospheric particles, in identifying PM sources, and in discriminating among local, regional, and long-range sources.
4. Assess how the results from air quality forecasting activities might be used to evaluate the performance of receptor and chemical transport models.

The second workshop will provide a critical review of the performance of contemporary models in predicting PM concentrations, size distribution, and chemical composition and of the abilities of receptor and chemical transport models (or combinations of them) to identify the sources of PM. The workshop will place particular emphasis on the abilities of models to predict the effects of emission changes on PM concentrations and chemical properties and on identifying the sources of primary and secondary organic PM. As with the first workshop, conclusions and recommendations will be documented in a workshop report and in one or more publications in the peer-reviewed literature.

NARSTO members and associates desiring additional information on the workshops should contact Bill Pennell, the NARSTO Management Coordinator.