

# Overview of NAAQS Monitoring Issues

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## *Outline*

- Review of NAAQS monitoring issues
  - NO<sub>2</sub> two-tier network with near-road requirement
  - Pb monitoring revisions based on reconsideration request
  - Ozone monitoring rule status
  - Update on additional reviews
    - PM, SO<sub>2</sub>
- National Monitoring Conference

## Updating the NO<sub>2</sub> Monitoring Network

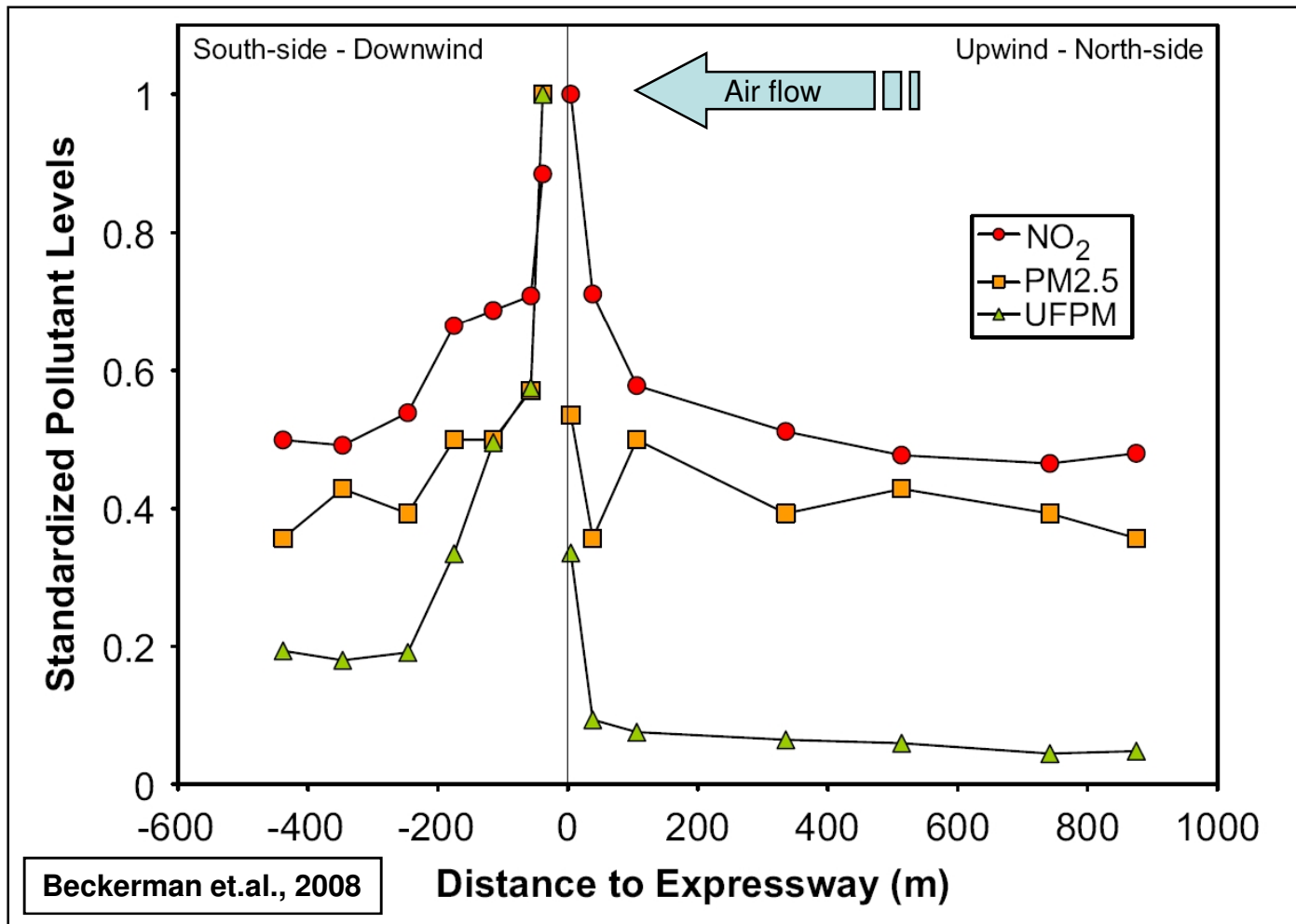
- EPA's central network design concept and historical practice has been to require NAAQS monitoring **in locations of maximum concentrations**
- The NO<sub>2</sub> network, therefore, requires revision to account for the proposed shift to short-term averages (1-hour) versus the current NAAQS based on annual average
- EPA is proposing to change the monitoring network to capture both peak NO<sub>2</sub> concentrations such as those that occur near roadways AND community-wide NO<sub>2</sub> concentrations

## What's Key in the Proposed NO<sub>2</sub> Requirements

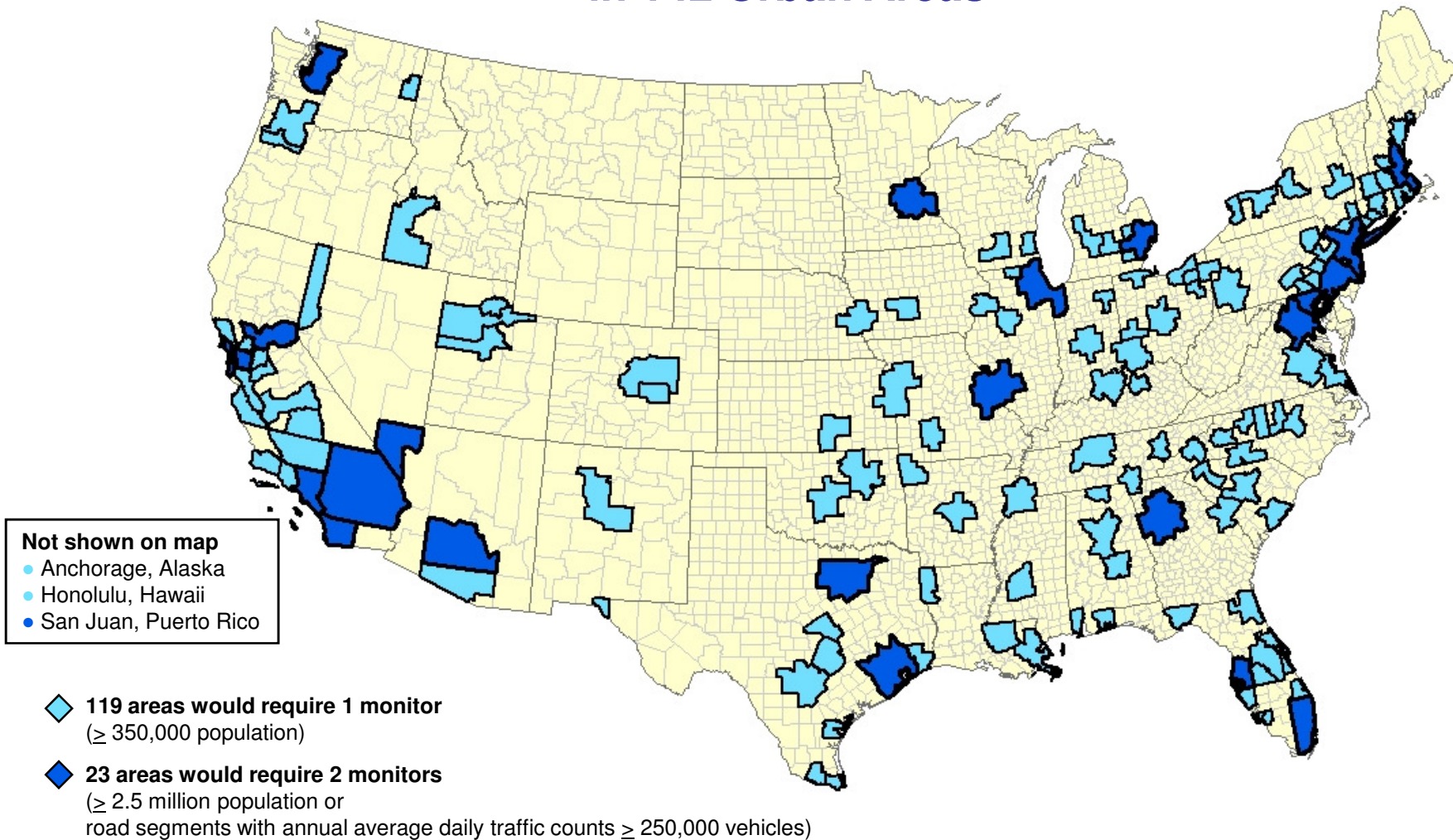
- Proposed near-road monitor placement criteria include requirement to be within 50 meters from edge of traffic lane of selected major roads (based on annual average daily traffic)
  - Potential issues: road grades, noise barriers, air flow, access
- EPA is thinking ahead – building the infrastructure to measure other near-road pollutants including CO, PM, black carbon, and air toxics
- We are proposing a long lead-time before new monitors are required to be operational (due to deployment complexity)
  - Proposed deadline for operation is January 1, 2013

# Why worry about near-road exposure?

Tens of millions of people live near major roads – their exposure is higher than areas away from roads  
 Multiple articles have reviewed NO<sub>2</sub> behavior in the near road, suggesting general ranges of influence

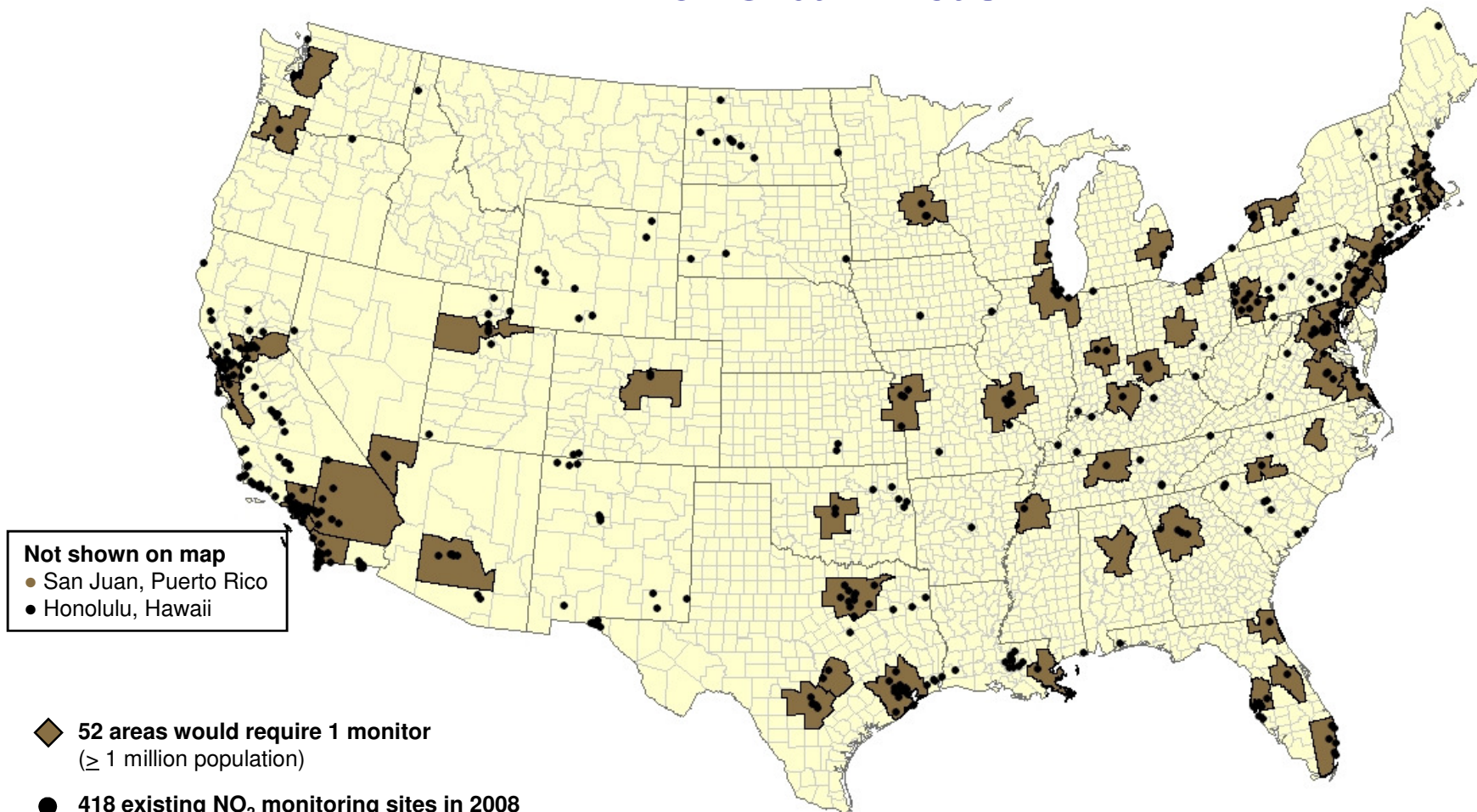


## EPA is Proposing to Monitor NO<sub>2</sub> Concentrations Near Roads in 142 Urban Areas



165 total monitors

## EPA is Proposing to Monitor NO<sub>2</sub> Concentrations Community-Wide in 52 Urban Areas



## Updating the Lead (Pb) Monitoring Network

- Currently required through the 2008 NAAQS revision
  - Monitoring in areas near sources with lead emissions greater than or equal to 1 ton per year (tpy).
    - Waiver process by the EPA Regional Administrator if the monitoring agency can demonstrate that the lead source will not contribute to an ambient concentration greater than 50% of the NAAQS
  - The operation of a (non-source) lead monitor in every urban area with a population of 500,000 or more.
- Source-oriented monitors required to be listed in annual monitoring network plans by July 1, 2009 and operational by January 1, 2010
- Non-source-oriented monitors required to be listed in annual monitoring network plans by July 1, 2010 and operational by January 1, 2011



## Update - EPA To Reconsider Portions of Lead Monitoring Requirements



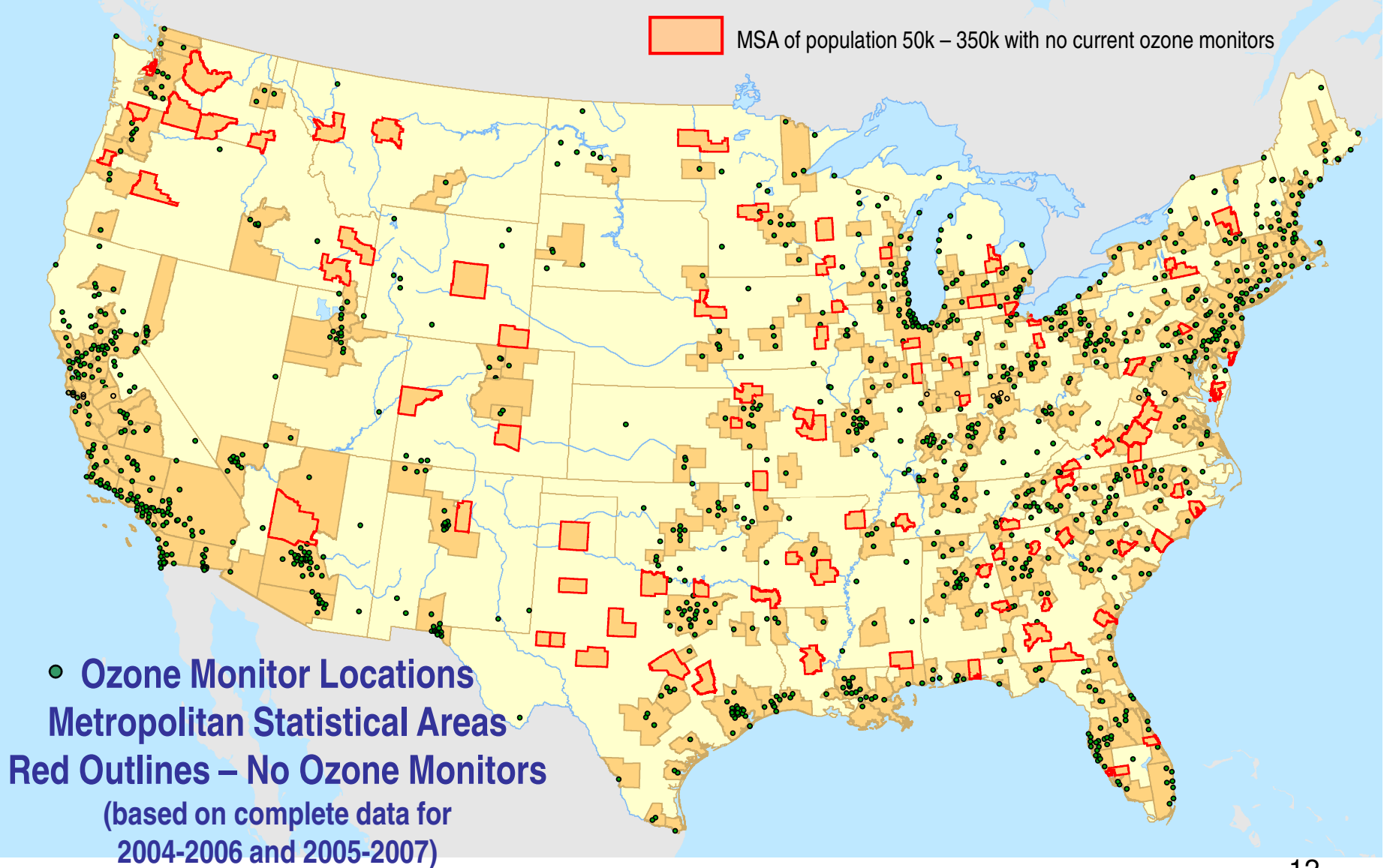
- In January 2009, EPA received a petition to reconsider the lead monitoring requirements from the Missouri Coalition for the Environment Foundation, Natural Resources Defense Council, the Coalition to End Childhood Lead Poisoning, and Physicians for Social Responsibility
- On July 22, 2009, EPA granted the petition for reconsideration to:
  - Reconsider the emissions threshold (currently 1 tpy) for source-oriented monitoring requirements and determine whether it should be lowered, as requested by Petitioners.
  - Reconsider related issues as appropriate, including the requirements for non-source oriented monitoring.
- EPA is not reconsidering the lead standards; implementation of those standards, including existing source monitoring requirements, will move ahead on schedule.

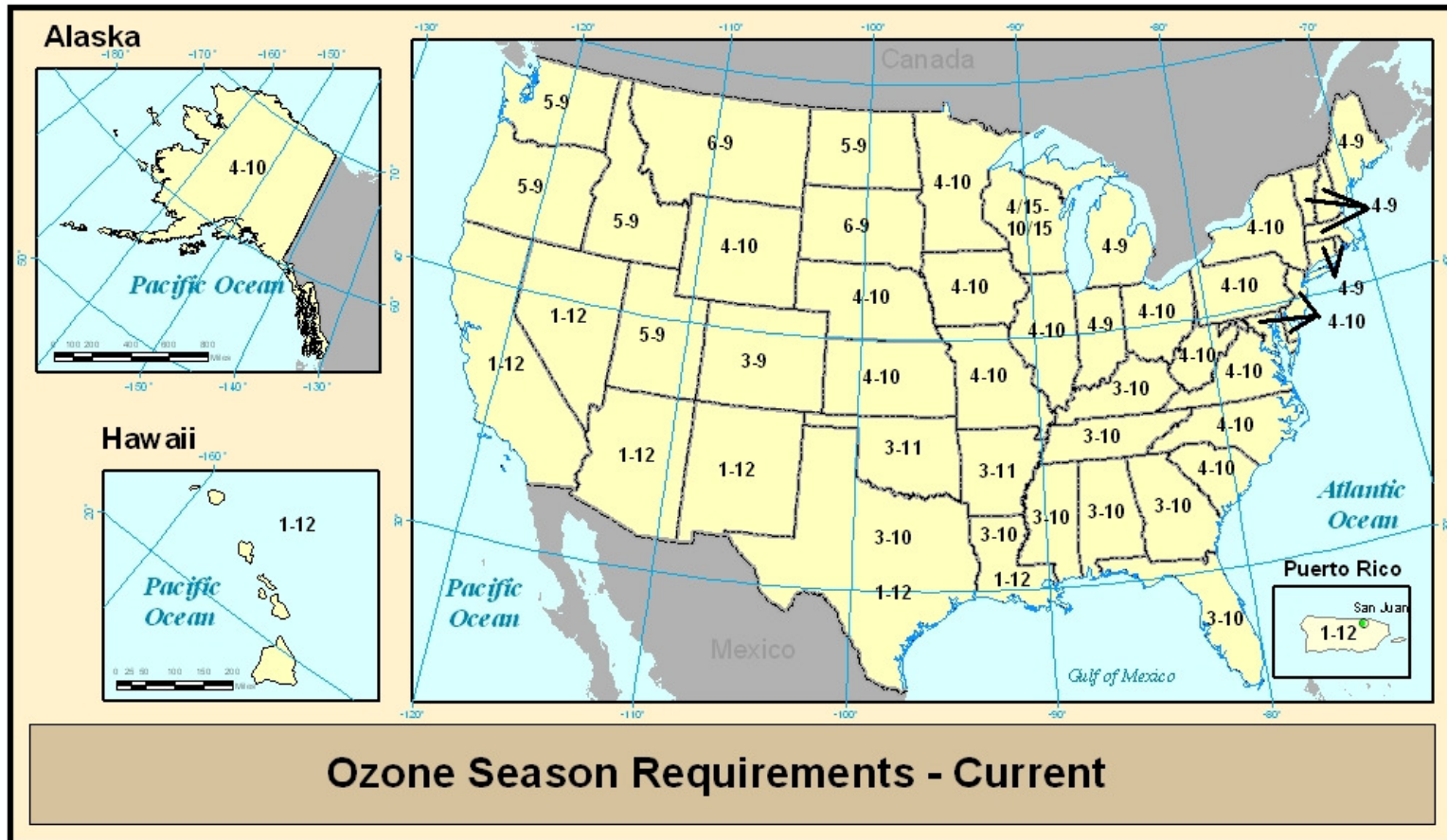
## Status of Pb Monitoring Reconsideration Effort

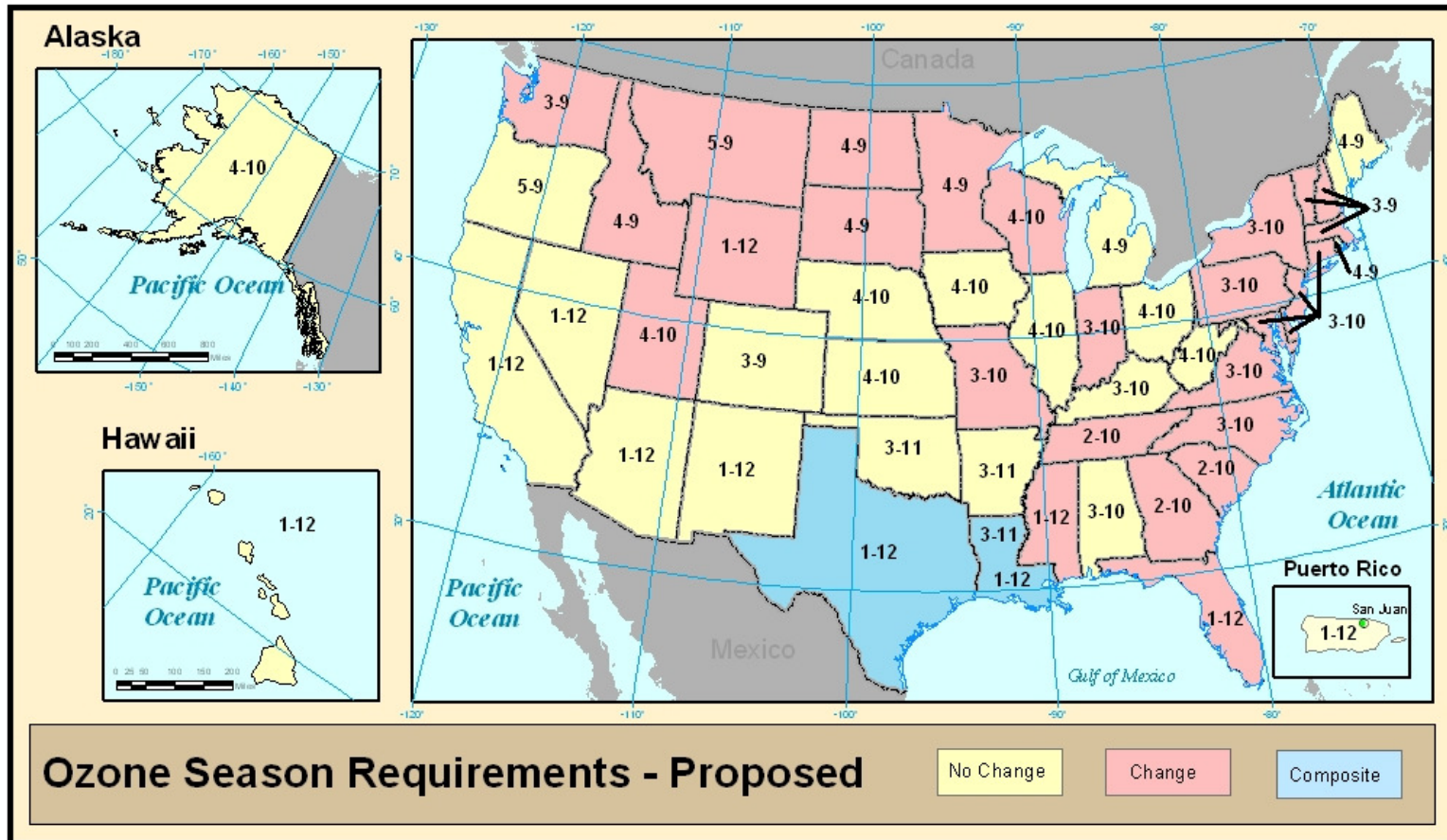
- Proposed monitoring rule – signature expected in October 2009 and final rule in April 2010
- Potential outcomes:
  - Decreased emissions threshold for source monitors in the range 0.5 to 1.0 tpy
  - Re-proposal of non-source requirements to more efficiently implement new monitors through leveraging of existing NCore network
- Potential affect on Pb monitoring networks:
  - Non-source monitors still due January 1, 2011, but implementation approach may change
  - Additional source-oriented monitors potentially due a year after final monitoring rule (spring 2011)

## Updating the Ozone Monitoring Network

- Intent noted in 2008 NAAQS final rule; monitoring proposal published July 16, 2009, final rule expected in spring 2010
- Key provisions:
  - Additional monitors in smaller urban areas where not already operating
  - New non-urban monitors (3 per state) to characterize sensitive ecosystems and/or to provide coverage in less populated areas where elevated levels are occurring or likely
  - Lengthened ozone monitoring seasons to ensure network operation when ambient levels approach NAAQS
- Proposed new monitors deployed by January 1, 2012
- Proposed ozone monitoring season changes effective on the first day of ozone monitoring in 2011
- Proposed requirements fully support all possible options under recently announced ozone NAAQS reconsideration







## Schedule for PM NAAQS review

- Current schedule:
  - Integrated Science Assessment (ISA) – December 2009
  - Risk/Exposure Assessment (REA) – July 2010
  - Proposed rule – January 2011
  - Final rule – October 2011
- Schedule subject to change pending decisions on NAAQS review process and how to respond to remand

## PM NAAQS Review and Monitoring

- $PM_{2.5}$ 
  - Need for nationally robust network of FRM/FEM,  $PM_{2.5}$  continuous mass, and chemical speciation will continue
- $PM_{10}$ ,  $PM_{10-2.5}$ 
  - Need to retain  $PM_{10}$  monitoring in appropriate locations as the coarse indicator is not expected to change as a result of this NAAQS review
  - $PM_{10-2.5}$  mass monitoring to begin at NCore multi-pollutant stations by January 1, 2011
- PM Visibility (secondary NAAQS)
  - An indicator (i.e., a Federal Reference Method) for visibility will be needed if a NAAQS for urban-focused visibility is proposed and finalized
    - Two methods – light scattering and light absorption may be necessary for direct measure of light extinction
    - PM continuous mass could be proposed as an indicator, but would not be a direct measure of visibility



## Ambient Monitoring Issues for SO<sub>2</sub> NAAQS

- Current size of the SO<sub>2</sub> network is between 450 – 500 monitors
- Maintain monitoring network focus in locations of expected maximum concentrations
- Components of an SO<sub>2</sub> network design under consideration if a short-term NAAQS is proposed:
  - Population-based network with minimum number of monitors per CBSA above a population threshold
  - Source-oriented network to monitor for likely violations caused by sources that combine high emissions with other factors that can increase ground-level impacts
  - Both tiers will require a combination of new sites, relocated sites, and some current sites that are appropriately located
- Proposal must be signed no later than November 16, 2009

## 2009 National Ambient Air Monitoring Conference

EPA in conjunction with NACAA  
Gaylord Opryland Hotel, Nashville, Tennessee  
November 2-5, 2009



- Full day of training on network assessments, methods, new technology, quality assurance, and AQS
- Plenary and technical breakout sessions
- Extensive vendor attendance
- Full participation by OAQPS and Regional monitoring contacts
- **If your monitoring staff attend any conferences or meetings this year, this should be the one! (or wait 3 more years)**
- Hotel block closes October 5, 2009
- <http://www.epa.gov/ttn/amtic/naamc.html>