

National Ambient Air Quality Standards (NAAQS) for PM_{2.5}



Update for MARAMA CEMS Webinar
October 6, 2011

Beth M. Hassett-Sipple
US EPA/Office of Air Quality Planning and Standards

1

PM Standards Have Changed Over Time



EPA has regulated particulate matter since 1971

- **1971:** EPA set standards covering all sizes of airborne particles, including dirt and other larger particles -- known as a "total suspended particulate, TSP"
- **1987:** EPA changed the standards to focus on particles 10 micrometers in diameter and smaller
- **1997:** EPA decided fine and coarse fractions of PM₁₀ should be considered separately
 - Added new indicator to focus on fine particles - PM_{2.5}
- **2006:** EPA revised level of 24-hour PM_{2.5} standards (65 to 35 µg/m³); retained level of annual PM_{2.5} standards (15 µg/m³); retained 24-hour PM₁₀ standards; and revoked annual PM₁₀ standards
 - 2009 - US District Court remanded primary annual PM_{2.5} standard and secondary PM_{2.5} standards to EPA; upheld PM₁₀ decisions
 - EPA is responding to these remands in the current PM NAAQS review

2

Health Effects Associated with Fine Particle Exposures



- Fine particles (PM_{2.5}) in the outdoor air have been linked to a wide range of important adverse health effects, including:
 - Premature death
 - Hospital and emergency department visits for cardiovascular (such as, heart attacks, strokes) and respiratory (such as, aggravated asthma) effects
 - Increases in respiratory symptoms, such as coughing or difficulty breathing
 - Bronchitis
 - Decreased lung function
 - Changes in heart rate and heart rate variability
 - Infant mortality and low birth weight
 - Cancer
- Types of studies:
 - Epidemiology
 - Controlled human exposure
 - Animal



3
