



New Federal Air Monitoring Requirements

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Primary Objectives of Monitoring

- Comparison to NAAQS and other health indicators for toxics,
- Provide public outreach
- Provide information to health and atmospheric scientists to better inform future reviews of the NAAQS.

Planning and Implementation of the Monitoring Network

Several documents direct, inform and communicate the air quality monitoring network

- Code of Federal Regulations (40 CFR 58)
- NAAQS revisions and associated monitoring requirements (CASAC input)
- National Ambient Air Monitoring Strategy
- Network Assessments (required every 5 years)
- Annual network plans for each State

National Ambient Air Monitoring Strategy

Primary Objectives:

- Multi-pollutant monitoring approach
- Integrate monitoring networks and programs.
- Ensure quality system and other technical requirements for monitors are appropriate for the intended use of the data and that methods are performance-based in order to provide high-quality data.
- Encourage the use of newer technologies (continuous, high-sensitivity methods, digital data acquisition, etc.) to provide easy access to timely, high-quality, high-resolution air quality data.

Lead (Pb)

- EPA Strengthened the lead NAAQS from 1.5 $\mu\text{g}/\text{m}^3$ to 0.15 $\mu\text{g}/\text{m}^3$ in October 2008
- EPA required that near-source monitors associated with emissions of more than one ton per year begin operating by January 1, 2010 and non-source monitoring by January 1, 2011.
- Lead monitoring proposal to require monitoring near lead sources with emissions of 0.5 to 1.0 tons per year. Also, proposing non-source lead monitors at NCore stations. If finalized, monitors would need to be in place by one-year after final rule is effective.

Nitrogen Dioxide (NO₂)

- EPA strengthened the primary nitrogen dioxide (NO₂) standard to 100 ppb in January, 2010
 - monitors will be necessary in locations to measure peak concentrations that occur over shorter periods of time; these locations will typically be near major roads in urban areas.
 - Area-wide component of network will be retained.
- Revised network must be in place by January 1, 2013.

Sulfur Dioxide (SO₂)

EPA strengthened the SO₂ primary standard to 75 in June, 2010

- replaced the existing annual and 24-hour primary SO₂ standards with a new 1-hour SO₂ standard to better protect public health by reducing people's exposure to high short-term concentrations of SO₂

Monitors are required to be placed in Core Based Statistical Areas (CBSAs) based on a population weighted emissions index for the area . The final rule requires:

- 3 monitors in CBSAs with index values of 1,000,000 or more;
 - 2 monitors in CBSAs with index values less than 1,000,000 but greater than 100,000; and
 - 1 monitor in CBSAs with index values greater than 5,000.
- All required SO₂ monitors must be operational by January 1, 2013.
 - EPA Regional Administrators have the authority to require additional monitoring in certain circumstances

Ozone (O₃)

O₃ Monitoring Requirements – Separate from the 2008 O₃ NAAQS reconsideration, EPA has proposed changes to the O₃ monitoring requirements that would add monitors:

- in smaller urban areas not already required to monitor,
- non-urban areas to characterize ozone in sensitive ecosystems and provide coverage in less populated areas,
- and lengthen the ozone monitoring season.

If finalized, new monitors would need to be operating by the first day of the ozone season in 2012, and monitoring season changes would take effect on the first day of ozone monitoring in 2012 .

Carbon Monoxide (CO) and Particulate Matter (PM_{2.5} and PM₁₀)

CO NAAQS: Changes must be proposed by Jan 28, 2011 and finalized by Aug 12, 2011.

- concerns with the adequacy of the current network and the sensitivity of currently deployed ambient methods have been noted by the CASAC CO Review Panel

PM NAAQS: Changes scheduled to be proposed in February 2011 and finalized in October 2011.

- CASAC is being consulted on the appropriate methods and network design that to support a secondary PM NAAQS designed to protect urban visibility.

NCORE monitoring network

Multi pollutant network that integrates several advanced measurement systems for particles, pollutant gases and meteorology.

- PM_{2.5} FRM mass, speciation, and continuous mass
- continuous PM(10-2.5) mass
- ozone (O₃)
- Trace gases: carbon monoxide (CO), trace sulfur dioxide (SO₂), and nitrogen oxide (NO) / total reactive nitrogen (NO_y)
- ammonia (NH₃) and nitric acid (HNO₃) currently under consideration
- surface meteorology wind speed and direction, temperature, RH

Full implementation of Ncore network required Jan 1, 2011

References

National Ambient Air Monitoring Strategy (2008)

<http://www.epa.gov/ttn/amtic/files/ambient/monitorstrat/AAMS%20for%20SLTs%20%20-%20FINAL%20Dec%202008.pdf>

Regional Network Assessment (2010) Final Report

http://www.ladco.org/reports/general/Regional_Network_Assessment/Regional_Network_Assessment_Report_Version_6.1_July_1a.pdf

Main NAAQS web sites that cover many of the main aspects of the NAAQS including monitoring and implementation.

SO₂: <http://www.epa.gov/airquality/sulfurdioxide/actions.html#jun10>

NO₂: <http://www.epa.gov/air/nitrogenoxides/actions.html#jan10>

Pb: <http://www.epa.gov/oaqps001/lead/actions.html>

O₃: <http://www.epa.gov/glo/actions.html>

Extra Slides

Current Schedule for Ongoing NAAQS Reviews (May 2010)

MILESTONE	POLLUTANT						
	NO ₂ Primary	SO ₂ Primary	Ozone Reconsideration	CO	PM	NO ₂ /SO ₂ Secondary	Lead
NPR	<u>Jun 26, 2009</u>	<u>Nov 16, 2009</u>	Jan 6, 2010	<u>Jan 28, 2011</u>	Feb 2011	<u>July 12, 2011</u>	Nov 2013
NFR	<u>Jan 22, 2010</u>	<u>Jun 2, 2010</u>	Oct 29th, 2010	<u>Aug 12, 2011</u>	Oct 2011	<u>Mar 20, 2012</u>	Sept 2014

NOTE:

Underlined dates indicate court-ordered or settlement agreement deadlines

Next Ozone Review: Proposal in May 2013 and Final in Feb 2014

