

# September 2006 Revisions to the National Ambient Air Quality Standards for Particle Pollution



**Presentation to the USDA Agricultural Air Quality Task Force  
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## *EPA's PM Standards: Old and New*

	Previous Standards		2006 Standards	
	Annual	24-hour	Annual	24-hour
<b>PM<sub>2.5</sub> (Fine Particles)</b>	<b>15 µg/m<sup>3</sup></b> Annual arithmetic mean, averaged over 3 years	<b>65 µg/m<sup>3</sup></b> 24- hour average, 98 <sup>th</sup> percentile, averaged over 3 years	<b>15 µg/m<sup>3</sup></b> Annual arithmetic mean, averaged over 3 years	<b>35 µg/m<sup>3</sup></b> 24- hour average, 98 <sup>th</sup> percentile, averaged over 3 years
<b>PM<sub>10</sub> (Coarse Particles)</b>	<b>50 µg/m<sup>3</sup></b> Annual average	<b>150 µg/m<sup>3</sup></b> 24-hr average, not to be exceeded more than once per year on average over a three year period	<b>Revoked</b>	<b>150 µg/m<sup>3</sup></b> 24-hr average, not to be exceeded more than once per year on average over a three year period

## *PM<sub>2.5</sub> Standards*

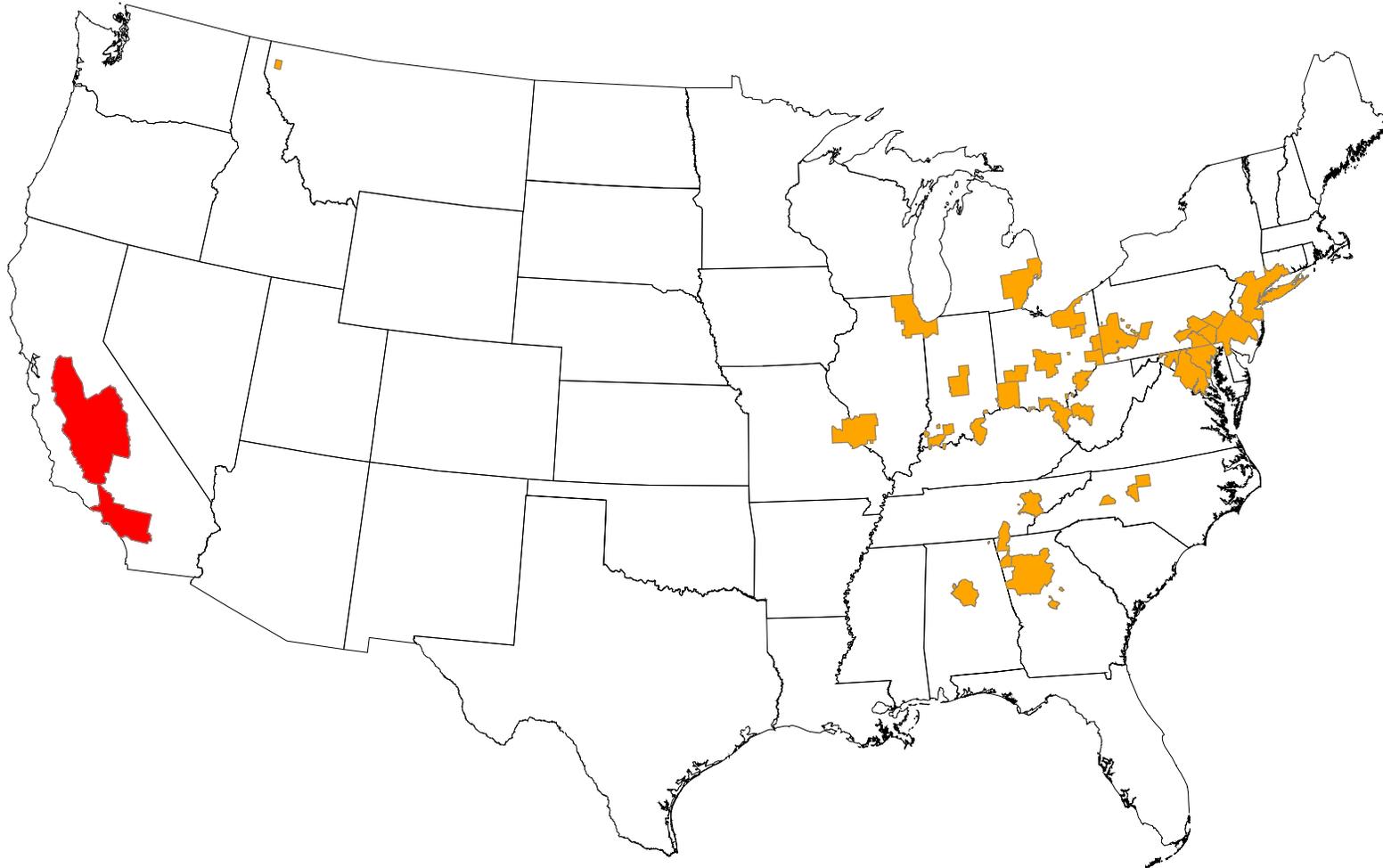
- PM<sub>2.5</sub> 24-Hour Standard
  - Strengthened from the 1997 level of **65  $\mu\text{g}/\text{m}^3$**  to **35  $\mu\text{g}/\text{m}^3$**
  - Retained the form of the 24-hour standard – the average of the 98th percentile of 24-hour PM<sub>2.5</sub> concentrations averaged over three years
  - Secondary 24-hour PM<sub>2.5</sub> standard also retained
- PM<sub>2.5</sub> Annual Standard
  - Retained the level of the **annual PM<sub>2.5</sub>** standard at **15  $\mu\text{g}/\text{m}^3$** , as proposed.
  - An area will meet the annual PM<sub>2.5</sub> standard when the three-year average of the annual average PM<sub>2.5</sub> concentration is less than or equal to 15  $\mu\text{g}/\text{m}^3$ .
  - Secondary annual PM<sub>2.5</sub> standard also retained.

## *Benefits of Meeting Revised PM<sub>2.5</sub> Standards*

- Between \$9 billion and \$75 billion a year in health and visibility benefits in 2020.
- Sample of Annual Health Benefits:
  - 2,500 to 5,700 premature deaths in people with heart or lung disease
  - 97,000 cases of upper and lower respiratory symptoms
  - 2,600 cases of chronic bronchitis
  - 350,000 days when people miss work or school
- EPA estimates the cost of meeting the revised standards at \$5.4 billion.

# Currently Designated PM<sub>2.5</sub> Nonattainment Areas - 1997 Standards

Violated annual and/or 24-hour PM<sub>2.5</sub> standards with designated data (2001-2003\*)



## Legend

### Nonattainment areas violating:

- both annual (15  $\mu\text{g}/\text{m}^3$ ) and 24-hour (65  $\mu\text{g}/\text{m}^3$ ) standards
- ONLY the 24-hour standard (65  $\mu\text{g}/\text{m}^3$ )
- ONLY the annual standard (15  $\mu\text{g}/\text{m}^3$ )

### Number of Areas

2

0

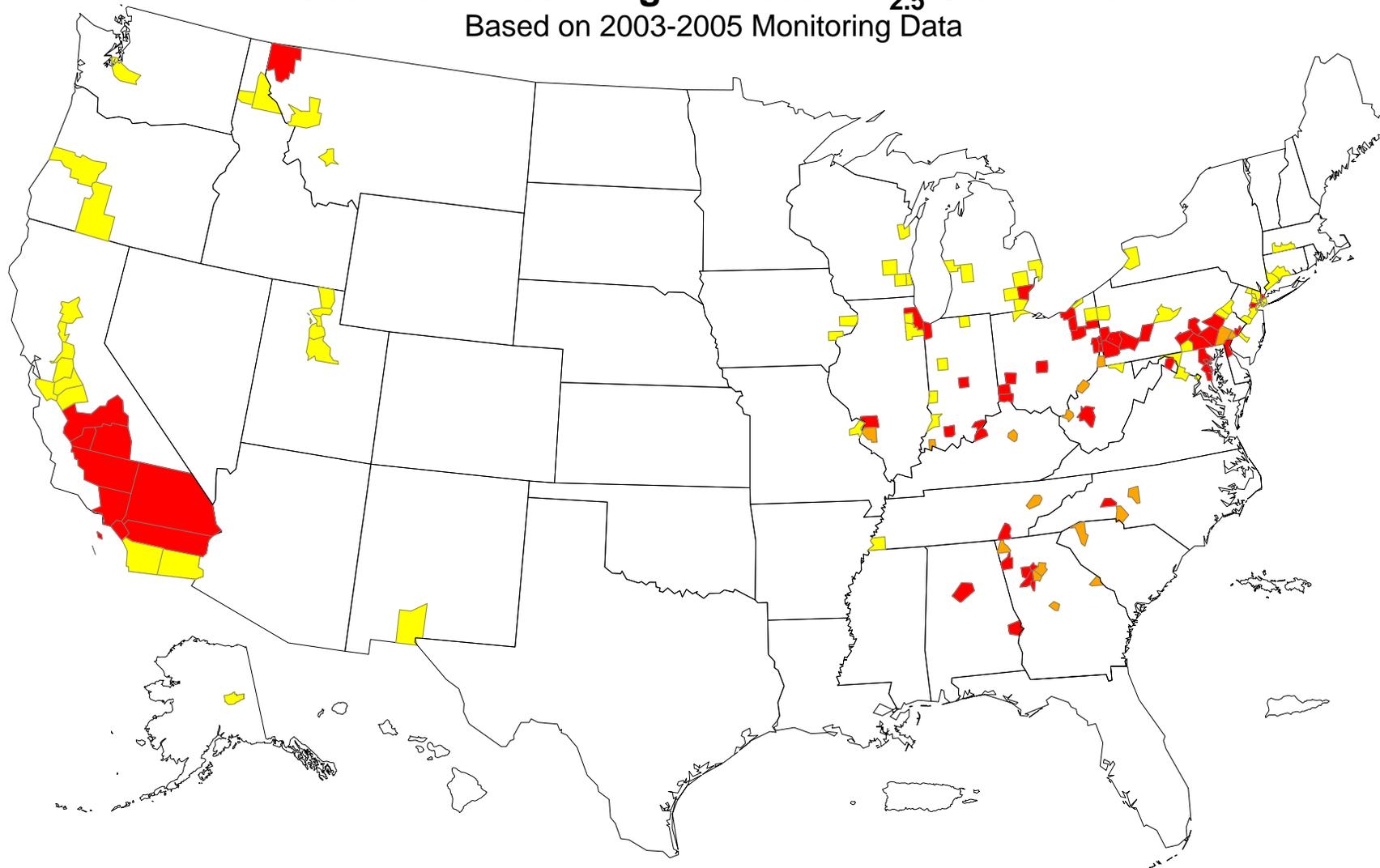
37

**Total PM<sub>2.5</sub> Nonattainment Areas 39**

\* 2002-2004 data were considered in the designation process but all nonattainment designations were based on 2001-2003 data

# Counties Exceeding Revised PM<sub>2.5</sub> Standards

Based on 2003-2005 Monitoring Data



## Legend

### County with monitor exceeding:

<span style="color: red;">■</span>	both annual (15 µg/m <sup>3</sup> ) <u>and</u> 24-hour (35 µg/m <sup>3</sup> ) PM <sub>2.5</sub> standards	56
<span style="color: yellow;">■</span>	ONLY the 24-hour PM <sub>2.5</sub> standard (35 µg/m <sup>3</sup> )	70
<span style="color: orange;">■</span>	ONLY the annual PM <sub>2.5</sub> standard (15 µg/m <sup>3</sup> )	17

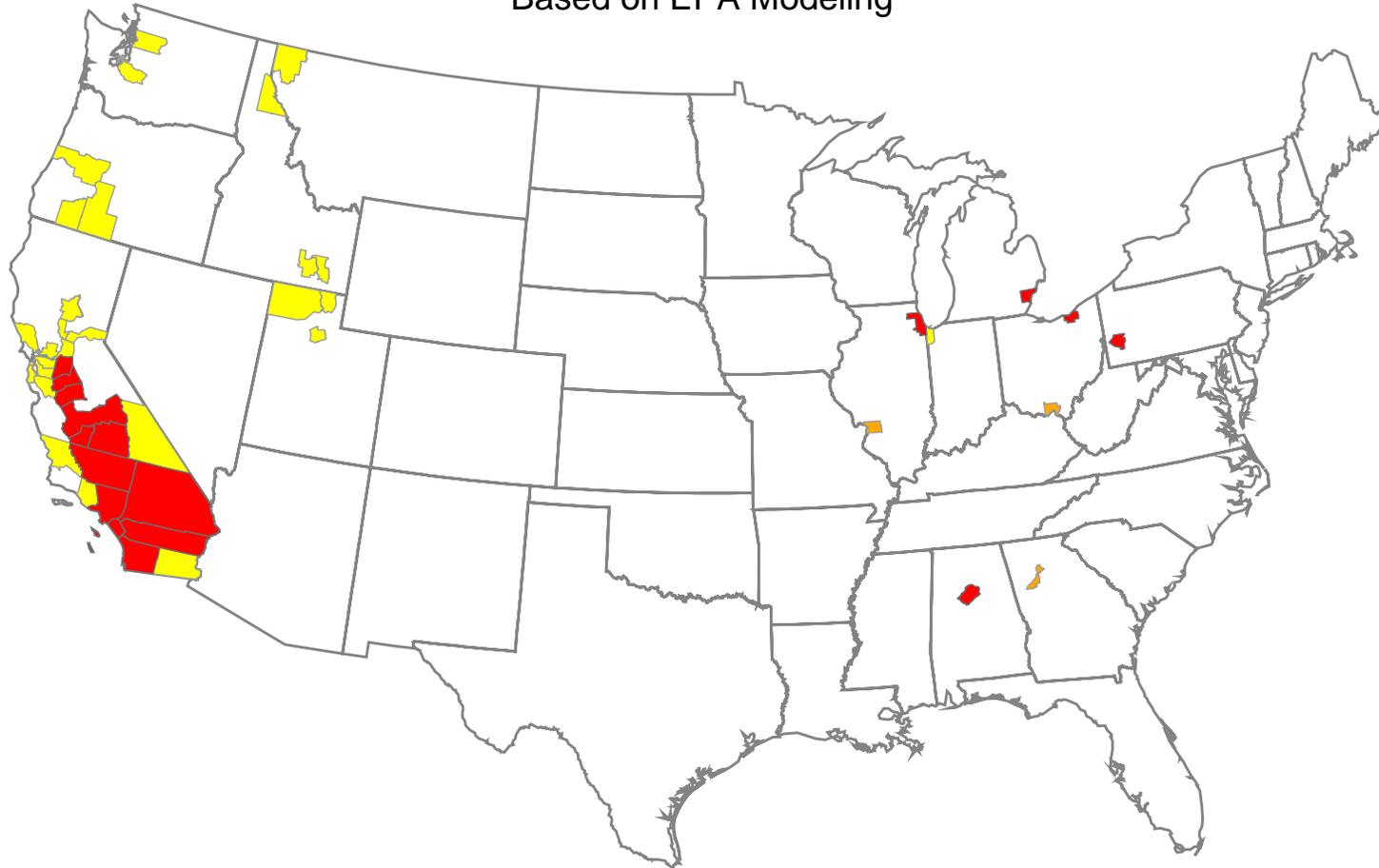
**Total Counties Exceeding 143**

### Number of Counties

- Data from AQS 7/10/2006
- Data completeness computed per CFR 7/10/2006
- EPA will **not** base designations for the new fine particle standards on these data.

# Counties Projected to Exceed the Revised PM<sub>2.5</sub> Standards in 2020

Based on EPA Modeling\*



## Legend

### County with monitor exceeding:

- both annual (15  $\mu\text{g}/\text{m}^3$ ) and 24-hour (35  $\mu\text{g}/\text{m}^3$ ) PM<sub>2.5</sub> standards
- ONLY the 24-hour PM<sub>2.5</sub> standard (35  $\mu\text{g}/\text{m}^3$ )
- ONLY the annual PM<sub>2.5</sub> standard (15  $\mu\text{g}/\text{m}^3$ )

### Number of Counties

17

28

3

**Total Counties Projected to Exceed**

**48**

\*Projections as of September 2006. EPA models assume implementation of CAIR/CAMR/CAVR, Title IV of the Clean Air Act, the NO<sub>x</sub> SIP Call, and some existing state programs. This approach does not forecast actions states will take to meet 1997 PM<sub>2.5</sub> standards.

## *PM<sub>10</sub> Standards*

- PM<sub>10</sub> 24-Hour Standards
  - retained the existing 24-hour PM<sub>10</sub> standard of 150 µg/m<sup>3</sup> (1 expected exceedance form), which was first set in 1987
  - Secondary 24-hour PM<sub>10</sub> standard also retained.
- PM<sub>10</sub> Annual Standards
  - Revoked the annual PM<sub>10</sub> standard.
  - Available evidence does not suggest a link between long-term exposure to PM<sub>10</sub> at current ambient levels and health problems

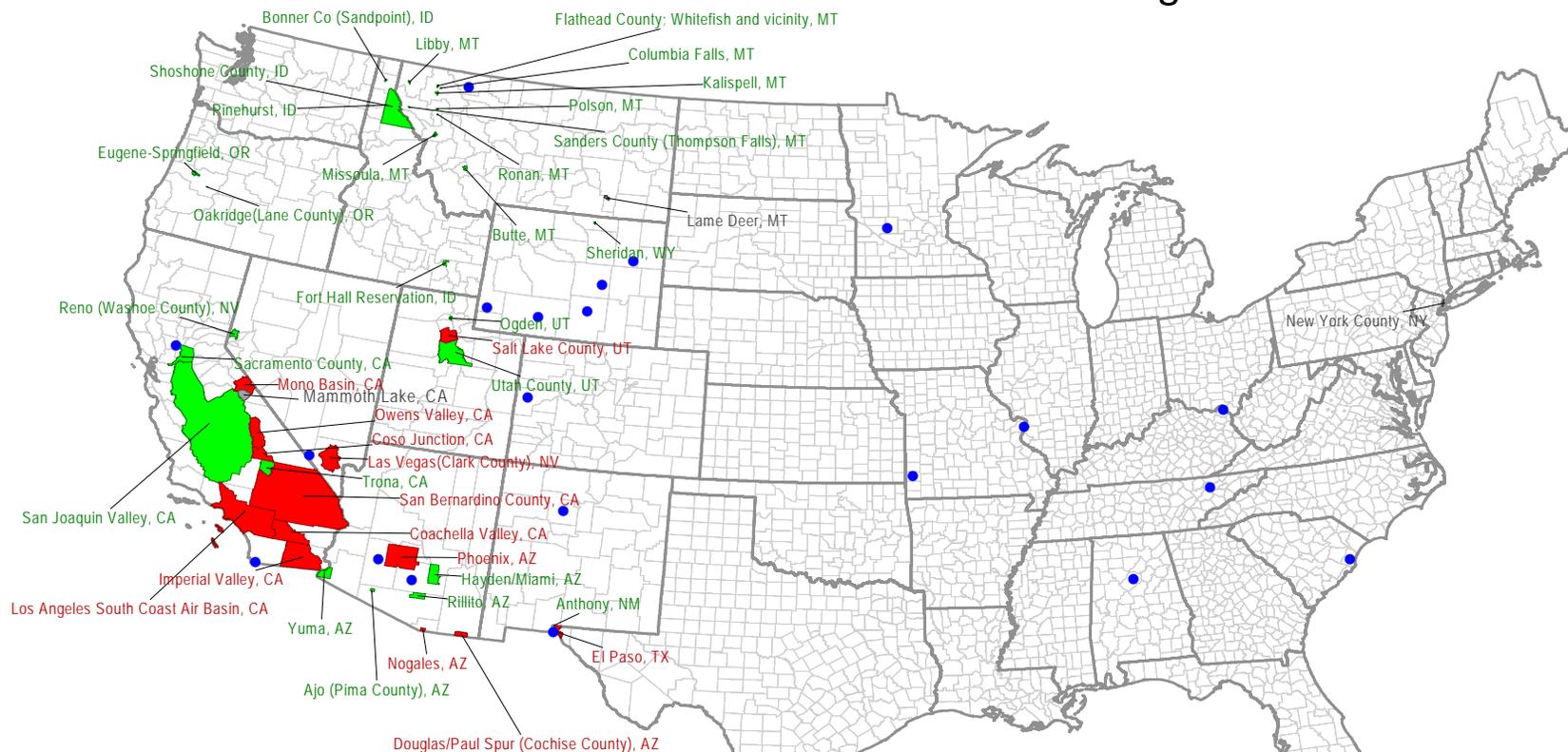
## *PM<sub>10</sub> Implementation*

- New nonattainment designations for PM<sub>10</sub> will not be required under the Clean Air Act.
- The final decision does not obligate states to revise SIPs or create new obligations to control particular sources.
- EPA has encouraged states to focus control programs on urban and industrial sources to the extent that those sources are contributing to air quality violations.
- EPA has encouraged states to give priority to maintaining monitors sited in urban and industrial areas.
- Retention of the 24-hour PM<sub>10</sub> standard does not impose new regulations on agricultural sources or fundamentally alter the existing implementation approaches that have proven successful over the last 20 years.

# Status of Current PM<sub>10</sub> Nonattainment Areas

Based on 2003 – 2005 Air Quality

## 2003-2005 PM10 Air Quality: Nonattainment Area Status and Other Violating Monitors



### Legend

#### Nonattainment areas:

- Currently violating the Pm10 standards
- Meeting the PM10 standards
- With incomplete data

#### Number of Areas

13  
29  
4

**Total Nonattainment Areas 46**

- monitors outside PM10 NA areas that did not meet the 24 hour PM10 standard in 2003-2005