Misc. NAAQS, Regional Haze and Permitting

Bill Harnett, USEPA

NACAA Membership Meeting

October 21, 2008

Overview

- Implementation of 8-hr Ozone NAAQS
  - 1997 .08 standard
  - 2008 .075 standard
- 24-hr PM2.5 designations
- Ozone Designations
- Flagging for Exceptional Events (PM2.5 and Ozone)
- Fire Policy
- Update on Permitting Regulations

Appendix

- GHGs and Permitting information from ANPR
- Litigation on 2005 PM2.5 Designations
- Litigation on 1997 PM2.5 NAAQS Implementation Rule
- Status of SIPs for Ozone
- Status of SIPs for PM2.5
- Status of SIPs for Regional Haze

1997 (0.08 ppm) 8-hr NAAQS

- FRs responding to South Coast vacatur (Phase 1 Rule)
  - Proposal to address subpart 1 areas and minimally correct phase 1 implementation rule: in OMB review; NPR on November 2008.
  - Proposal to address expiration of anti-backsliding for 1-hr NAAQS obligations for NSR and section 185 penalty fees; NPR in March 2009.

1997 (0.08 ppm) 8-hr NAAQS (cont'd)

- Phase 2 rule litigation
  - Oral argument scheduled for Nov. 20, 2008.
  - Provision for taking credit for RFP reductions outside nonattainment areas that the court vacated and remanded to EPA:
    - Proposed rule published July 21, 2008.
    - Final rule scheduled to be published by December 2008.

Implementation Rule Development for 2008 (.075) 8-hr NAAQS

- Timing:
  - signature NPR Spring 2009
  - signature NFR Winter 2010
- Outline and Issues are being discussed with NACAA and other Stakeholders

Key Issues for Implementation Rule for 2008 Ozone NAAQS

- Transition from 1997 0.08 ppm 8-hour standard
- Coverage under subpart 1 and/or 2
- Any revisions to the subpart 2 classification table
- Also, other topics (including RACT, RFP, attainment demonstration)

24-Hr PM2.5 Designations Timeline – October-December 2008

Milestone	Approximate Date
★ Close of public comment period	October 2, 2008
Requested date for State & Tribal comments	October 20, 2008
Administrator Signature	on/before Dec. 18, 2008
Final Designations FR notice published	January 2009
States can submit complete, quality assured, certified 2008 data	By February 20, 2009
Supplemental Amendments FR Notice	April 2009 (no later than effective date)
Effective Date of Final Designations	April 2009 (90 days after FR publication)

Ozone Designations

- Draft designations guidance with OMB for informal review -- hope to be signed by end of October.
- Consistent with designations guidance for 1997 ozone standard.
- CBSA or CSA presumptive nonattainment boundary.
- Area-specific analyses may support larger or smaller nonattainment boundaries.
- Recommends 9 factors to consider, similar to PM2.5 designations guidance. (Condensed from 11 factors used in last ozone designations).
- New ozone implementation rule to address how classification provisions of CAA will apply for designations under 2008 revised ozone standard. Proposal next spring.
- Direct final rule published Oct 6th to amend Exceptional Events Rule to provide revised exceptional event data flagging and documentation schedule for ozone data that may be used for ozone designations.

Factors For Area-Specific Analyses

- Air quality data
- Emissions data (location of sources & contribution to ozone concentrations)
- Population density and degree of urbanization
- Traffic and commuting patterns'
- Growth rates and patterns
- Meteorology (weather/transport)
- Geography/topography
- Jurisdictional boundaries
- Level of control of emissions

Ozone Designations Schedule

Milestone	Date
Revised ozone NAAQS promulgated	March 12, 2008
State/Tribe designations recommendations due	No later than March 12, 2009
EPA notifies States/Tribes of intended modifications to recommendations	No later than November 12, 2009 (120 days before designations)
EPA publishes notice of recommendations and EPA's intended modifications, initiates 30-day public comment period	Mid-November 2009
End of 30-day public comment period	Mid-December 2009
States/Tribes submit additional information in response to EPA's intended modifications	No later than January 12, 2010
Final ozone designations	No later than March 12, 2010*

*Schedule assumes EPA has sufficient information to issue designations in 2 years.

Schedule for Exceptional Event Flagging and Documentation Submission for 2008 PM2.5 & Ozone NAAQS Designations:

NAAQS Pollutant/ Standard/(Level)/ Promulgation Date	Air Quality Data Collected for Calendar Year	Event Flagging & Initial Description Deadline	Detailed Documentation Submission Deadline
$PM_{2.5}$/24-Hr Standard (35 µg/m3) Promulgated October 17, 2006	2004-2006	October 1, 2007[a]	April 15, 2008[a]
Ozone/8-Hr Standard (0.075 ppb)Promulgated March 12, 2008	2005-2007	December 31, 2008[b]	March 12, 2009[b]
	2008	March 12, 2009[b]	March 12, 2009[b]
	2009	January 8, 2010[b]	January 8, 2010[b]

[a]These dates are unchanged from those published in the original rulemaking, and are shown in this table for informational purposes.
[b]Indicates change from general schedule in 40 CFR 50.14.
Note: EPA notes that the table of revised deadlines only applies to data EPA will use to establish the final initial designations for new or revised NAAQS. The general schedule applies for all other purposes, most notably, for data used by EPA for redesignations to attainment.

Update on "Fire Policy"

- **The Agency is developing a new "Fire Policy" that encompasses all uses of prescribed fire for resource management purposes.**
- **This policy will supersede the Interim Air Quality Policy on Wildland and Prescribed Fire and will also be updated to be consistent with the Exceptional Events Rule.**
- **The Agency's goal for this "Fire Policy" is to acknowledge the need for fire as a resource management tool, and where fire has been determined to be an acceptable land management tool, to provide guidance on developing smoke management programs that minimize air quality impacts (e.g., NAAQS and Regional Haze).**
- **The new policy expands usage of prescribed fire to both silviculture and agricultural purposes on both public and private land and for various types of land usage (e.g., forest land, crop land, range land, pasture land, and wet land).**
- **Currently, the Agency is working to refine the draft document to ensure that all applications of fire as a resource management tool are addresses and to ensure that definitions of key terms are consistent (e.g., prescribed fire, agricultural burning vs. crop burning).**
- **OMB has classified this policy as a "Significant Guidance Document" which requires the Agency to submit the draft policy for public review and comment.**
- **Our goal is to publish a Federal Register notice announcing the availability of the draft Fire Policy in Fall 2008.**

Impacts of Lead Pollution on Public Health

- Exposure to lead pollution is associated with a broad range of health effects, including damage to the central nervous system, cardiovascular system, kidneys, immune system and red blood cells.
- Children are more likely to be exposed to lead because they exhibit greater hand-to-mouth activity.
- Children are also the most vulnerable to damaging effects of lead because their bodies are developing rapidly.
- Effects in children include:
  - Effects on developing nervous system, including the brain
    - IQ loss
    - Poor academic achievement, permanent learning disabilities, increased risk of delinquent behavior
    - Effects generally persist into early adulthood; can affect lifetime education and achievement
  - Weakened immune system
- Adults can also experience effects of lead exposure such as:
  - Increased blood pressure
  - Cardiovascular disease
  - Decreased kidney function

Regulating Lead Pollution

- The Clean Air Act requires EPA to set two types of national ambient air quality standards (NAAQS) for 'criteria' air pollutants.
  - ***Primary standards*** to protect public health with an adequate margin of safety
  - ***Secondary standards*** to protect public welfare and the environment (visibility, wildlife, crops, vegetation, national monuments and buildings)
- EPA has set NAAQS for six common air pollutants:
  - Lead
  - Carbon monoxide
  - Nitrogen dioxide
  - Particulate matter
  - Ground-level ozone (smog)
  - Sulfur dioxide
- The law requires EPA to review the scientific information and the standards for each pollutant every five years**,** and to obtain advice from the Clean Air Scientific Advisory Committee (CASAC) on each review.
- Different considerations apply to setting NAAQS than to achieving them
  - Setting NAAQS: based on scientific evidence of health and environmental effects
  - Achieving NAAQS: account for cost, technical feasibility, time needed to attain
- EPA is revising the lead standards which have not been changed since 1978, when both the primary and secondary standards of lead were set at 1.5 $\mu g/m^3$ of lead in TSP. The new standards are 0.15 $\mu g/m^3$.

Revisions to the Lead Standards: Averaging Time and Form

- EPA revised the averaging time and form used to determine whether an area meets the standard.
- EPA will use a maximum (not-to-be-exceeded) rolling three-month average evaluated over a three-year period.
- Any three-month average exceeding 0.15 μg/m^3 within a three-year period will be considered a violation of the NAAQS
- More scientifically appropriate than the previous averaging time of calendar quarter
  - Rolling average gives equal weight to all three-month periods
- More health protective than the previous averaging time of calendar quarter
  - Rolling average yields 12 three-month averages each year to be compared to the NAAQS (as opposed to four averages in each year for block calendar quarters).

Revisions to the Lead Standards: Averaging Time and Form

- Air agencies will determine whether an area is in compliance with the lead standards by following these steps:
  - Average three consecutive monthly averages together to get a three-month average (e.g. January-March, February-April, March-May, etc.)
  - For each three-year period, this will yield 36 three-month averages
  - Compare each three-month average to the NAAQS
    - To be in attainment, all 36 three-month averages must be below the 0.15 $\mu g/m^3$
    - If one of these averages is above 0.15 $\mu g/m^3$, the site will violate the standard
- EPA will still require a sampling frequency of 1 in 6 days.
  - Monitoring agencies must collect one 24-hour lead sample every six days

Revisions to the Lead Standards: Indicator

- EPA retains the current indicator based on measuring lead in the air using total suspended particles (TSP) monitors, reflecting evidence that lead particles of all sizes pose health risks.
- EPA will allow the use of lead-PM10 monitoring instead of lead-TSP monitoring in only certain limited circumstances
  - Lead-PM10 low-volume monitoring would be allowed where:
    - Lead is not expected to occur as large particles; and
    - A monitoring agency can demonstrate that lead concentrations are not expected to have three-month averages greater than or equal to 0.1 $\mu g/m^3$
  - If a lead-PM10 monitor measures three-month levels greater than or equal to 0.1 $\mu g/m^3$, then the monitoring agency would have to install and operate a lead-TSP monitor within six months
  - Lead- PM10 measurements greater than the NAAQS violate the standard.

Revisions to the Lead Monitoring Requirements

- EPA is expanding and redesigning the monitoring network for lead to ensure the public health protections provided by the 2008 lead standards.
- EPA is requiring:
  - Monitoring in areas near sources with lead emissions greater than or equal to 1 ton per year (tpy). According to EPA's 2002 emissions estimates, 135 sources meet this criterion.
    - This source-oriented monitoring requirement may be waived by the EPA Regional Administrator if the monitoring agency can demonstrate that the lead source will not contribute to maximum lead concentrations greater than 0.075 ug/m3 (50% of the NAAQS)
  - The operation of a lead monitor in every urban area with a population of 500,000 or more. The latest population estimates indicate there are 101 such areas.
- EPA estimates that 236 new or relocated monitoring sites will be necessary to satisfy these monitoring requirements
  - Approximately half of the new monitors will be required to be operational by January 1, 2010
  - The rest of the new monitors will be required to be operational by January 1, 2011

Sources Contributing to Lead Pollution

- Sources of lead emissions include:
  - Gasoline for piston-engine aircraft (not used in commercial passenger aircraft)
  - Metal industries
    - Lead smelting
    - Iron and steel foundries
    - Copper smelting
    - Metal mining
  - Manufacturing industries
    - Glass manufacturing
    - Cement manufacturing
  - Waste incinerators
  - Industrial/commercial/utility boilers
- Based on current information, more than 600 tons per year of lead are emitted due to use of aviation gasoline.
  - EPA received and is currently considering a petition to address lead in aviation gasoline.
  - For more information, see www.epa.gov/otaq/aviation.htm

Source Sectors of Lead Emissions in the U.S.

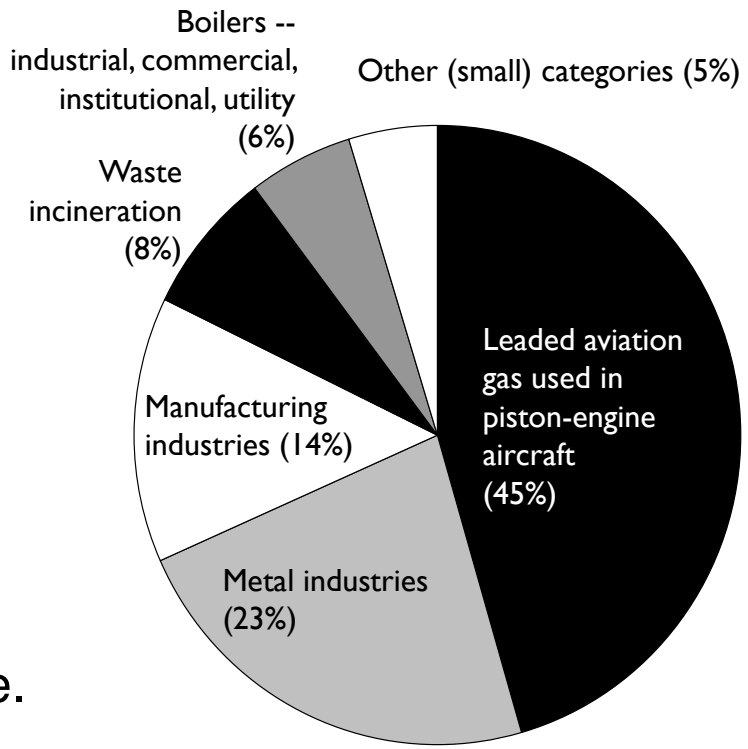


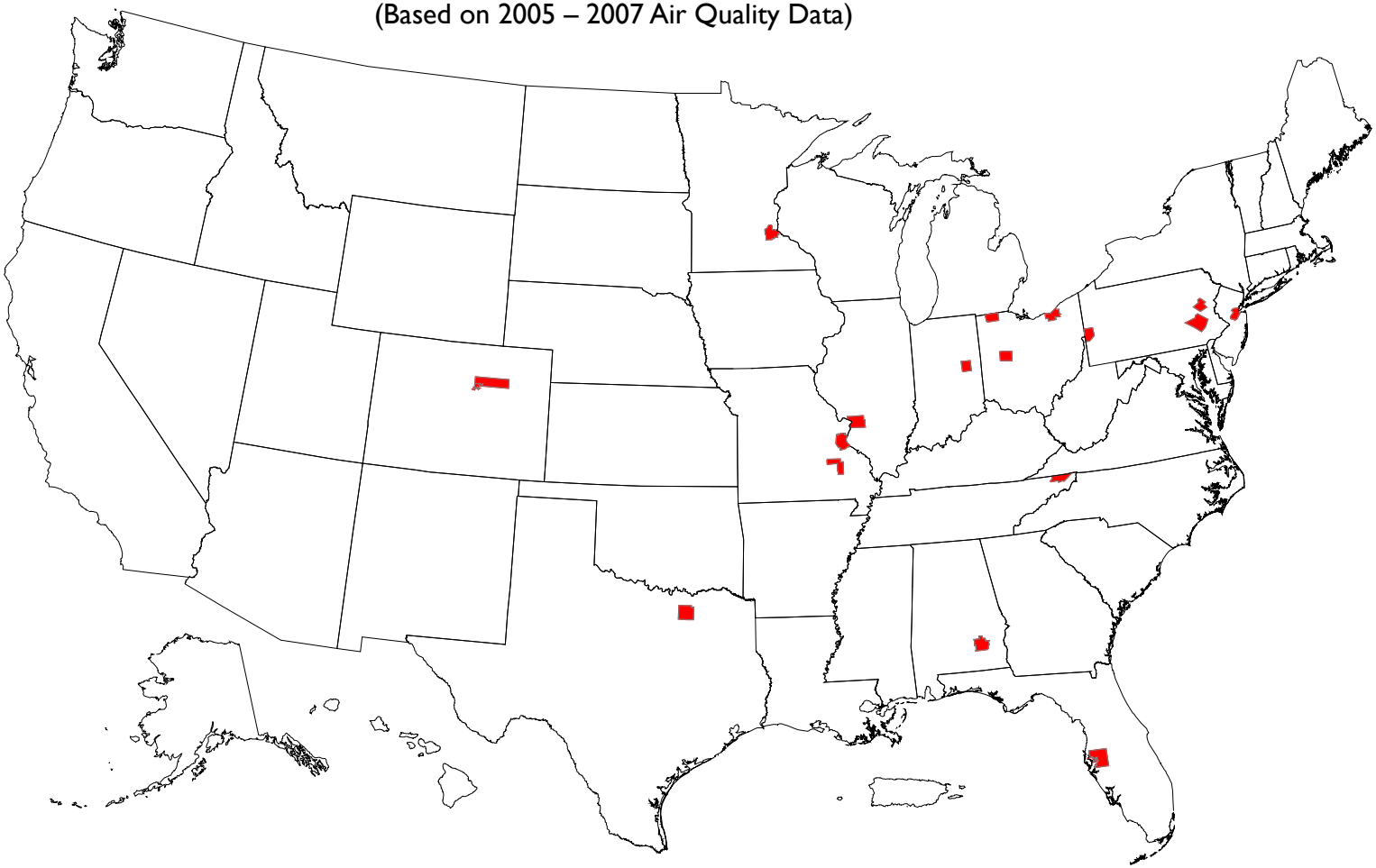
Chart based on EPA's 2002 National Emission Inventory (NEI) with modifications documented in Tom Pace's 05/01/08 memorandum and Marion Hoyer's 05/12/08 and 05/14/08 memoranda to the docket.

Timeline For Implementing Revised Lead NAAQS

Milestone	Date
Signature—Final Rule	Oct. 15, 2008
State Designation Recommendations to EPA	No later than October 2009 (based on existing network data)
Monitoring Network	At least half of required sites operational by Jan. 1, 2010 (additional required sites operational by Jan. 1, 2011)
Final Designations	No later than effective date Jan. 1, 2012* *Based on one-year deadline extension due to insufficient information; some areas are expected to be designated earlier based on existing data.
Transitional Strategy (Antibacksliding)	Revoke 1978 Pb NAAQS in pre-2009 attainment areas no later than October 2012
Attainment Demonstration SIPs Due	No later than June 2013 (18 month maximum)
Attainment Date	No later than January 2017 (5 year maximum)

Counties with Monitors Violating the 2008 Lead Standard of 0.15 micrograms per cubic meter (µg/m^3)

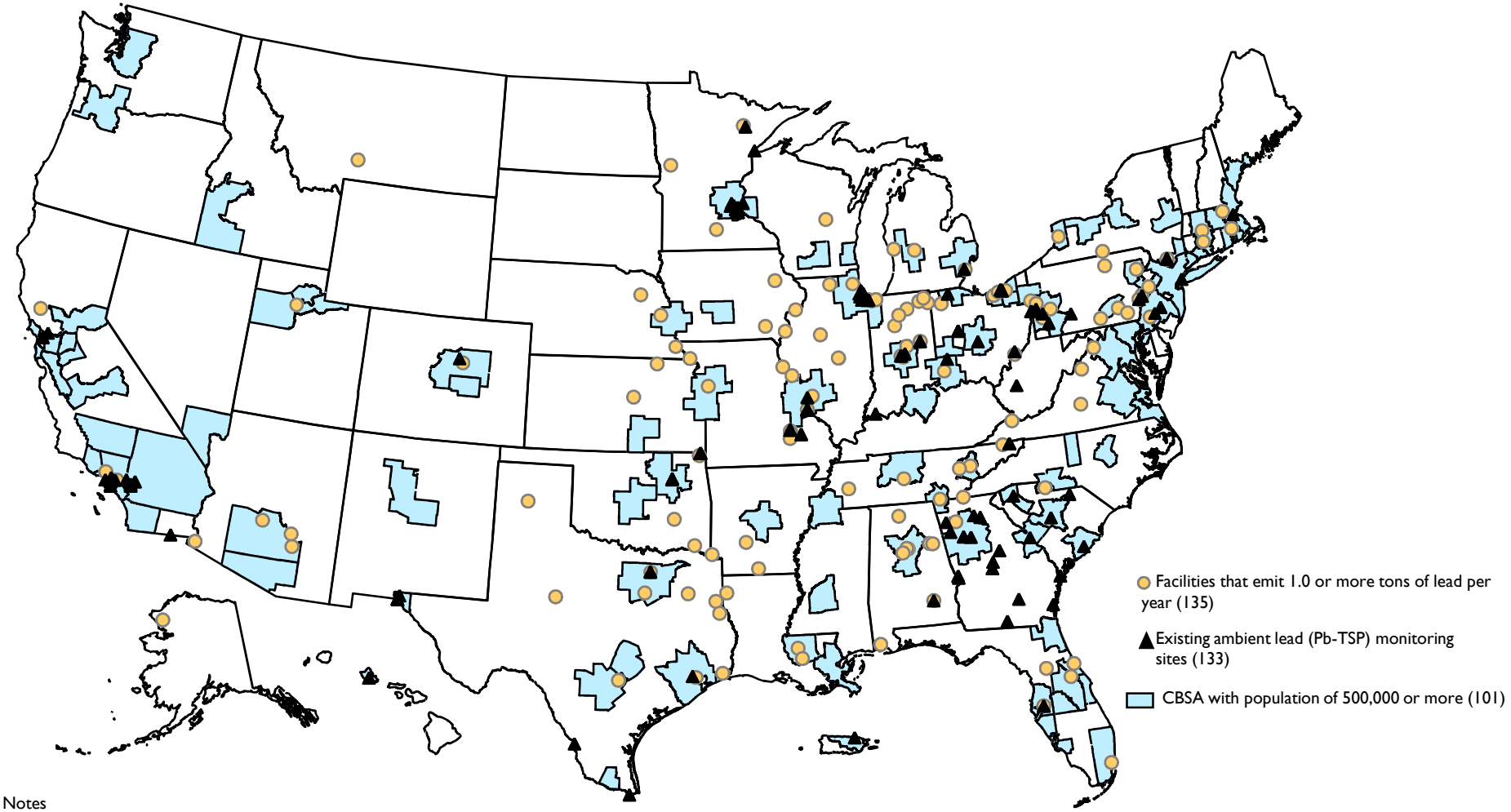
(Based on 2005 – 2007 Air Quality Data)



Notes

1. 18 of 111 monitored counties violate the 2008 lead standard of 0.15 micrograms per cubic meter (µg/m^3) measured as total suspended particulate matter (TSP).
2. These estimates are based on the most recent air quality data available (2005– 2007). EPA will not designate areas based on these data, but likely on data from 2007-2009 or 2008-2010.
3. The existing monitoring network for lead is not sufficient to determine whether many areas of the country would meet the revised standards of 0.15 µg/m3. EPA is re-designing the national lead monitoring network to allow assessment of compliance with the revised standards.
4. Monitored air quality data is available from the Air Quality System at http://www.epa.gov/ttn/airs/airsaqs/

Strengthening the Nation's Lead Monitoring Network



Notes

1. Ambient lead monitoring sites measure lead in total suspended particulate (Pb-TSP). The 133 monitoring sites shown are those operating in 2008.
2. The current monitoring network for lead is not sufficient to determine whether many areas of the country would meet the 2008 lead standards. EPA is re-designing the nation's lead monitoring network to allow assessment of compliance with the revised standard. EPA is requiring Pb-TSP monitors in areas near lead sources with emissions greater than or equal to 1.0 ton per year, and a monitor in every urban area with population of 500,000 or greater.
3. The emissions estimates used to develop this map are based on EPA's 2002 National Emission Inventory (NEI) with modifications documented in Tom Pace's 05/01/08 memorandum and Marion Hoyer's 05/12/08 and 05/14/08 memoranda to the docket.

Permitting Regulations

- Fugitive Emissions (final)
- NSR Emissions test for EGU's (final)
- PSD Increment Modeling procedures (final)
- Debottlenecking, Aggregation and Project Netting (final)
- Flexible Permits rule (final)
- Federal NAA NSR and minor NSR program for tribal lands (final)
- PM2.5 Implementation rule
  - Increments, SIL's, SMC's (final)

Appendix

PSD/GHG Implications

- PSD program applies to pollutants regulated under any CAA authority with the exception section 112 or section 211(o)
- PSD requires preconstruction review and permitting for new major emitting facilities and modifications (i.e., significant increases) at existing major emitting facilities
- Major source thresholds for PSD program--
  - 100 tpy for categories listed in the CAA
  - 250 tpy for other categories
- Significance levels up to 100 tpy for current pollutants.

PSD ANPR Discussion

- Applying these thresholds to GHGs would increase the number of PSD permits by *at least* an order of magnitude -- from 200-300 per year to thousands of PSD permits each year
- For GHG, would potentially cover many small sources (e.g., large residential/commercial bldgs.) and many small modifications at traditional major sources.
- Substantial expansion of PSD raises serious concerns (BACT, delay, etc.) and questions (e.g., whether any benefits could be achieved more efficiently through approaches other than case-by-case review)

PSD – ANPR Options

- ANPR takes comment on options to restrict the program to larger sources and/or to streamline compliance for GHG sources added to the program, such as:
  - Set higher major source thresholds for GHGs
  - Set higher significance levels for GHGs
  - Phase in the program slowly, starting with large sources
  - Reduce the number of additional small sources that need PSD permits through limitations on, or interpretations of, sources' "potential to emit"
  - Streamline the permitting of such sources though a range of approaches (presumptive BACT, general permits)
- Legal theories presented for comment
  - Administrative Necessity & Absurd Results

Title V Permits/GHG

- Title V operating permits also affected by GHG
  - Title V consolidates air pollution control requirements into one permit; requires monitoring, reporting, certification, etc.
  - Required for new and existing sources above 100 tpy (and other sources as well)
  - If the 100-ton major source threshold were applied to GHGs, this would substantially increase the number of sources required to obtain Title V permits
  - Could be more than 500,000 permits required
    - many smaller sources would be required to obtain a permit for the first time
    - Initial workload would likely be overwhelming

Title V ANPR Options

- As with PSD, ANPR takes comment on a range of ways to avoid a large increase in the number of sources required to obtain Title V permits
  - Major source size
  - PTE limits
  - Similar legal theories to those for PSD
- Also takes comment on ways to streamline compliance for sources that are covered.
  - General permits, phase in, etc.
  - Would the Title V permit fees structure need to be modified if GHGs were regulated?

Litigation on 2005 PM2.5 Designations

- Briefs received on February 5
  - States (NY, WV, IN)
  - Counties (Catawba, Guilford, NC; Greenville, Anderson, Spartanburg, SC; Catoosa, GA)
  - Industry (power companies, Midwest Ozone Group, etc)
  - Oakland County, MI
- EPA brief was due on June 11
- Sierra Club brief was due on June 11
- Reply briefs from litigants on August 11
- Oral argument date has not been set

Challenges to 2007 PM2.5 Implementation Rule

- Petitions for reconsideration (2 parties) and litigation (6 parties) are still pending.
  - EPA has not responded to petitions yet. Litigation is held in abeyance.
- Petitions for reconsideration - key issues
  - Earthjustice (on behalf of ALA, NRDC, Sierra Club and Medical Advocates for Healthy Air)
    - Oppose CAIR=RACT/RACM presumption for certain EGUs
    - Failure to require control of condensable PM
    - Weakening criteria for analyzing economic feasibility for RACT
    - RFP: allowing reductions outside nonattainment area
  - National Cattlemen's Beef Association
    - Oppose definition of direct PM2.5 as including crustal PM

Litigation on 2007 PM2.5 Implementation Rule

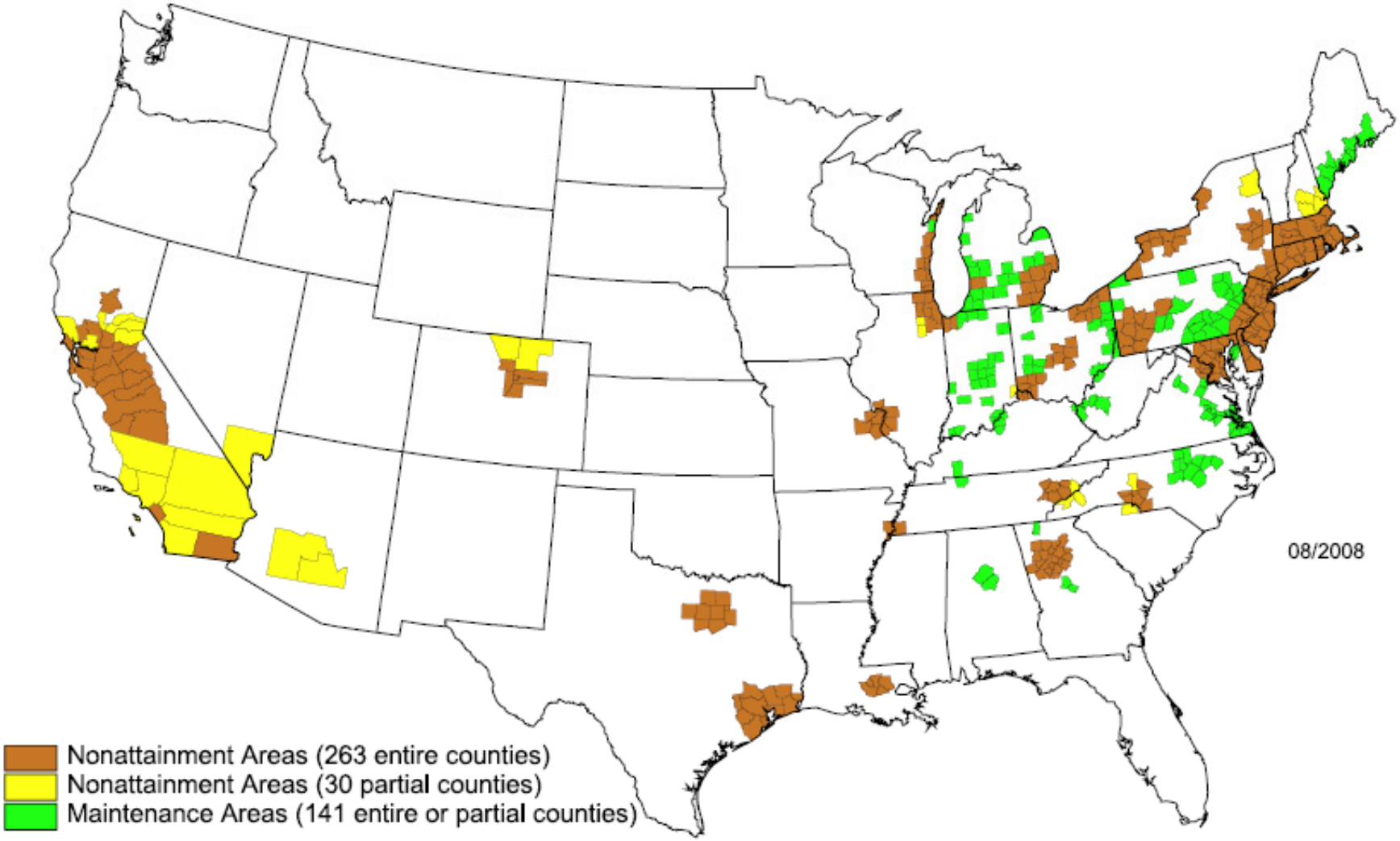
Parties

- Earth justice
- National Cattlemen's Beef Association
- State of New York
- State of New Jersey
- National Petrochemical Refiners Association / American Petroleum Institute
- National Environmental Development Association's Clean Air Project (NEDA-CAP)

Statements of Issues

- CAIR=RACT for EGUs
- Precursor presumptions
- Subpart 4 (PM10) v. subpart 1
- RFP reductions outside NA
- RACT economic feasibility criteria
- Condensable PM transition period & requirements
- Inclusion of crustal PM in direct PM2.5 definition
- Suspension of requirements under clean data policy

Nonattainment and Maintenance Areas in the U. S.
8-hour Ozone Standard

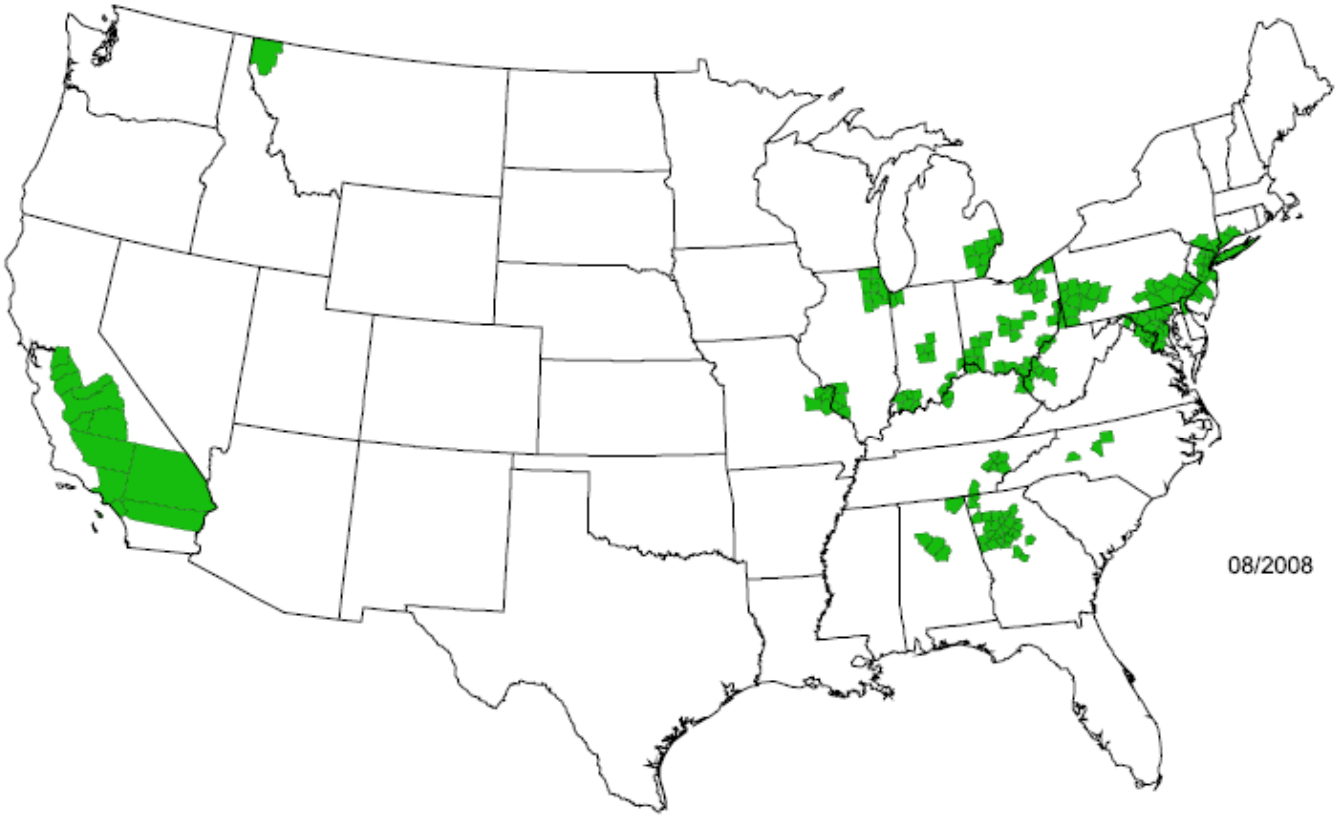


Partial counties, those with part of the county designated nonattainment and part attainment, are shown as full counties on the map.

SIPs already submitted or on the way: PM and Ozone

- There are 26 CAIR States or States impacted by CAIR that have submitted or will be submitting 8-hr ozone and/or PM 2.5 SIPs
- There are 26 8-hr ozone attainment demonstration SIPs due for nonattainment areas.
  - 4 ozone marginal CAIR areas bumped up to moderate -- SIPs are due by Jan 1 09.
  - 22 ozone SIPs submitted
- All California Areas have either bumped up or submitted SIPs
- Status of Phoenix and Denver?

Counties Designated Nonattainment for PM-2.5



Partial counties are shown as whole counties

Status of PM2.5 SIP Submittals

- For 39 nonattainment areas, 57 plans were due by April 5, 2008 to meet the 1997 PM2.5 standards
  - About 23 plans have been submitted to date
- EPA management is still considering the timing for issuance of findings for failure to submit
- Requirement for State submittal of control measures and attainment demos remains unchanged
- EPA continues discussions regarding regulatory options for responding to CAIR vacatur
- Regional Offices are working with their States to support the development and submittal of complete and approvable SIPs.

Regional Haze SIP Status – All States

14 SIPs are final; 5 deemed complete

- Alabama
- Albuquerque*
- Arkansas
- Iowa (deemed complete)
- Kentucky
- Louisiana
- Mississippi
- Delaware
- Missouri (deemed complete)
- North Carolina (deemed complete)
- South Carolina (deemed complete)
- Tennessee (deemed complete)
- Utah *
- West Virginia

* 309 SIPs