

US EPA's Proposed NAAQS for Coarse Particles (PM_{10-2.5})

Monitoring Methods
&
Network Design

Bob Pallarino
US EPA Region 9
Technical Support Office
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Proposed PM_{10-2.5} NAAQS

- Averaging period of 24 hours
- Level set at 70 micrograms per cubic meter
- Form of standard set at the 98th percentile averaged over 3 years



Proposed PM_{10-2.5} NAAQS

- Monitoring methods
 - Samplers
 - Sampling frequency
- Network Design
 - Required # of monitoring sites
 - Siting criteria



Monitoring Methods

- Federal Reference Method (FRM)
 - Will rely on the subtraction method
 - $PM_{10-2.5}$ will be determined using a special PM_{10} sampler (PM_{10c}) and a $PM_{2.5}$ sampler
 - $PM_{10-2.5}$ will be the difference between the PM_{10c} concentration and the $PM_{2.5}$ concentration



Monitoring Methods

- Can PM₁₀ samplers be used to assess PM_{10-2.5} compliance?
 - Yes, under certain conditions and with certain restrictions
 - Must sample every day
 - 98 percentile for most recent year of PM₁₀ data must be less than PM_{10-2.5} NAAQS
 - If more than 7 24-hour exceedances recorded in a calendar year, a PM_{10-2.5} FRM or FEM must be deployed within one year (40 CFR 58, App C, sec 2.2)



Monitoring Methods

- Sampling Frequency
 - All $PM_{10-2.5}$ samplers must operate on an everyday schedule
 - $PM_{10-2.5}$ FRM samplers can operate less frequently than everyday if collocated with a continuous $PM_{10-2.5}$ sampler designated as a FEM



Monitoring Methods

- EPA anticipates that most monitoring sites will utilize continuous FEM samplers
- Where an agency chooses to use FEMs at all required sites, FRM samplers will be utilized for quality assurance purposes.



Network Design

- Minimum monitoring requirements only apply to MSA containing urbanized areas of at least 100,000 people
- Monitoring sites eligible for comparison to the NAAQS must be middle or neighborhood scale



Network Design

- Minimum number of sites based on population and estimated design values
- Number of sites will range from 1 to 5
- MSA greater than 500,000 with design values greater than 80% of the NAAQS must also have at least one speciation site



Network Design

PM10-2.5 Minimum Monitoring Requirements

MSA Population	Design Value > 80% NAAQS	Design Value 50%-80% of NAAQS	Design Value < 50% of NAAQS
$\geq 5,000,000$	5	3	2
1,000,000 - < 5,000,000	4	2	1
500,000 - < 1,000,000	3	1	0
100,000 - < 500,000	2	1	0



Network Design

- 50% of network must be middle scale, maximum concentration site(s)
- For networks of 2 or more sites, 1 site must be neighborhood scale, population oriented site
- For networks of 4 – 5 sites, last monitor can be sited at State's discretion



Special consideration for data comparisons to the NAAQS

- In order for data from a site to be comparable to the NAAQS it must meet five conditions:
 - Must be in an urbanized area of at least 100,000 people
 - Must be in a census block group with a density of 500 or more persons per square mile



Special consideration for data comparisons to the NAAQS

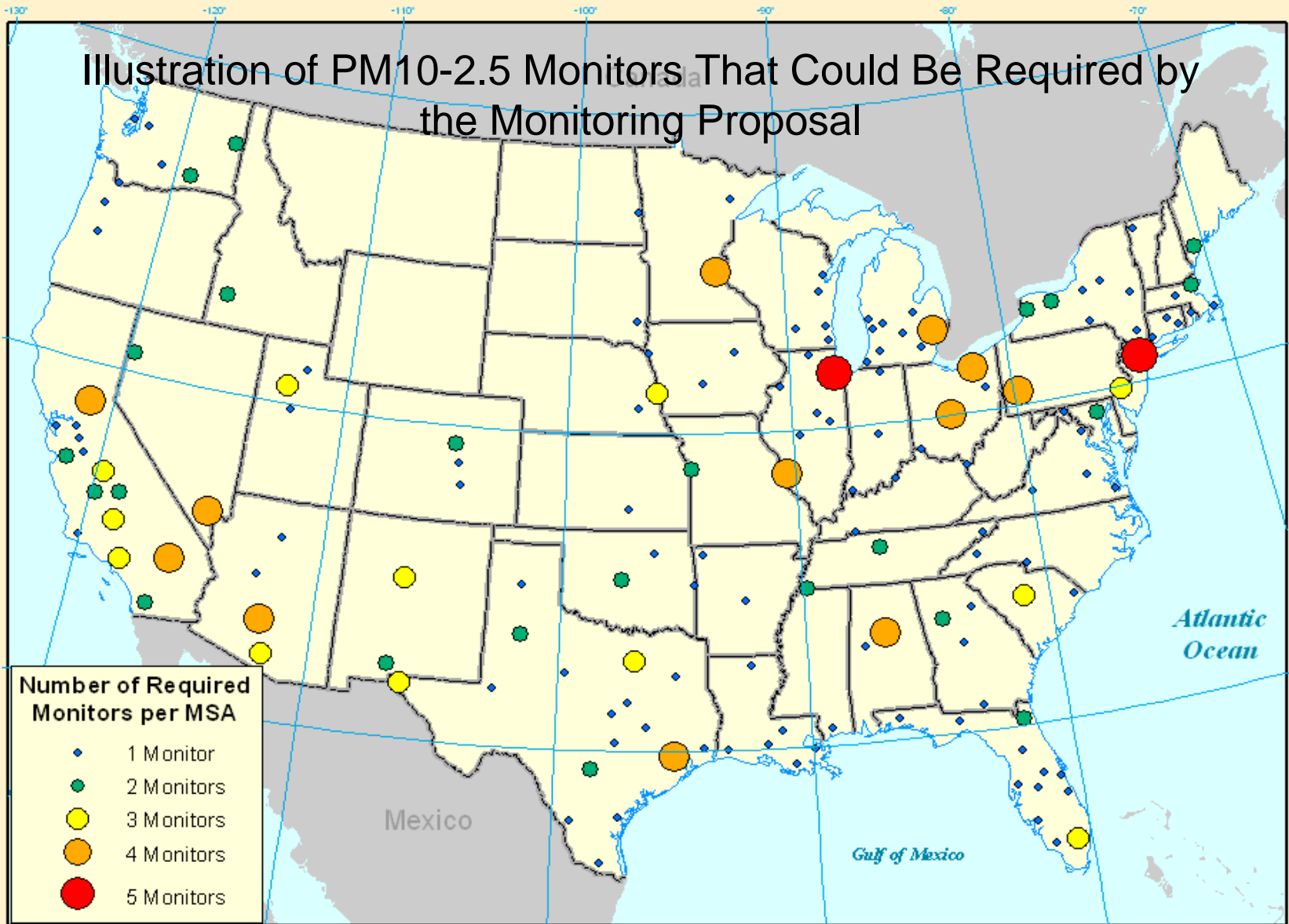
- The site must be population oriented
- The site cannot be a microscale
- PM_{10-2.5} concentrations at the site must be dominated by
 - Resuspended road dust from high density traffic on paved roads; and/or
 - PM generated from industrial activities; and/or
 - PM generated from construction activities
 - PM must **not** be dominated by PM generated by agricultural and/or mining activities



Network Design

- The minimum monitoring requirements would result in a national network of about 250 monitoring sites
- EPA hopes to fund up to 350 monitors to include speciation sites, rural sites, and additional urban sites.

Illustration of PM10-2.5 Monitors That Could Be Required by the Monitoring Proposal



The circles, which are sized to indicate the number of required monitors, appear at the centroid of MSA and do not imply the actual placement of any of the required monitors at particular locations within the MSA.



For More Information

- EPA website for rule package, fact sheets, press releases
 - <http://www.epa.gov/air/particles/actions.html>
- Bob Pallarino
 - US EPA Region 9, (415) 947-4128, pallarino.bob@epa.gov