$PM_{2.5}$ and SIPs

2007 Region 4 Modelers Workshop

March 27-28, 2007

Outline

- Revisions to Particulate Matter NAAQS
- 1997 Standards
  - Nonattainment Areas and Implementation Schedule
  - Attainment Areas Exceeding Standards
- 2006 Standards
  - Nonattainment Areas and Implementation Schedule
- Implementation and Designations Guidance

National Ambient Air Quality Standards (NAAQS) for PM

Summary of revisions:

1971 Standard set for total suspended particulate matter (TSP)

1987 Revised standard to focus on inhalable particles ≤ 10 μm (PM_{10})

1997 Revised standard to emphasize fine particles ≤ 2.5 μm ($PM_{2.5}$)

2006 Further revisions tightened daily $PM_{2.5}$ standard

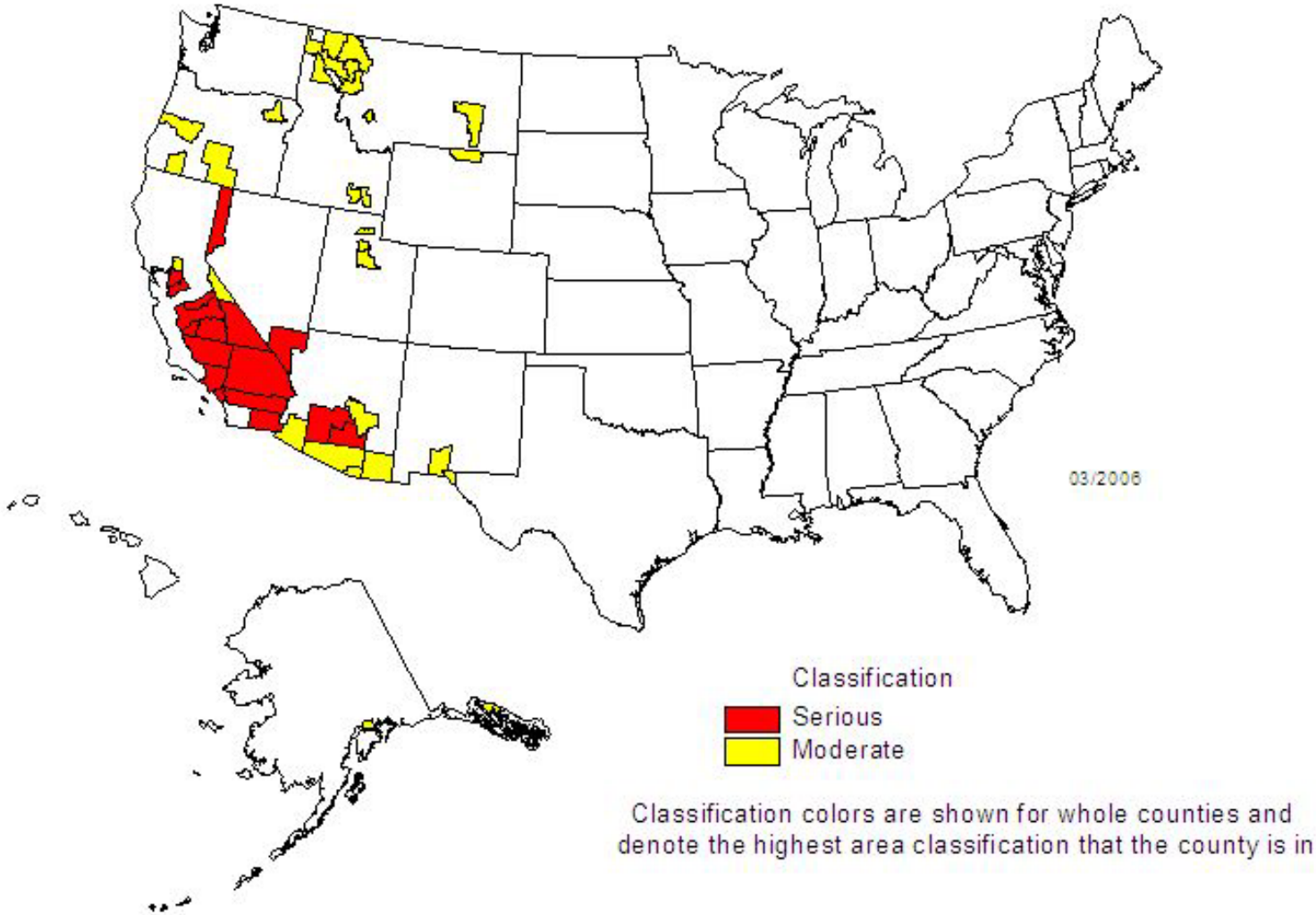
The 1997 Standards

	1997 standards:
$PM_{2.5}$	Annual: 15 µg/m^3 24-hr: 65 µg/m^3
PM_{10}	Annual: 50 µg/m^3 24-hr: 150 µg/m^3

→ **Designations became effective April 5, 2005**

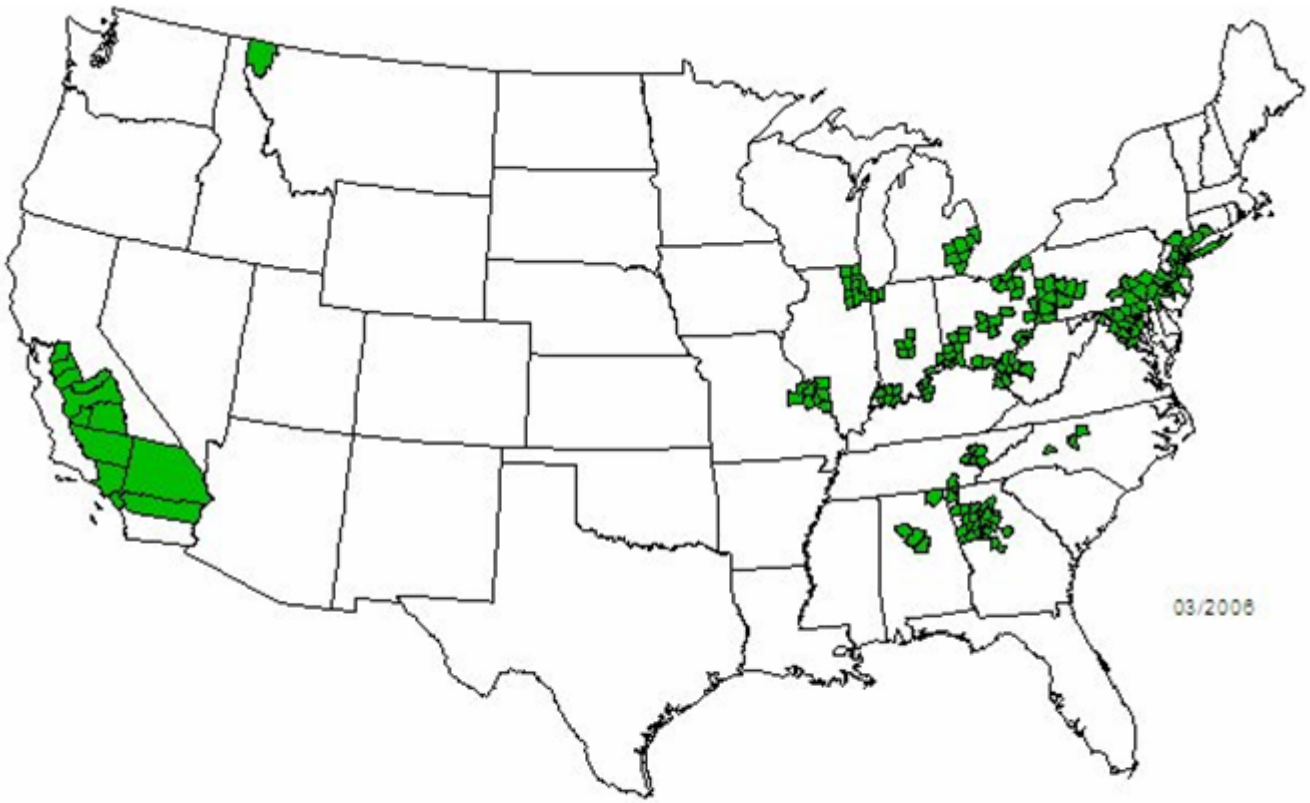
Counties Designated Nonattainment for PM_{10}

(March 2006)



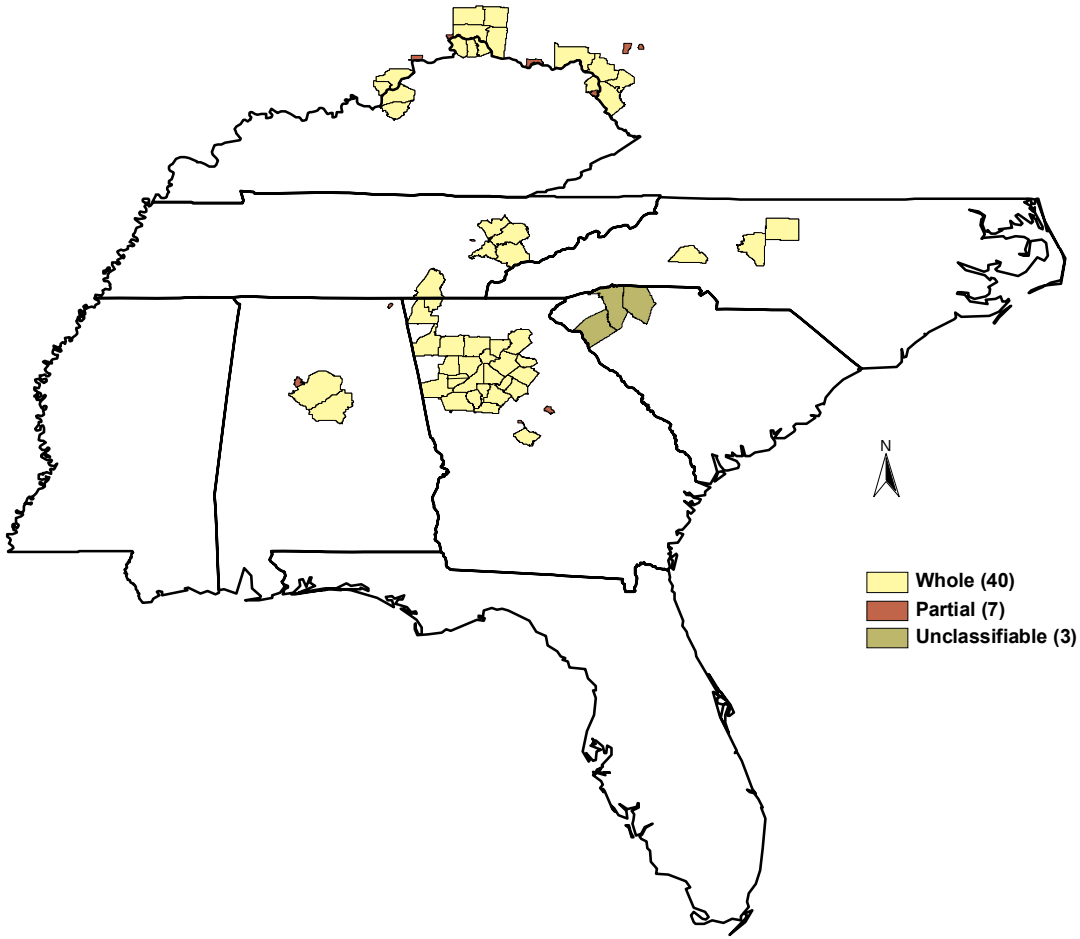
Counties Designated Nonattainment for $PM_{2.5}$

(March 2006)



Partial counties are shown as whole counties

Region 4 $PM_{2.5}$ Nonattainment and Unclassifiable Areas



$PM_{2.5}$ Nonattainment Areas in Region 4

Area	Population
Birmingham, AL	885,640
Chattanooga, TN-GA	481,646
Rome, GA	92,606
Macon, GA	177,499
Atlanta, GA	4,543,676
Cincinnati, KY-OH	334,058
Huntington-Ashland, KY-WV-OH	65,387
Louisville, KY-IN	761,880
Greensboro-Winston Salem, Highpoint, NC	582,265
Hickory-Morganton-Lenoir, NC	146,690
Knoxville, TN	663,750
Total	**8,735,097**

Implementation Schedule for the 1997 Standards

Date	Action
Dec. 17, 2004	EPA issued Final designations
April 5, 2005	Effective date of Final designations
Nov. 1, 2005	Proposed $PM_{2.5}$ Implementation Rule published
March 2007	**Final $PM_{2.5}$ Implementation Rule to be signed**
April 2008	$PM_{2.5}$ state implementation plans (SIPs) due
April 2010	Attainment date (using monitoring data from 2007-2009)
April 2015	Attainment date (with extension)

Attainment Areas Newly Violating the $PM_{2.5}$ Annual NAAQS

Area	Population
Augusta/Aiken, GA/SC	345,950
Columbus/Phenix City, GA/AL	234,597
Lexington, KY	268,080
Charlotte, NC	796,372
Greenville, SC	407,383
Total	**2,052,382**

→ ***Region 4 "Focus Areas"***

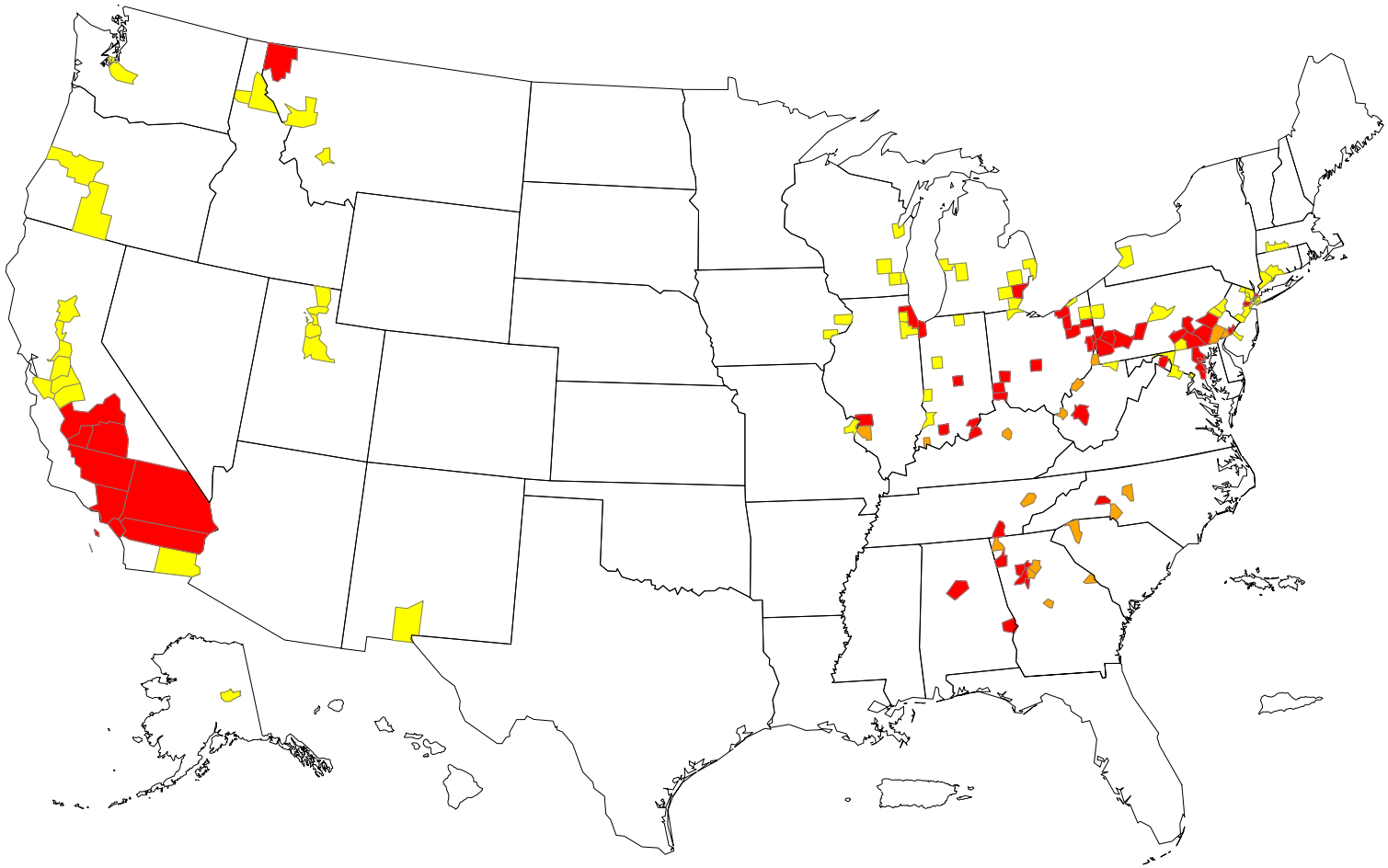
Options:

- Work with area to return to attainment
- Issue a SIP Call
- Designate area as nonattainment

2006 PM Standards

	1997 standards:	**2006 standards:**
$PM_{2.5}$	Annual: 15 µg/m^3 24-hr: 65 µg/m^3	Annual: 15 µg/m^3 24-hr: 35 µg/m^3
PM_{10}	Annual: 50 µg/m^3 24-hr: 150 µg/m^3	Annual: revoked 24-hr: 150 µg/m^3

Counties Exceeding New NAAQS Levels, Based on 2003-2005 Monitoring Data



Legend	Number of Counties
County with monitor exceeding:	
both annual and 24-hour $PM_{2.5}$ standards	55
ONLY the 24-hour $PM_{2.5}$ standard	69
ONLY the annual $PM_{2.5}$ standard	17
Total Counties Exceeding	141

- Data from AQS 7/10/2006
- Data completeness computed per CFR 7/10/2006

Areas in Region 4 Exceeding the New Daily Standard

- 12 counties (7 areas)
- Only Columbus/Phenix City is not already a designated nonattainment area
- All would require an attainment SIP for the new standard

Clean Air Act Requirements

- PM NAAQS were revised for the 24-hour $PM_{2.5}$ standard only
- Effective date of revised PM standards is Dec. 18, 2006
- New nonattainment designations only required for new/revised NAAQS
- Section 107(d)(1) requirements for new designations:
  - States must make recommendations not later than 1 year after promulgation of revised NAAQS (Dec. 18, 2007)
  - EPA must notify States of any modifications no later than 120 days prior to the final designations date
  - EPA is required to make final designations not later than 2 years after promulgation of the revised NAAQS (Dec. 18, 2008); date may be extended for up to 1 year (Dec. 18, 2009) if the Administrator has “insufficient information to promulgate the designations”

Implementation Schedule for 2006 $PM_{2.5}$ Standards

Date	Action
Dec. 2007	States recommendations due for attainment/ nonattainment
Dec. 2008*	EPA makes final designations
April 2009	Designations become effective
April 2012	Attainment SIPs due
April 2014	Attainment date
April 2019	Attainment date (with extension)

* Law allows for another year on case-by-case basis

Summary of SIP and Attainment Timelines

Milestone	**1997 $PM_{2.5}$ NAAQS**	**2006 $PM_{2.5}$ NAAQS**
Promulgation of Standard	July 1997	Dec. 2006
State Recommendations to EPA	Feb. 2004	Dec. 2007
Final Designations Due 2 yrs after Final NAAQS	Dec. 2004	Dec. 2008*
Effective Date of Designations	April 2005	April 2009
SIPs Due 3 yrs after Designation	April 2008	April 2012
Attainment Date 5 yrs after Designations Effective	April 2010	April 2014
Attainment Date with Extension	Up to April 2015	Up to April 2019

* Law allows for another year on case-by-case basis

Proposed Rule to Implement the Current Fine Particle Standard

- Describes the implementation framework and the requirements for state implementation plans

- Major issues adressed:
  - Attainment Demonstrations and Modeling – guidelines for timing and identification of modeling guidance available
  - Reasonably Available Control Measures (RACM) – adoption of control measures necessary to attain expeditiously as practicable and achieve reasonable further progress
  - Reasonably Available Control Technology (RACT) – guidelines for determining emission controls that are economically and technologically feasible
  - Direct $PM_{2.5}$ and Precursors – identification of pollutants to be controlled; policy for precursors (SO_2, NO_X, VOCs, NH_3)

Proposed Rule to Implement the Current Fine Particle Standard (cont.)

Second part to be signed by summer 2007:

New Source Review (NSR) Requirements

- clarification of how NSR requirements are to be implemented

24-hour $PM_{2.5}$ Designations Guidance

- OAQPS is reviewing and drafting changes to the guidance on $PM_{2.5}$ designations used in the most recent designation action
- The draft will be circulated to the Regions for their review and comment
- A call will be held with NACAA to discuss and get state input

24-hour $PM_{2.5}$ Designations Guidance (cont.)

Key issues are:

- Timing of final designations
- Monitoring data
  - How to address which 3 years of data will be used for State and Tribal recommendations and for EPA final designations
- Boundary recommendations for:
  - existing nonattainment areas now violating the 24-hour $PM_{2.5}$ standard
  - existing areas that attain the annual $PM_{2.5}$ standard prior to designations but violate the 24-hr $PM_{2.5}$ standard
  - new areas violating the 24-hour $PM_{2.5}$ standard

For more information…

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