Network Assessment Goals

Presented at
MARAMA 2010 Monitoring Committee Training Workshop

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What is a Network Assessment?

- A review of existing monitoring networks in an effort to optimize the network:
  - Identify and removing “low value” monitors
  - Identify under monitored locations
  - Incorporate new technology
- An opportunity to look for “found money” to implement new efforts
  - Shift funding from low priority monitoring to high priority monitoring
  - Increase efficiency/reduce costs

What is the Difference Between a Network Assessment and a Network Plan?

- Network Plan
  - Not a new requirement [40 CFR 58.10(a)]
  - Due every year
  - Simple accounting of your network and changes expected for that year
- Network Assessment
  - Once every 5 years
  - Detailed evaluation of networks and objectives
  - A check to see "if the network **meets the monitoring objectives** defined in appendix D to this part, whether **new sites are needed**, whether **existing sites are no longer needed** and can be terminated, and whether **new technologies** are appropriate for incorporation into the ambient air monitoring network." (40 CFR 58.10(d))

Network Assessment Steps

Step	Description	Examples
1	Prepare or update a regional description, discussing important features that should be considered for network design	Topography, climate, population, demographic trends, major emissions sources, and current air quality conditions
2	Prepare or update a network history that explains the development of the air monitoring network over time and the motivations for network alterations, such as shifting needs or resources.	Historical network specifications (e.g., number and locations of monitors by pollutant and by year in graphical or tabular format); history of individual monitoring sites
3	Perform statistical analyses of available monitoring data. These analyses can be used to identify potential redundancies or to determine the adequacy of existing monitoring sites.	Site correlations, comparisons to the NAAQS, trend analysis, spatial analysis, and factor analysis

Network Assessment Steps (cont.)

Step	Description	Examples
4	Perform situational analyses, which may be objective or subjective. These analyses consider the network and individual sites in more detail, taking into account research, policy, and resource needs.	Risk of future NAAQS exceedances, demographic shifts, requirements of existing state implementation plans (SIP) or maintenance plans, density or sparseness of existing networks, scientific research or public health needs, and other circumstances (such as political factors)
5	Suggest changes to the monitoring network on the basis of statistical and situational analyses and specifically targeted to the prioritized objectives and budget of the air monitoring program.	Reduction of number of sites for a selected pollutant, enhanced leveraging with other networks, and addition of new measurements at sites to enhance usefulness of data
6	Acquire the input of state and local agencies or stakeholders and revise recommendations as appropriate	

Planning Documents and Tools

- EPA has put together some planning documents and tools to assist monitoring agencies conduct network assessments
  - http://www.epa.gov/ttn/amtic/network-assessment.html
- Planning Documents
  - Ambient Air Monitoring Network Assessment Guidance
  - Designing a Network Assessment for an Ambient Air Monitoring Program
- Tools
  - Static analyses ready to use
  - Interactive tools
  - Upcoming webinars on how to use tools
- Training Presentations from NAAMC
  - http://www.epa.gov/ttn/amtic/2009present.html

Take Home Messages

- Consider network assessment as an opportunity, not a burden
- Involve data users (SIP planners, health scientists, etc.) early and often
- Network assessments are not “one size fit all”
  - Large networks need more analysis than small networks
- Question every site
  - Why are we monitoring there?
  - What do we lose if we stop monitoring there?
  - Is it in the best location to meet our objectives?
- Look for low-value single pollutant sites as targets for reductions