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April 7, 2011

Cheryl Newton
Director, Air and Radiation Division
U.S. Environmental Protection Agency, Region 5
77 W. Jackson Boulevard
Chicago, IL 60604

Dear Ms. Newton:

The purpose of this letter is to provide you with our recommendations concerning implementation of the air monitoring requirements. While the recommendations primarily address the new requirements associated with recent final or proposed changes to the national ambient air quality standards for ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), and carbon monoxide (CO), we also wish to address the implications with respect to existing requirements for these and other air pollutants.

In short, as we stated in our July 1, 2010, letter to Susan Hedman, we are unable to conduct all of the required new monitoring. States are struggling to maintain high value and high quality air monitoring data, due to rising operating costs, need for periodic equipment replacements, increased reporting burden for quarterly progress reports, increased staff costs and staff turn-over, increased travel costs, additional network reviews, limited ability to reduce design of network due to more stringent standards, and the demands of increasing EPA monitoring requirements. We estimate that the required new monitoring alone will cost on the order of \$7-9M. (Note, this does not include the cost to meet several additional likely forthcoming requirements.) Our ability to do any new monitoring will come at the cost of the existing monitoring network. Also, it should be noted that the savings due to shutting down a monitor at an existing site or even shutting down the entire site are generally insufficient to pay for the expenses of creating a new site. While we appreciate EPA's attempt to provide an additional \$15M nationally in FY2012 for new monitoring, it will not approach the \$7 – 9M needed by the Region 5 States alone.

For the past several months, we have taken a serious look at the new monitoring requirements and believe that we may be able to partially meet these requirements, if EPA is willing to work with us on allowing certain disinvestments in existing monitoring programs. The enclosed document provides a pollutant-by-pollutant assessment of the new requirements and our recommendations for state action. Key points include:

- A phased regional approach for near-roadway NO₂ and CO monitoring, with, initially, 1 site in 2 – 3 large cities. Two of these cities could be Detroit and Minneapolis, if: (a) EPA allows the State of Michigan to take over equipment and operations at the existing near-roadway site at Eliza Howell Park in Detroit, and (b) EPA allows the State of Minnesota to terminate CO monitoring in two maintenance areas (St. Paul and Duluth) where the current measured values are well below the ambient standard. Indianapolis could also be one of these cities.
- Establishment of new near-source Pb monitoring sites and new O₃ monitoring sites in smaller cities and non-urban areas, as resources permit

- No new SO₂ monitoring sites, but states should be allowed to shutdown an existing site and move the equipment to another location, as resources permit

In order to provide the necessary resources to conduct this new monitoring, we will need to shift resources from other monitoring activities. In particular, we believe that consideration needs to be given to cuts in the following existing activities:

- PM₁₀ - Most existing sites measure concentrations well below the current 24-hour standard for this pollutant. Thus, the current large network in the region (i.e., more than 80 monitors) is unnecessary.
- PM_{2.5} – Given the pending shift in the funding basis for this monitoring from section 103 to section 105 (and the need for states to now provide a 40% match on the federal funds under section 105), states unable to provide the match will have fewer monitoring dollars available. As such, these states will be forced to reduce their existing network of federal reference method, continuous, and/or speciation monitoring.
- CO – Most existing sites measure concentrations well below the current 1-hour and 8-hour standards for this pollutant. Thus, the current large network in the region (i.e., more than 30 sites) is unnecessary, including in maintenance areas. We recognize, however, EPA's recent interest in near-roadway measurements for CO and are willing, as part of our phased regional approach for near-roadway NO₂ monitoring to include CO monitoring at the initial monitoring sites in 2 – 3 large cities.

Other low value monitoring which may be candidates for cuts include sampling where pollutant concentrations are either non-detectable or barely detectable, and the sampling frequency at IMPROVE monitors. The savings due to shutting down a monitor at an existing site or even shutting down the entire site are generally insufficient to pay for the expenses of creating a new site.

In conclusion, we want to emphasize the importance of air monitoring to our state environmental programs and wish to summarize what air monitoring we can do:


- Operate core set of existing monitoring sites for O₃ and PM_{2.5} (mass, continuous, and speciation measurements)
- Operate NCORE monitoring sites (note: Illinois background site is to be contracted out by EPA)
- Operate existing near-source Pb and SO₂ monitoring sites, plus a few new near-source Pb sites and a few new O₃ sites in smaller cities and non-urban areas
- Continue existing network for SO₂ and NO₂, and collect meteorological data, as necessary, to support air quality planning
- Initiate near-roadway monitoring for NO₂ and CO in 2-3 large cities
- Conduct state-initiated air toxics monitoring and, as appropriate, national air toxics monitoring (i.e., NATTS)

To ensure the integrity and quality of data from our core existing monitoring sites, sufficient funding must also be provided to pay for capital costs to replace aging equipment, and operation and maintenance costs.

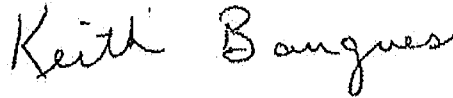
We look forward to working cooperatively and constructively with you and your staff on these important activities. By working together, we believe that we can ensure that our ambient monitoring programs can continue to provide quality data to support air quality planning to protect public health in the region. Also, to help us with preparing our annual monitoring network plans for 2012, which are due July 1, 2011, we would appreciate any initial feedback.

Please direct any questions concerning the enclosure to Michael Koerber, LADCO. Please contact any of us, if you wish to discuss the monitoring issue further.

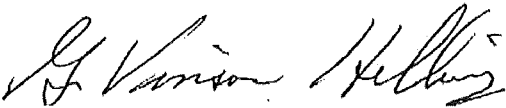
Sincerely,



Laurel Kroack,
Chief, Bureau of Air
Illinois Environmental Protection Agency



Keith Baugues
Assistant Commissioner, Office of Air Quality
Indiana Department of Environmental Management



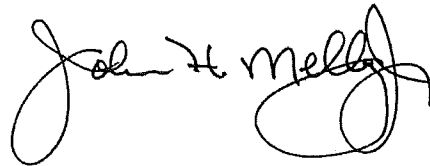
G. Vinson Hellwig
Chief, Air Quality Division
Michigan Department of Environmental Quality



J. David Thornton
Assistant Commissioner
Minnesota Pollution Control Agency



Robert Hodanbosi
Chief, Division of Air Pollution Control
Ohio Environmental Protection Agency



John Melby
Director, Bureau of Air Management
Wisconsin Department of Natural Resources

ENCLOSURE

Straw Proposal: Compliance with New EPA Monitoring Requirements

Charge: Which of the many new EPA monitoring requirements can be met by the Region 5 States?

Key Fact: Sufficient funding is not available to meet fully the new monitoring requirements, given that no new grant money is expected (e.g., EPA's effort to provide an additional \$15M nationally in FY2011 for new monitoring was unsuccessful) and the existing grant money may only be enough to maintain current state/local monitoring programs. Furthermore, any reduction in section 105 or section 103 funding will result in cuts to monitoring networks in Region 5.

Background: Many new EPA monitoring requirements are expected over the next several years:

<u>Pollutant</u>	<u>Monitoring</u>	<u>Deployment</u>
NO ₂	near-roadway	January 2013
SO ₂	source/population-oriented	January 2013
CO	near-roadway	January 2013 (proposed)
O ₃	rural areas, smaller cities	January 2012 (proposed) ¹
Pb (Phase 2)	NCORE (urban), 0.5 TPY sources, airports	December 27, 2011
NO _x /SO _x (<i>sec stand.</i>)	TBD	TBD
PM _{2.5}	TBD	TBD

The resulting number of new monitors required in Region 5 is summarized in Table 1. As part of the recent 5-year regional network assessment², the cost of the new requirements for NO₂, SO₂, O₃, and Pb (Phase 1) in Region 5 was estimated to be about \$7-9M, which is about 1/3 of what the states/locals are currently spending on air monitoring. (Note, the costs for the new requirements for CO, Pb (Phase 2), secondary NO_x/SO_x, and PM_{2.5} have not been estimated.) In their July 1, 2010, letter to EPA transmitting the regional network assessment final report, the Region 5 State Air Directors noted that sufficient funding was not available to meet these requirements and, as such, the States would be unable to fully comply with all of the new requirements. On February 3, 2011, the Air Directors discussed this issue further and agreed to develop a regional proposal for complying with these requirements.

To provide context for a proposal on the new requirements, the Region 5 States ranked the on-going and up-coming monitoring programs. The individual state rankings are summarized in Table 2. From a regional perspective, the top 10 programs are as follows:

1. PM_{2.5} mass (FRM)
2. Ozone - existing
3. PM_{2.5} mass (continuous)³
4. PM_{2.5} speciation
5. Pb Phase I nonattainment (source-oriented)
6. NCORE
7. NATTS
- 8. Ozone - new**
9. State air toxics
10. SO₂ - existing

¹ Given the delay in EPA's reconsideration of the 2008 ozone standard (and associated monitoring requirements), this date cannot be met. EPA has recently indicated that the new monitors, if required in the final rule, would need to be operating by the start of the 2013 ozone season.

² "Regional Network Assessment", Final Report, July 1, 2010

³ PM_{2.5} mass (continuous) monitoring was ranked low in one state due to the demonstrated bias of these monitors compared to PM_{2.5} mass (FRM) monitors, and a concern that a positive bias could result in a false nonattainment designation.

In ranking these programs, the states considered a number of factors, including protection of public health, attainment status (both current and possible future), ability to leverage existing infrastructure, logistics/costs to operate a site, exposure, and population. Although further discussion of each requirement is provided below, the rankings show that most of the new programs are considered lower priority (i.e., except for new ozone monitoring, none of the new programs made the top 10 list). It should be noted that a couple other programs (i.e., PAMS and IMPROVE) received high rankings by a few states, but were not included in the top 10 list. In those states (e.g., IL and WI for PAMS, and MN for IMPROVE), these other programs are important and should continue to be supported.

The concurrent deployment date of early 2013 (i.e., January 1, 2013, or, in the case of ozone, spring 2013) for many of the new requirements is also a problem. By not staggering deployment dates, states are faced with both high capital costs for new equipment with extremely limited budgets, and the need to conduct a large amount of set-up work with diminishing staff all at about the same time. This accumulation of demands stretches the state monitoring programs beyond what they are able to accommodate.

Two additional funding issues worth noting are capital costs for replacing aging existing equipment, and operation and maintenance costs. The lack of sufficient funding to cover these costs could further compromise the integrity and quality of monitoring data.

Options: Two basic options are offered for discussion:

- a. Do Nothing: This option assumes that the existing resources are only enough to maintain current monitoring programs and that there is little/no opportunity for disinvestments (given either past efforts to thin networks, high demand for all existing sites, or EPA inflexibility on current requirements)

Advantages: Allows states to continue focusing on current public health priorities – e.g., monitoring in high concentration, high population areas

Disadvantages: May be a non-starter with EPA and could open up the states to challenges by outside groups for non-compliance

- b. Partially Meet New Requirements: If states are able to identify disinvestments (based on a hard look at their existing programs and the 5-year regional network assessment) and EPA is willing to be flexible on current requirements⁴, then this will provide resources to conduct some of the new monitoring. Our ability to do any new monitoring will come at the cost of the existing monitoring network. Also, it should be noted that the savings due to shutting down a monitor at an existing site or even shutting down the entire site are generally insufficient to pay for the expenses of creating a new site. By working together, states and EPA may be able to deploy new networks in a phased approach as new funding becomes available and as disinvestments in current monitoring are approved.

⁴ Although 40 CFR Part 58.14c provides criteria for discontinuing a monitor or monitoring site (i.e., a monitor which has shown attainment during the previous five years, that has a probability of less than 10 percent of exceeding 80 percent of the applicable NAAQS during the next three years based on the levels, trends, and variability observed in the past, and which is not specifically required by an attainment plan or maintenance plan), we believe that clearer criteria and more flexibility is needed, if we wish to achieve any meaningful resource savings.

Advantages: Shows good faith effort to conduct new monitoring despite very difficult financial times through cooperative state-EPA partnerships

Disadvantages: EPA flexibility is outside our control, so we may not be able to disinvest as much as we would like

Existing Programs of Little Value: As noted above, disinvestments in certain existing programs are necessary to provide resources to pay for the new monitoring requirements. In its draft FY2012 grant guidance, EPA provides a section in Appendix C – Ambient Air Monitoring entitled “Disinvestment and Other Changes”. The only two disinvestment suggestions in this section are changes to the PM_{2.5} mass and the PM_{2.5} speciation networks. In light of EPA’s pending rulemaking on the PM_{2.5} ambient standard, however, it may not be prudent to shut down any PM_{2.5} monitor that may exceed the new standard. Nevertheless, given the pending shift in the funding basis for this monitoring from section 103 to section 105 (and the need for states to now provide a 40% match on the federal funds under section 105), states unable to provide the match will have fewer monitoring dollars available. Consequently, these states will be forced to cut-back on PM_{2.5} monitoring.

After reviewing the existing programs, we believe the following programs have little value and, as such, are candidates for disinvestments:

- PM10 - Most existing sites measure concentrations well below the current 24-hour standard for this pollutant. Thus, the current large network in the region (i.e., more than 80 monitors) is unnecessary.
- CO – Most existing sites measure concentrations well below the current 1-hour and 8-hour standards for this pollutant. Thus, the current large network in the region (i.e., more than 30 sites) is unnecessary, including in maintenance areas. We recognize, however, EPA’s recent interest in near-roadway measurements for CO and are willing, as part of our phased regional approach for near-roadway NO₂ monitoring, to include CO monitoring at the initial monitoring site in 2 – 3 large cities.

Other low value monitoring include: (a) source-oriented Pb monitors that have non-detectable concentrations, (b) trace level instruments measuring non-detectable or barely detectable concentrations at some NCORE sites, and (c) the 1-in-3-day sampling at rural IMPROVE sites (1-in-6-day sampling would save money). The savings due to shutting down a monitor at an existing site or even shutting down the entire site are generally insufficient to pay for the expenses of creating a new site.

Review of New Requirements: A review of the new requirements is provided below, along with our recommendation for what the states are able to do. These recommendations reflect a desire to partially meet the new requirements (i.e., Option “b” above).

NO₂: On January 22, 2010, EPA revised the primary air quality standard for NO₂ (75 FR 6474). EPA also made changes to the NO₂ monitoring requirements: (1) at least one monitor near a major road (i.e., no more than 50 m away from the nearest traffic lane) in any urban area with a population greater than or equal to 500,000 people and a second monitor near a major road in areas with either population greater than or equal to 2.5 million people, or one or more road segment with an annual average daily traffic (AADT) count greater than or equal to 250,000 vehicles; and (2) a minimum of one monitor would be placed in any urban area with a population greater than or equal to 1 million people to assess community-wide concentrations. In addition, EPA will site at least 40 additional monitors nationally to

protect communities that are susceptible and vulnerable to NO₂-related health effects. All monitors are to be operational by January 1, 2013.

In its September 14, 2009, comments to EPA on the proposed NO₂ standard, the National Association of Clean Air Agencies (NACAA) urged EPA to convene the CASAC Ambient Air Monitoring and Methods Subcommittee to obtain expert advice on near-road and area-wide NO₂ monitoring, and to fund and deploy a focused, near-term research network of near-roadway, special purpose monitors in order to answer a number of technical questions. EPA has responded positively to these suggestions. First, EPA is currently embarking on a near-roadway monitoring pilot study. We fully support the pilot study effort. The study will consist of a first phase of monitoring in five cities (Albuquerque, Baltimore, Boise, Miami, and Tampa) and, possibly, a second phase in additional cities. Second, the CASAC Subcommittee met on September 29 and 30, 2010, to discuss a number of charge questions. In their response letter to EPA, the CASAC Subcommittee expressed concern with the timing for the current network deployment (January 1, 2013) and the pilot study. The CASAC Subcommittee recommended a phased deployment in order to utilize the information from the pilot study. We fully support the recommendation for phased deployment. We also support the concept of near-roadway measurements where population exposure is a real issue. Given that such monitoring will be dominated by on-road mobile sources, however, we believe that there will be great redundancy in having 20 such new sites in the region. **In light of resource constraints, we recommend the following:**

- **EPA and the affected states should conduct both phases of the pilot study**
- **Based on a review of the results of the pilot study, we will develop a prioritized regional phase-in approach for near-roadway monitoring. It is expected that this will consist of:**
 - (1) Initially, 1 site in 2 – 3 large urban areas (location TBD), and**
 - (2) If warranted, 1 site in a few additional urban areas at a later date (number, location TBD)**

Two of the initial cities could be Detroit and Minneapolis, if: (a) EPA allows the State of Michigan to take over equipment and operations at the existing near-roadway site at Eliza Howell Park in Detroit, and (b) EPA allows the State of Minnesota to terminate CO monitoring in two maintenance areas (St. Paul and Duluth) where the current measured values are well below the ambient standard. Indianapolis could also be one of these cities. Although the deployment date for the Eliza Howell site would be immediately upon transfer of equipment and operations to the State, the deployment date for the Minneapolis and Indianapolis sites is uncertain.

We also recommend that EPA revisit the near-roadway NO₂ monitoring requirements. We believe that the population threshold requiring near- roadway NO₂ monitoring should be > 2.5 million for a first tier of sites across the country. Monitoring programs should have until January 1, 2014 to commence monitoring operations. We also recommend consideration of a second tier of near-roadway NO₂ monitoring sites for MSAs of > 1.5 million that would be deployed on a regional basis using criteria developed in collaboration with EPA. This second tier would not apply for CO monitoring.

Furthermore, we recommend that the 40 additional monitors to protect communities that are susceptible and vulnerable to NO₂-related health effects be located at existing monitoring sites selected by states and EPA working together cooperatively.

SO₂: On June 2, 2010, EPA revised the primary air quality standard for SO₂ (75 FR 35520). EPA also made changes to the SO₂ monitoring requirements. Specifically, EPA adopted a hybrid approach involving both modeling and monitoring for the purpose of assessing compliance with the new short-term 1-hour standard. The final monitoring regulations require 163 monitors to be placed in Core Based Statistical Areas based on a population weighted emissions index for the area: 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. Currently, there are approximately 470 SO₂ monitors nationwide. Some of these existing SO₂ monitors meet the siting requirements of the final rule. EPA estimates that 41 new monitoring sites will need to be established nationwide, including 9 new sites in Region 5. States may, with EPA approval, relocate some of the existing SO₂ monitors. All newly sited SO₂ monitors must be operational by January 1, 2013.

Given the heavy reliance on modeling in implementing the SO₂ program and the relatively large number of existing sites in Region 5 (i.e., about 60 sites), we recommend that no new SO₂ sites be added in Region 5, but states should be allowed to relocate some existing sites, if resources permit. Also, as noted above, to maintain our core existing monitoring programs, we are concerned about the lack of dedicated funding for replacing aging equipment.

CO: On January 28, 2011, EPA proposed to retain the existing air quality standards for CO (76 FR 8158). EPA also proposed to revise minimum requirements for CO monitoring by requiring CO monitors to be sited near highly trafficked roads in certain urban areas – i.e., co-location of these CO monitors with a subset of NO₂ near-roadway monitors in urban areas having populations of 1 million or more. (Note, the CASAC Ambient Air Monitoring and Methods Subcommittee suggested that other measurements may be desirable at the near-roadway sites, such as optical black carbon (as a surrogate for elemental carbon), meteorology, and ultra-fine particulate matter.) EPA estimates that the proposed requirement to include CO monitors at these near-road stations would result in the operation of approximately 77 CO monitors within 53 urban areas, including 11 new sites in Region 5. EPA proposed that the required CO monitors would be operating by January 1, 2013.

As noted above, we support the concept of near-roadway measurements where population exposure is a real issue. We recommend that CO monitoring be included at near-roadway NO₂ monitoring sites following a similar prioritized regional phase-in approach, as discussed above. To help free-up resources, monitors in maintenance areas with concentrations consistently below the standard should be discontinued. The savings due to shutting down a monitor at an existing site or even shutting down the entire site are generally insufficient to pay for the expenses of creating a new site.

We also recommend collocation of CO monitors with NO₂ near road sites in MSAs with populations of 2.5 million and greater. Existing near road CO monitoring data indicate that monitoring for CO in smaller MSAs would not provide data useful to protect public health. Additionally, a threshold of > 2.5 million would save the federal, state and local governments significant funds.

Pb: On December 14, 2010, EPA revised the Pb ambient monitoring requirements (75 FR 81126)⁵: (1) the emission threshold for source-oriented monitoring was reduced from 1.0 to 0.5 TPY, (2) a special monitoring study is needed at 15 additional airports, and (3) Pb monitoring is needed at urban NCORE

⁵ On November 12, 2008 (73 FR 66964), EPA revised the primary and secondary air quality standards for Pb. EPA also improved the existing Pb monitoring network by requiring monitors to be placed in areas with sources such as industrial facilities that emit 1 ton or more per year (tpy) of Pb and in urban areas with a population of 500,000 or more. In Region 5, 19 new source-oriented monitoring sites were established.

sites (note: all but 2 of the 7 existing urban NCORE sites already have Pb monitors). These new monitors are to begin by December 27, 2011. In Region 5, this might mean as many as 13 new source-oriented sites, 1 airport special study site, and adding Pb monitors at 2 urban NCORE sites. **We recommend that states continue with screening modeling to determine how many new source-oriented sites are needed and that a few additional source-oriented sites be established if states are allowed to disinvest in other areas or EPA provides sufficient funding for start-up, operation, and maintenance. Also, we recommend that the 1 airport special study site (if EPA provides sufficient funding) and 2 more urban Pb NCORE monitors be established.**

Ozone: On July 16, 2009, EPA proposed to revise the monitoring network design requirements for ozone, in response to the new 0.075 ppm ozone standard (74 FR 34525)⁶. Specifically, EPA proposed to modify minimum monitoring requirements in urban areas, add new minimum monitoring requirements in non-urban areas, and modify the length of the required ozone monitoring season in some states. EPA estimated that about 270 new ozone monitors (including more than 30 new sites in Region 5) would be required (nationally) to meet the proposed requirements for additional urban and rural monitoring sites. Currently, there are about 1,200 monitors operating (nationally) with about 1,000 sites representing urban areas and about 200 representing rural areas. In Region 5, there are approximately 200 ozone monitoring sites. Despite the large number of sites currently operating and the regional nature of ozone concentrations, additional monitoring sites would enhance spatial coverage in both populated and rural areas. **We recommend that new ozone sites be established if states are allowed to disinvest in other areas or EPA provides sufficient funding for start-up, operation, and maintenance. Also, as noted above, to maintain our core existing monitoring programs, we are concerned about the lack of dedicated funding for replacing aging equipment.**

Secondary NOx/SOx: Although EPA has yet to propose this standard, it has released its “Policy Assessment for the Review of the Secondary National Ambient Air Quality Standards for Oxides of Nitrogen and Oxides of Sulfur”, February 2011. The document describes a new metric (aquatic acidification index) which is a function of ambient SOx and NOy concentrations. Specifically, EPA believes that SOx is represented by gaseous SO2 and particulate SO4 concentrations, and NOy is an aggregate measure of NOx and all of the reactive oxidized products of NOx. Although the specific monitoring requirements for this standard are unclear, EPA did note in the policy assessment that “CASTNET provides mostly rural measurements of SO2, total nitrate, and ammonium, and affords an existing infrastructure useful for future monitoring in support of a potential NOx and SOx secondary standard. However, the lack of NOY, SOX and NHX measurements in sensitive ecosystems will require attention in conjunction with any rulemaking for a secondary standard for oxides of nitrogen and sulfur.” **Although it is premature to offer any recommendation on the monitoring to implement this standard (in advance of a formal proposal), we agree it is appropriate to rely on the existing monitoring infrastructure and that little, if any, additional monitoring should be required.**

PM_{2.5}: Although EPA has yet to propose this standard, it has released its “Policy Assessment for the Review of the Particulate Matter National Ambient Air Quality Standards”, June 2010. The document notes that “the currently available information clearly calls into question the adequacy of the current standards and that consideration should be given to revising the suite of standards to provide increased

⁶ On January 6, 2010 (75 FR 2958), EPA proposed to revise the ozone NAAQS. In this action, EPA referenced its July 2009 proposed monitoring revisions, but did not make any changes to that proposal. EPA has recently indicated that it expected to finalize the monitoring requirements in conjunction with a final decision on the ozone NAAQS – i.e., by the end of July 2011.

public health protection.” The document goes on to state that “...staff concludes that consideration should be given to alternative annual PM_{2.5} standard levels in the range of 13 to 11 µg/m³, in conjunction with retaining the current 24-hour PM_{2.5} standard level of 35 µg/m³, and that consideration could also be given to an alternative 24-hour PM_{2.5} standard level of 30 µg/m³ particularly in conjunction with an annual standard level of 11 µg/m³.” In addition, “the currently available information clearly calls into question the adequacy of the current standards and that consideration should be given to revising the suite of standards to provide increased public welfare protection.” The document goes on to state that “...staff concludes that consideration should be given to a 1-hour averaging time, considering only daylight hours with relative humidity no higher than 90 %, and a level, defined in terms of PM_{2.5} light extinction, in the range of 191 to 64 Mm⁻¹ to target protection against visibility impairment related to fine particles.”

Although the specific monitoring requirements for this standard are unclear, EPA did discuss in the policy assessment the benefits of increased monitoring for PM_{2.5} chemical species (continuous measurements), ultra-fine particle monitoring, population-oriented micro- and middle-scale “hot spots”, and light extinction measurements. **Although it is premature to offer any recommendation on the monitoring to implement this standard (in advance of a formal proposal), we believe that PM_{2.5} monitoring, in general, is a high priority, but the pending shift in the funding basis (i.e., from section 103 to section 105) may necessitate the shutdown of some existing sites. (Furthermore, it is not clear that EPA’s encouragement for states to move from manual FRMs to continuous FEMs will provide much, if any, resource savings.) Additional PM_{2.5}-related monitoring, as suggested by EPA in its policy assessment, therefore, does not seem possible. Also, as noted above, to maintain our core existing monitoring programs, we are concerned about the lack of dedicated funding for replacing aging equipment.**

Summary: We recommend the following actions to address the new monitoring requirements:

<u>Pollutant</u>	<u>Monitoring</u>	<u>Recommendation</u>
NO ₂	near-roadway	Phased regional approach: (1) initially, 1 site in 2 – 3 large urban areas (locations TBD), (2) If warranted, 1 site in a few additional urban areas (number and locations TBD)
SO ₂	source/pop-oriented	no new sites, but relocate existing sites, as resources permit
CO	near-roadway	(same as NO ₂ – see above)
O ₃	rural areas, smaller cities	establish a few new sites, as resources permit
Pb (Phase 2)	NCORE (urban), 0.5 TPY sources, airports	establish a few new source-oriented sites, as resources permit, and 1 airport site, if EPA pays
NO _x /SO _x (<i>sec stand.</i>)	TBD	use existing infrastructure
PM _{2.5}	TBD	may need to shutdown some sites with shift in funding basis, no additional monitoring possible

Table1. Number of Monitors Required in Region 5 States for New Monitoring Requirements

NAAQS:	1-Hr NO2 NAAQS		CO NAAQS	1-Hr SO2 NAAQS	8-Hr O3 NAAQS	3-Mo Pb NAAQS	PM2.5 NAAQS	Sec. NOx/SOx
Required Operation By:	January 1, 2013		January 1, 2013	January 1, 2013	1st day of 2013 ozone season	December 27, 2011		
Location	Near-Road	Community						
Akron, OH	1	0	0	1	Proposed Revisions to Ozone Monitoring Requirements: July 8, 2009 Additional Monitoring Requirements in Urban Areas between 50,000 - 350,000 People Minimum of Three Ozone Monitors in Non-Urban Areas	Revisions to Lead Monitoring Requirements: December 14, 2010 Emission Threshold Changed from 1.0 tpy to 0.5 tpy for an Industrial Facility 1.0 tpy Maintained for Airports, but 1-Year Monitoring Study at 15 Airports Large Urban Area (500,000 + people) Monitoring Required at NCore Sites	Proposed PM2.5 NAAQS Expected: Summer 2011 Not Clear if Additional Monitoring Will Be Required.	Proposed Secondary NOx/SOx NAAQS Expected: July, 2011 Not Clear if Additional Monitoring Will Be Required.
Chicago-Naperville-Joliet, IL-IN-WI	2	1	2	3				
Cincinnati-Middletown, OH-KY-IN	1	1	1	2				
Cleveland-Elyria-Mentor, OH	1	1	1	2				
Columbus, OH	1	1	1	1				
Davenport-Moline-Rock Island, IA-IL	0	0	0	1				
Dayton, OH	1	0	0	1				
Detroit-Warren-Livonia, MI	2	1	2	2				
Evansville, IN-KY	0	0	0	2				
Grand Rapids-Wyoming, MI	1	0	0	0				
Green Bay, WI	0	0	0	1				
Holland-Grand Haven, MI	0	0	0	1				
Indianapolis-Carmel, IN	1	1	1	2				
Lansing-East Lansing, MI	0	0	0	0				
Louisville/Jefferson County, KY-IN	1	1	1	2				
Madison, WI	1	0	0	1				
Milwaukee-Waukesha-West Allis, WI	1	1	1	1				
Minneapolis-St. Paul-Bloomington, MN-WI	2	1	2	2				
Monroe, MI	0	0	0	2				
Paducah, KY-IL	0	0	0	1				
Parkersburg-Marietta-Vienna, WV-OH	0	0	0	1				
Peoria, IL	0	0	0	1				
Point Pleasant, WV-OH	0	0	0	1				
St. Louis, MO-IL	2	1	2	2				
Terre Haute, IN	0	0	0	1				
Toledo, OH	1	0	0	1				
Weirton-Steubenville, WV-OH	0	0	0	1				
Wheeling, WV-OH	0	0	0	1				
Youngstown-Warren-Boardman, OH-PA	1	0	0	1				
TOTALS:	20	10	14	38				

Totals by State:	NO2		CO	SO2	O3		Pb	
	Near-Road	Community			Rural	Urban	New S-O	Airport
Illinois	2	1	2	4	3	2	2	
Indiana	1	1	1	5	3	2		
Michigan	3	1	2	5	3	5	2	1
Minnesota	2	1	2	2	3	2		
Ohio	7	3	3	9	3	2	3	
Wisconsin	2	1	1	3	3	2	6	
	17	8	11	28	18	15	13	1

Areas not included in state totals:

- St.Louis, MO-IL
- Louisville/Jefferson County, LY-IN
- Davenport-Moline-Rock Island, IA-IL
- Paducah, KY-IL
- Parkersburg-Marietta-Vienna, WV-OH
- Point Pleasant, WV-OH
- Weirton-Steubenville, WV-OH
- Wheeling, WV-OH

Table 2. State Rankings of Air Monitoring Programs

	IL	IN	MI	MN	OH	WI		ave
Criteria Pollutants and Related Programs								
O3 - existing	2a	1	1	6a	1	3a		2.3
O3 - new	2b	9	2	6b (move existing, low priority)	12	11		7.0
PAMS	8	13	depends on level of new NAAQS	NA	NA	7		9.3
PM2.5-mass (FRM)	1a	2	3	1a	2	1a		1.7
PM2.5-mass (continuous)	1b	3	10 a	1b	4	1b		3.3
PM2.5-speciation	7	4	depends on level of new NAAQS	2a	6	2		4.2
PM10	11	15	11	12	16	13		13.0
SO2 - existing	3a	10	9a	11	3	12		8.0
SO2 - new	3b	11	9b (if co-locate w existing site)	NA	7 (relocate)	14		8.8
NO2 - first NR site	9	12	5a (if can use Eliza Howell)	7	14	15a		10.3
NO2 - additional NR site	(little value)	NA	14c	14	17	15b		15.0
NO2 - community sites	12	19	5b (if can use E. 7 Mile)	NA		9		11.3
Secondary NOx/SOx	13	20	13	15	15	18		15.7
CO - existing	10a	18	9a (if co-locate w/ NCORE)	10a	13	16		12.7
CO - new	10b	14	9b (if can use Eliza Howell)	10b	16	17		12.7
Pb - non attaining	4	5	3 (Belding)	3	8	5a		4.7
Pb - new lead sites	4	17	4 (if easy to operate)	NA	10	5b		8.0
Pb - airport lead	NA	NA	14a	NA	NA	NA		14.0
NCORE	5	6	8	4	9	4		6.0
Air Toxics								
NATTS	6	NA	6	NA	NA	6		6.0
NADP - Mercury Deposition Network	NA	NA	NA	9	NA	10a		9.5
School Program	(little value)	16	14b	NA	18 (low value)	NA		16.0
State air toxics program	14	7	8	5	5	6b		7.5
Other								
IMPROVE	(little value)	NA	12	2b	NA	8		7.3
NADP - National Trends Network	NA	NA	NA	8	NA	10b		9.0
Visibility Cameras	12	NA	NA	13	NA	20		15.0
Urban Visibility	(little value)	21	14d	16	NA	21		18.0
Meteorological Data	15	8	10b		11	19		12.6