

## **REGION 10 AIR MONITORING NETWORK ASSESSMENT**

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### **Introduction**

OAQPS initiated a national air monitoring network assessment in 2001 to identify areas of disinvestment and subsequently issued a draft plan to transform the national monitoring network to a three-tiered NCore configuration. This new configuration would focus on pollutants which pose the highest potential risks, provide more real-time data for public information, support health risk studies, allow testing of state-of-the-art monitoring techniques prior to general network deployment, and shift from single pollutant monitoring sites to multiple pollutant monitoring sites. OAQPS then requested each region conduct a more detailed assessment of its regional monitoring network. In response, Region 10 issued network assessment guidance to Idaho, Washington, Alaska and Oregon and requested that the states conduct network assessments as part of their 2002 annual NAMS/SLAMS Network Reports. This guidance was consistent with the objectives identified in the draft national air monitoring strategy developed by OAQPS, which calls for major reductions in PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO, and lead monitoring and moderate reductions in PM<sub>2.5</sub> and ozone monitoring over the next few years.

Region 10 reviewed the assessments conducted by the states and evaluated their recommendations by comparing monitoring data to the NAAQS, evaluating monitoring data trends, using statistical analysis to identify redundant monitoring sites, and applying the results of dispersion modeling to identify an ozone monitoring gap in the Puget Sound ozone maintenance area. As a result of this regional network assessment, the most important changes to the Region 10 network in 2003 will be a significant reduction in PM<sub>2.5</sub> and PM<sub>10</sub> FRM monitors and a shift to continuous PM<sub>2.5</sub> monitoring at sites recording concentration substantially below the NAAQS but are needed to report moderately unhealthy air quality conditions to the public. A significant part of the regional PM<sub>2.5</sub> continuous monitoring network is dedicated to monitoring the impact on air quality caused by smoke from agricultural burning and wildfires. There will be a moderate reduction in CO monitors in Region 10 for next year. Region 10 already has a limited number of ozone, SO<sub>2</sub>, NO<sub>2</sub>, and lead monitoring sites so there will not be a significant reduction in these monitors.

### **Anticipated Additional Network Reductions**

Region 10 expects that the following additional reduction will occur in the regional network over the next few years:

- PM<sub>2.5</sub> FRMs currently measuring less than 50% of the NAAQS should be discontinued after three calendar years of data have been collected. FRMs recording 50-80% of the NAAQS should be replaced with continuous monitors.
- PM<sub>10</sub> FRM monitors which are measuring less than 50% of the NAAQS should be discontinued by 2003, unless required in non-attainment areas. PM<sub>10</sub> FRM sites measuring greater than 50% of the NAAQS would be candidates for PM<sub>coarse</sub> monitors if PM<sub>10</sub> minus PM<sub>2.5</sub> concentrations indicate that the PM<sub>coarse</sub> concentrations may exceed the PM<sub>coarse</sub> standards EPA intends to issue in 2004.

- Monitoring sites for other criteria pollutants which are reporting less than 80% of the NAAQS will be phased out except to meet minimum requirements for MSAs in the federal regulations or required to track progress in non-attainment areas.

#### Tools for Future Network Assessments

Region 10 intends to use the following analytical tools in the future to evaluate and refine the regional monitoring network:

- SPLUS is a software program capable of performing a numerous statistical analyses on data. Region 10 will use this program to perform linear regression analyses of data from adjacent monitoring sites within an airshed to identify site redundancy.
- CMAQ is a powerful dispersion model capable of predicting ozone and PM<sub>2.5</sub> concentrations based on estimated emission inventories from point and mobile sources, meteorology, secondary photochemical reactions, and terrain. Region 10 intends to use this model to determine proper placement of ozone monitors in areas of high ozone concentrations and to determine if PM<sub>2.5</sub> or ozone monitors are needed on Tribal lands.
- RAINS (Rapid Access Information System) is a program developed by Region 10 which can graphically display locations of monitoring sites, boundaries of non-attainment and Class I areas, and the location of major pollution sources. This system also contains annual data summaries from all Region 10 monitoring sites. Region 10 will use this program to review monitoring site data trends and to develop a monitoring strategy for Tribal reservations.

#### Summary

There will be a significant reduction in PM<sub>2.5</sub> and PM<sub>10</sub> FRM monitoring in Region 10 by the end of 2002. In order to achieve more valuable real-time data to alert the public to unhealthy air quality conditions, Region 10 anticipates a conversion to continuous PM<sub>2.5</sub> monitors over the next few years at most sites reporting less than 80% of the NAAQS. PM<sub>10</sub> monitoring will continue primarily in non-attainment area or be replaced with PM<sub>coarse</sub> monitors at locations reporting PM<sub>10</sub> levels near the NAAQS. Future funds saved by making further reductions in the monitoring network should be used to establish Level 2 and 3 NCore monitoring sites consistent the requirements of an NCore network as defined in the national ambient air monitoring strategy document. Level 2 sites would monitor for multiple pollutants, with emphasizing on continuous monitors, and would be established at existing PM speciation and air toxics trends sites. Level 3 sites would be a subset of the current SLAMS network and would consist of single-pollutant monitoring sites, emphasizing the need for a spatially rich network to track trends of the pollutants posing the most significant risks to human health.

In order to smoothly transition to an NCore network and optimally utilize funding saved by network reductions, Region 10 intends to develop a regional NCore network transition plan in early 2003 which would guide the states in transforming their networks. This regional plan would include guidelines for identifying candidate Level 2 and 3 sites, specific annual targets for transitioning to an NCore network, and anticipated reductions in the existing monitoring network based on comparison of data to the NAAQS, site redundancy, data trends, and results of dispersion modeling.