

# AIR TOXICS MONITORING NEWSLETTER

A PUBLICATION OF THE STAPPA/ALAPCO/USEPA AIR TOXICS MONITORING STEERING COMMITTEE

October 2000

## National Air Toxics Monitoring Program

To support the first year of national air toxics monitoring, the U.S. Environmental Protection Agency (USEPA) has made \$3 million in FY2000 money available to the states. Expanded air toxics monitoring is one of the major activities of USEPA's National Air Toxics Assessment (NATA). The three purposes of the monitoring are to: (1) characterize ambient concentrations, (2) provide information to evaluate air quality models, and (3) establish trends and evaluate the effectiveness of emission reduction strategies. The State-USEPA Air Toxics Monitoring Steering Committee, with the approval of the STAPPA/ALAPCO Board of Directors, has developed an approach for the use of these funds to conduct the following two major projects:

1. \$2.5 million to support four urban area and six small city/rural pilot monitoring projects; and
2. \$0.5 million to analyze existing (and the new pilot project) monitoring data.

This approach was accepted by a panel of USEPA's Science Advisory Board as a prudent and appropriate initial step toward a national air toxics monitoring network (see <http://www.epa.gov/sab/ec0015.pdf>).

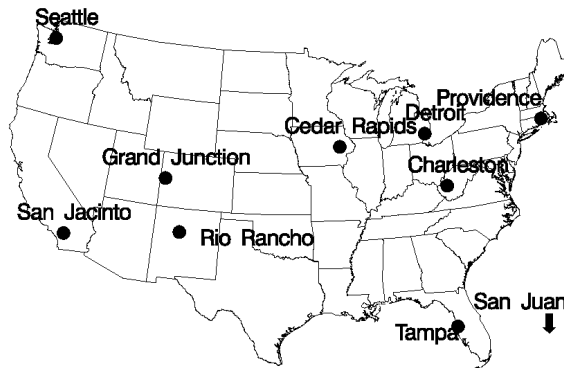
### Monitoring Pilot Project

The pilot project is intended to generate information on the spatial and temporal variability of ambient air toxics concentrations. In all, ten state and local agencies are participating, each one representing a different geographical area of the country. The four urban areas selected for monitoring are:

Providence, RI (5 sites)  
Tampa Bay, FL (6)  
Detroit, MI (8)  
Seattle, WA (6)

The six small city/rural areas selected for monitoring are:

Barceloneta/San Juan, Puerto Rico (2)  
Charleston/Huntington, WV (2)  
Rio Rancho, NM (2)  
Cedar Rapids, IA (2)  
Grand Junction, CO (3)  
San Jacinto, CA (2)



### Map of Ten Cities in Monitoring Pilot Project

The monitoring is expected to begin in January 2001 and will provide at least 12 months of data. Sampling and laboratory analysis procedures are being reviewed and standardized among study participants and USEPA representatives to ensure consistency among measurement results. Sampling will be conducted on primarily a 1-in-6 day frequency in the four urban areas, and a 1-in-12 day frequency in the six small city/rural areas. The data will be analyzed as part of the air toxics data analysis project (see discussion below).

Each area will sample for at least the following "core" list of 18 compounds:

1. benzene
2. 1,3-butadiene
3. carbon tetrachloride
4. chloroform
5. 1,2-dichloropropane (propylene dichloride)
6. methylene chloride (dichloromethane)
7. tetrachloroethylene (perchloroethylene, PCE)
8. trichloroethylene, TCE
9. vinyl chloride
10. acetaldehyde
11. formaldehyde
12. beryllium and compounds
13. cadmium and compounds
14. chromium (total chromium)
15. lead and compounds
16. manganese and compounds
17. nickel and compounds
18. arsenic (monitored by areas with infrastructure currently in place)

The areas will also collect meteorological data and prepare a current air toxics emissions inventory. Following completion of the sampling in these ten areas, a decision will be made on the disposition of the monitoring equipment (e.g., it may be transferred to other state and local agencies).

### **Air Toxics Data Analysis Project**

Through a combination of federal, state, local, and tribal monitoring activities, there are approximately 300 sites currently collecting air toxics monitoring data. The purpose of the air toxics data analysis project is to “mine” these data to provide information about the spatial pattern, temporal profile, and general characteristics of air toxics compounds.

Representatives from the Lake Michigan Air Directors Consortium (LADCO), as well as the Northeast States for Coordinated Air Use Management (NESCAUM) and the California Air Resources Board (CARB), will be working with Battelle Memorial Institute and Sonoma Technology, Inc. on the data analysis project. The project consists of the following tasks:

1. Compiling a central database, including updating USEPA’s air toxics data archive
2. Assessing the quality of the existing air toxics data
3. Preparing the data for analysis, including developing a queryable, web-based system
4. Performing interpretative analyses of the existing air toxics data
5. Updating the data archive and data analyses to include data from the monitoring pilot projects
6. Reporting

The “heart” of this project is Task 4 (analysis of historical data) and Task 5 (analysis of forthcoming pilot city data). These tasks are intended to answer important network design questions, such as:

What is the appropriate number and location of monitors to evaluate models, identify trends, and characterize concentrations in urban and non-urban areas?

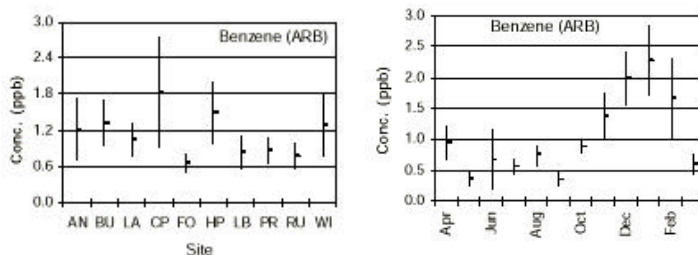
What is the appropriate sampling frequency?

What level of data quality should be expected?

How should the monitoring approaches vary by compound?

How should low concentrations (i.e., below the minimum detection level of the instruments) be dealt with?

Previous analyses of air toxics data have demonstrated the spatial and temporal variation of air toxics concentrations. For example, the spatial and seasonal variation of benzene concentrations is shown below based on data collected at 10 sites in the Los Angeles area in 1998 – 1999.



**Benzene Concentrations in the Los Angeles Area**

Data such as these will be analyzed to support recommendations on the elements of a national air toxics monitoring program.

The approximate schedule for this project is as follows.

Oct 2000	Initiate Work
Dec 2000	Deliver Updated Data Archive
July 2001	Deliver Draft Report on Data Analyses and Web-Based System
May 2002	Deliver Revised Report with Pilot City Data

To supplement the primary data analysis work, NESCAUM will manage a small contract to either facilitate the web-based data archive or perform pilot-scale, exploratory analyses (i.e., application of air quality modeling to support network design) that may provide further guidance to designing the national monitoring program.

For further information on the monitoring pilot project, please contact Sharon Nizich, USEPA, OAQPS, [nizich.sharon@epamail.epa.gov](mailto:nizich.sharon@epamail.epa.gov), 919-541-2825. For further information on the data analysis project, please contact Michael Koerber, LADCO, [koerber@ladco.org](mailto:koerber@ladco.org), 847-296-2121. This newsletter will be issued on a regular (quarterly) basis to provide status reports on air toxics monitoring activities.