






CIBO NAAQS Update

CIBO Environment Committee
Meeting

March 10, 2010

Traditional EPA Rule – NAAQS

Major Milestone	NO ₂ Primary	SO ₂ Primary	Ozone	PM	CAIR Replacement
Proposed rulemaking	<u>Jun 26, 2009</u>	<u>Nov 16, 2009</u>	Jan. 6, 2010	July 2010	April 2010
Final rulemaking	<u>Jan 22, 2010</u>	<u>Jun 2, 2010</u>	Aug 31, 2010	April 2011	April 2011
State SIP Proposals	January 2013	Jan 2014	December 2013	April 2014	
THREAT ASSESSMENT	LOW	Medium	High Potential Investment – Based on Non-attainment Status & State SIP Direction	High - Based on Non-attainment Status & State SIP Direction	Medium
INSIGHT INTO EPA ACTION	FINAL ACTION 100 ppb hourly standard, new monitoring	NEW Hourly standard 50-150 ppb; EPA preferred range 50 to 75	60-70 ppb 8-hour standard PLUS New Secondary standard at 7-15 ppm-hours; new monitoring	12-14 micrograms per cubic meter annual standard (currently 15)	Rule to address SO ₂ & NO _x transport impact on ozone and PM _{2.5} nonattainment. Stnds uncertain
INDUSTRY IMPACT POTENTIAL	1. \$3.6 million 2. NSR/PSD permitting challenges 3. Growth Restrictions 4. Near roadway monitoring impact unclear until 2016	1. Up to \$6.8 billion 2. Non-attainment SO ₂ NSR in PM/Ozone attainment areas 3. Growth Restrictions	1. Up to \$90 billion 2. RACT in n/a areas, perhaps outside 3. Growth Restrictions 4. Widespread permitting issues	1. Significant capital, totals TBD 2. New non-attainment NSR areas 3. Growth & permitting Restrictions	1. Unknown capital, likely significant 2. Possible NO _x , SO ₂ , PM controls on large boilers 3. Increased cost of electricity
ALERT STATUS					

NO₂ NAAQS

- New 1-hour standard at 100 ppb; maintain 53 ppb annual standard
- SIPS due 1/2013, attainment 1/2017
- Emissions 58% mobile, 22% utility; focus on emissions near roadways
- New monitoring, though scaled back from proposal
- How n/a areas will be designated still unclear; precedent exists for n/a areas configured according to roadway monitor locations
- Immediate concern: modeled impacts

SO₂ NAAQS Proposal

- Replace existing annual & 24-hour primary standards with new 1-hour standard at level between 50 and 100 ppb (consistent with CASAC recommendations); taking comments on standard at 150 ppb
- Separate secondary SO₂ standard due to be promulgated in 2012
- SO₂ is also a primary precursor to PM_{2.5}, especially in the east
- Fossil fuel combustion at EGUs (66%) and industrial boilers (29%) are primary sources of SO₂ emissions

SO₂ NAAQS Proposal

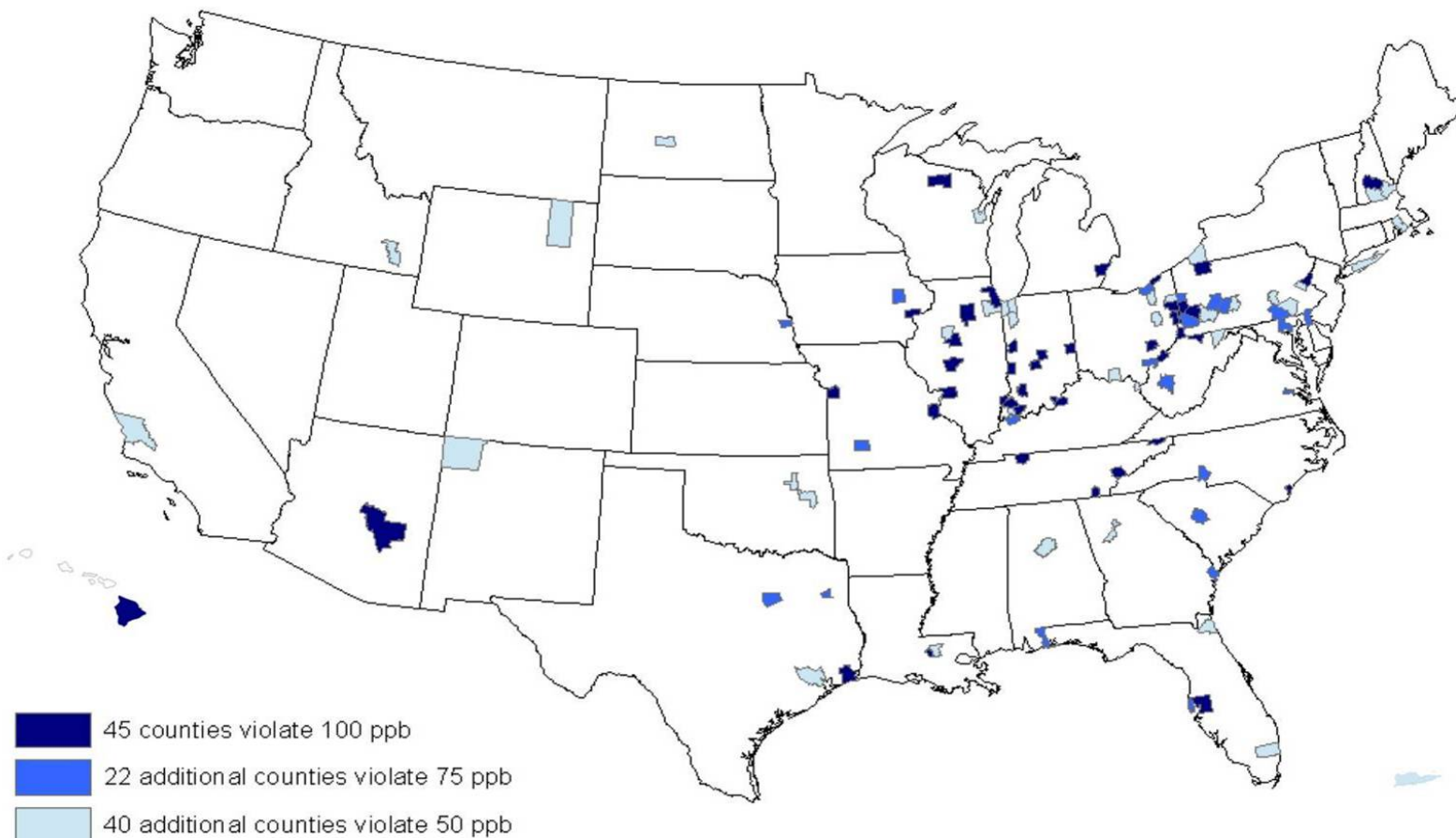
- Comment focus: standard not supported by record, reversible health impacts, WHO & CARB standards higher, minimal benefits
- Final rule June 2, 2010; EPA designations 6/2012, SIPS due 1/2014
- Attainment deadline 6/2017

SO₂ NAAQS Proposal

- EPA also proposes to update the current monitoring network, which is not designed to address source-oriented maximum short-term concentrations (2/3 of current 488 monitors not properly sited for new standard)
- 231 monitors to be sited based on a combination of population and emissions; 117 additional monitors to be located w/l states based on state's contributions to national emissions
- Issues: Modeled compliance, new n/a areas

SO₂ NAAQS

Counties with Monitors Currently Violating Proposed Range for 1-hour Sulfur Dioxide Standard, 50 – 100 parts per billion



Notes:

¹Based on the most recent air monitoring data (2006 – 2008).

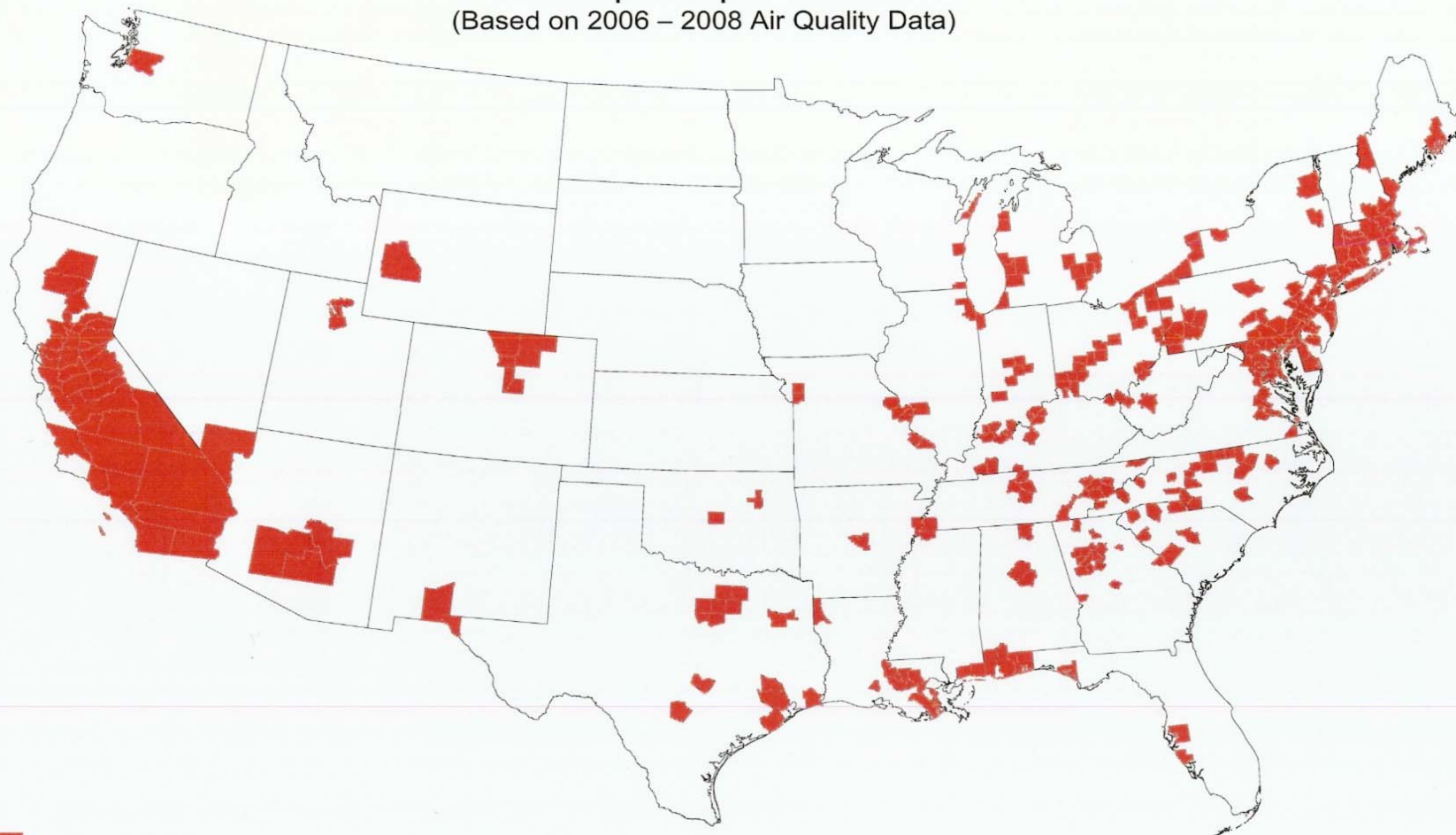
²EPA will not designate areas as nonattainment on these data but likely using 2009 – 2011 data.

³Data are shown for monitors that met the following criteria: 75% of the day has valid hourly values, 75% of the days in a quarter are valid, and all 4 quarters for each of the three years are valid.

Ozone NAAQS

- Despite no Court-ordered deadlines, EPA on an accelerated schedule to complete a new, tightened standard between 60 and 70 ppb, with a cumulative seasonal secondary standard
- Final rule expected August 31, 2010, SIPs due December 2013 (an accelerated schedule); attainment dates will range from 2014 to 2031
- The ozone monitoring network will be expanded

Counties With Monitors Violating the March 2008 Ground-Level Ozone Standards
0.075 parts per million
(Based on 2006 – 2008 Air Quality Data)



322 of 675¹ monitored counties violate the standard

Notes:

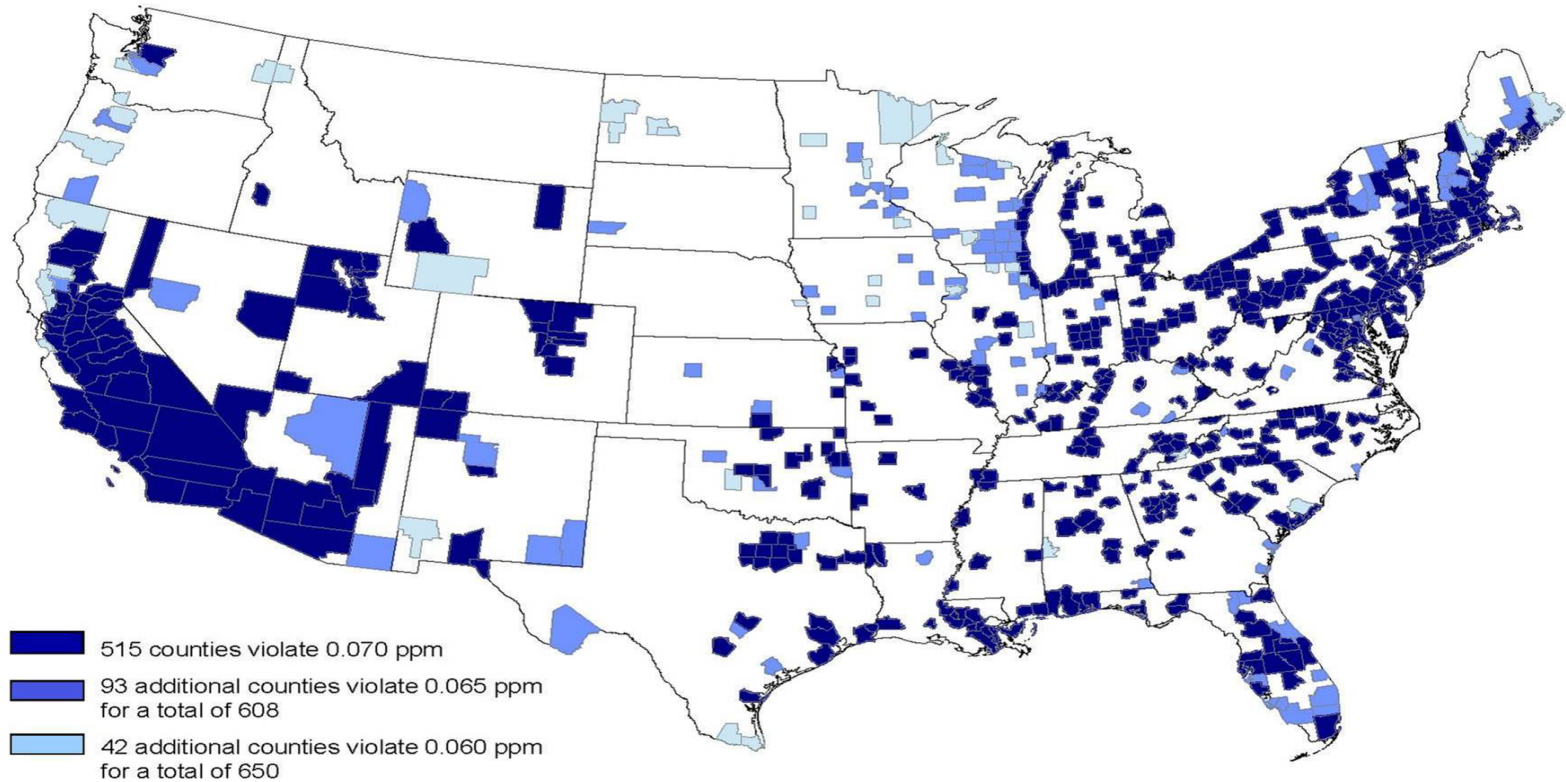
1. Counties with at least one monitor with complete data for 2006 – 2008
2. To determine compliance with the March 2008 ozone standards, the 3-year average is truncated to three decimal places.

Ozone NAAQS

Counties With Monitors Violating Proposed Primary 8-hour Ground-level Ozone Standards 0.060 - 0.070 parts per million

(Based on 2006 – 2008 Air Quality Data)

EPA will not designate areas as nonattainment on these data, but likely on 2008 – 2010 data which are expected to show improved air quality.



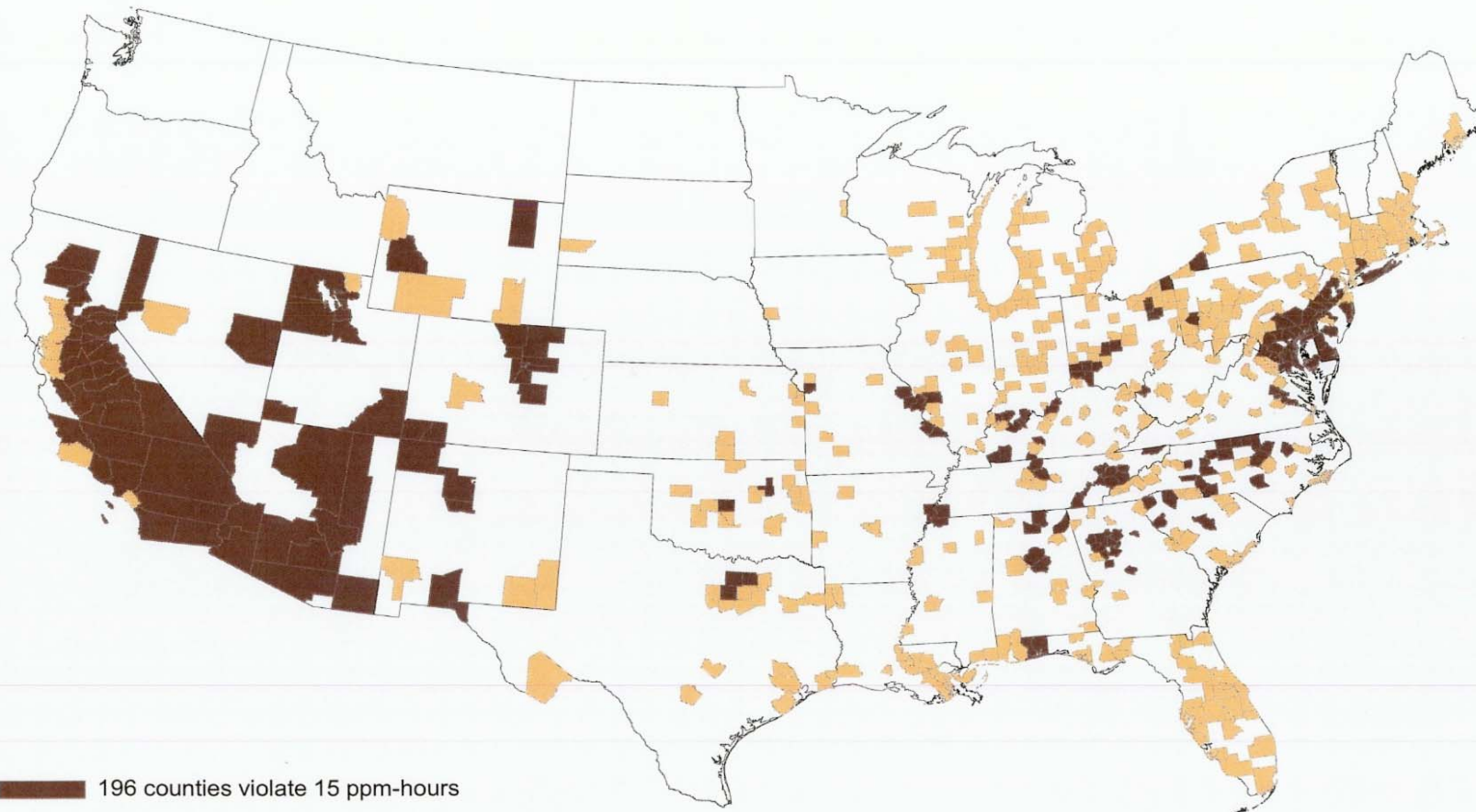
Notes:

1. No monitored counties outside the continental U.S. violate.
2. EPA is proposing to determine compliance with a revised primary ozone standard by rounding the 3-year average to three decimal places.

Counties With Monitors Violating Proposed Secondary Seasonal Ground-Level Ozone Standards 7 – 15 parts per million - hours

(Based on 2006 – 2008 Air Quality Data)

EPA will not designate areas as nonattainment on these data, but likely on 2008 – 2010 data which are expected to show improved air quality.

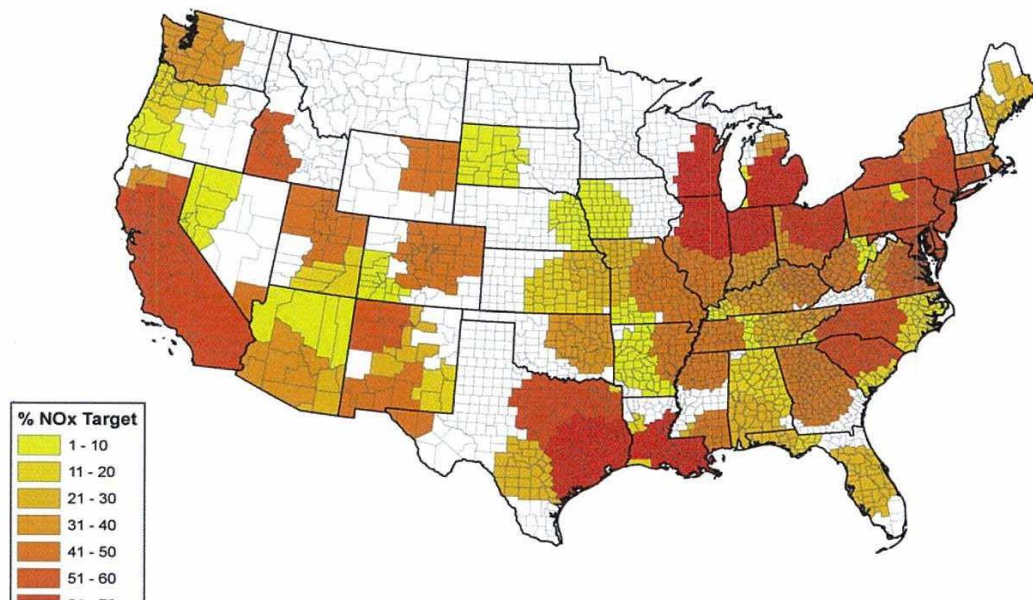


- 196 counties violate 15 ppm-hours
- 383 additional counties violate 7 ppm-hours for a total of 579

No monitored counties outside the continental U.S. violate.

Figure S2.2: Map of Extrapolated Cost Counties for the 0.060 ppm Alternate Standard and Estimated Percentage NOx Controls Needed to Meet that Standard in 2020

Extrapolated Cost Counties for 060 Standard



Ozone NAAQS Issues

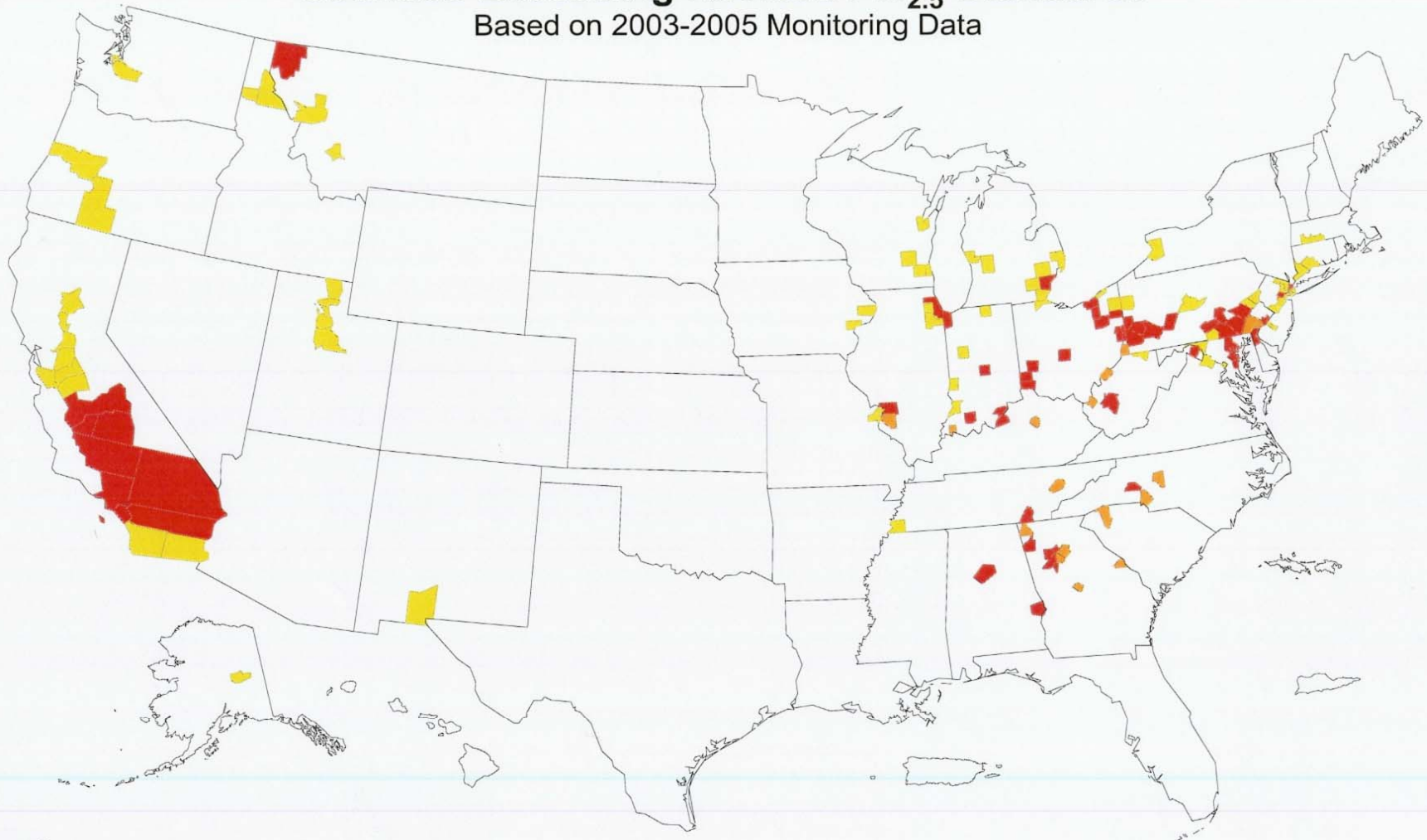
- Vastly expanded number of n/a areas
- Technology requirements for sources in or near n/a areas (RACT etc), with likely focus on large stationary sources
- Major permitting issues for new modified sources, including LAER and offsets
- Modeling issues
- Implementation guidance expected out this summer

PM_{2.5} NAAQS

- Annual standard (currently 15 µg/m³) under review; EPA considering revised standard between 12 and 14 µg/m³
- Proposal and final rule timing still somewhat uncertain; latest is proposal this July, final spring/summer 2011
- Attainment deadlines projected to be 2018 to 2023




Counties Exceeding Revised PM_{2.5} Standards

Based on 2003-2005 Monitoring Data



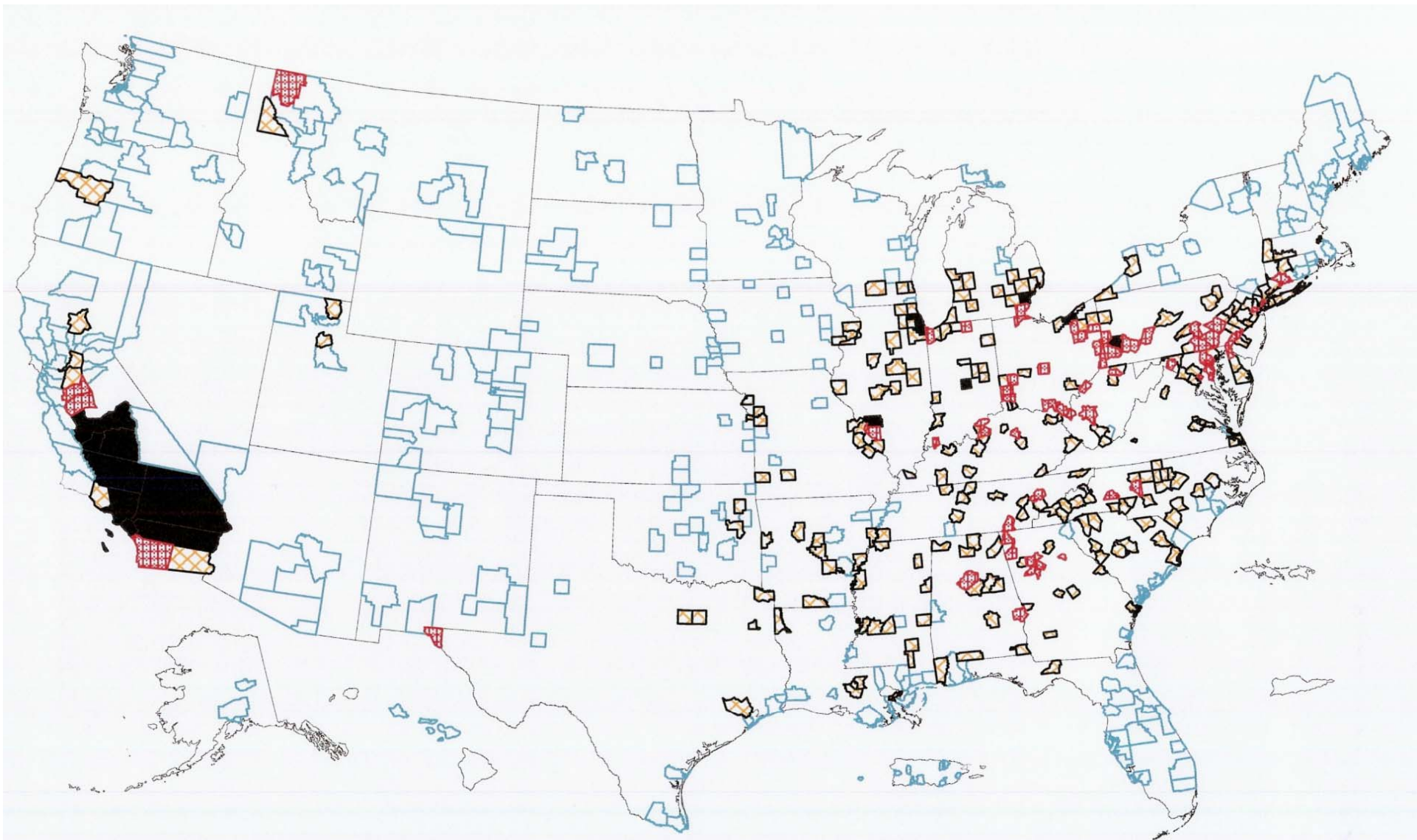
Legend

County with monitor exceeding:

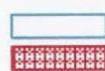
	both annual (15 µg/m ³) <u>and</u> 24-hour (35 µg/m ³) PM _{2.5} standards	56
	ONLY the 24-hour PM _{2.5} standard (35 µg/m ³)	70
	ONLY the annual PM _{2.5} standard (15 µg/m ³)	17
Total Counties Exceeding		143

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.



PM_{2.5} Concentration (µg/m³)
562 counties



$x \leq 12$



$15 < x \leq 18$



$12 < x \leq 15$



$x > 18$

Figure 2-6. County-level maximum annual mean PM_{2.5} concentrations, 2001-2003.

Source: Schmidt et al. (2005)

CAIR Update

- Current schedule:
 - Proposal 1st quarter 2010
 - Final 1st quarter 2011
- Key issues:
 - Inclusion of industrial boilers
 - Will standards be set to address upcoming ozone and PM_{2.5} standards?
 - Will trading be allowed?

Impacts of Current Control Measures

(CAIR/CAMR/BART/Mobile rules)

Projected national emissions of SO₂, NO_x, and PM_{2.5} by sector for 2010, 2015, and 2020

