

AQM Subcommittee Meeting Agenda

January 24-25, 2006

EPA Region 6 Office

1445 Ross Avenue

Dallas, Texas

EPA Region 6 is located at 1445 Ross Avenue at corner of Ross Avenue and Field Street in downtown Dallas. All meeting participants must go to the reception area on the 7th floor upon arrival to obtain a visitor's pass and then proceed to the conference center on the 12th floor.

<u>Tuesday, January 24, 2006</u>		<u>Room</u>	<u>Time</u>
Introductions	Greg Green and Patrick Cummins	Oklahoma	8:00-8:30
PM Health Update	Lynn Terry	Oklahoma	8:30-9:30
PM NAAQS Update	Lydia Wegman	Oklahoma	9:30-10:00
Break			10:00-10:15
Team 1 Breakouts			10:15-11:15
Issue Group 1		Louisiana	
Issue Group 2		Texas	
Issue Groups 3 & 4		Oklahoma	
Team 1 Discussion		Oklahoma	
Issue 1: Problem Definition			11:15-11:45
Issue 2: Air Quality Planning Process			11:45-12:15
Lunch			12:15-1:15
Team 2 Lunch Meeting		Texas	
Team 1 Discussions Continued		Oklahoma	
Issue 3: AQM coordinating function			1:15-1:45
Issue 4: Improve Communications/Partnerships			1:45-2:15
Break			2:15-2:30
Team 2 Discussion		Oklahoma	2:30-5:00
Tools – Group Updates			2:30-2:45
Financial Tools			2:45-4:00
Emission Trading			4:00-5:00
<u>Wednesday, January 25, 2006</u>			
Teams 1 and 2 Prepare for Issue Discussions			8:00-9:00
Team 1		Oklahoma	
Team 2		Texas	
Team 1 Highlight Issues to Subcommittee		Oklahoma	9:00-10:00
Team 2 Highlight Issues to Subcommittee		Oklahoma	10:00-11:00
Discussion of Issues/Next Steps		Oklahoma	11:00-12:00
Team 1 Issue Groups will meet informally after conclusion of the full meeting.			12:00-3:00
Issue Group 1		6 th FCR	
Issue Group 2		Texas	
Issue Group 3		Oklahoma	
Issue Group 4		7 th FCR	

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Notebook Table of Contents

PM Health Update

PM NAAQS Update

Team 1 Issue Papers

- Issue 1: Problem Definition
- Issue 2: Air Quality Planning Process
- Issue 3: AQM coordinating function

Team 2 Discussion

- Generic Tool Two-Pager
- Outline for white paper on Incentive Grant programs
- Financial Tools and Trading
- AQM Tool Assignments

Addendums

- EPA White Paper Preliminary Analysis of Proposed PM 2.5 NAAQS Alternatives
- Signed SIP Protocol

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Human Health Impacts of Exposure to Particulate Matter Air Pollution

January 24, 2006

Lynn Terry

Deputy Executive Officer



Air Resources Board

Outline of Presentation

- **Overview of Health Effects**
- **Update on Recent Studies**
- **Diesel PM Health Risk**

Vast Body of Evidence Relating Health Effects to PM Exposure

- **Hundreds of studies published on health effects of exposure to PM10 and PM2.5**
- **Evidence of mortality and morbidity linked to increases in exposures to PM10 and PM2.5 in over 200 cities**
- **Effects associated with both short- and long-term exposures at current ambient concentrations**

Key PM Health Effects

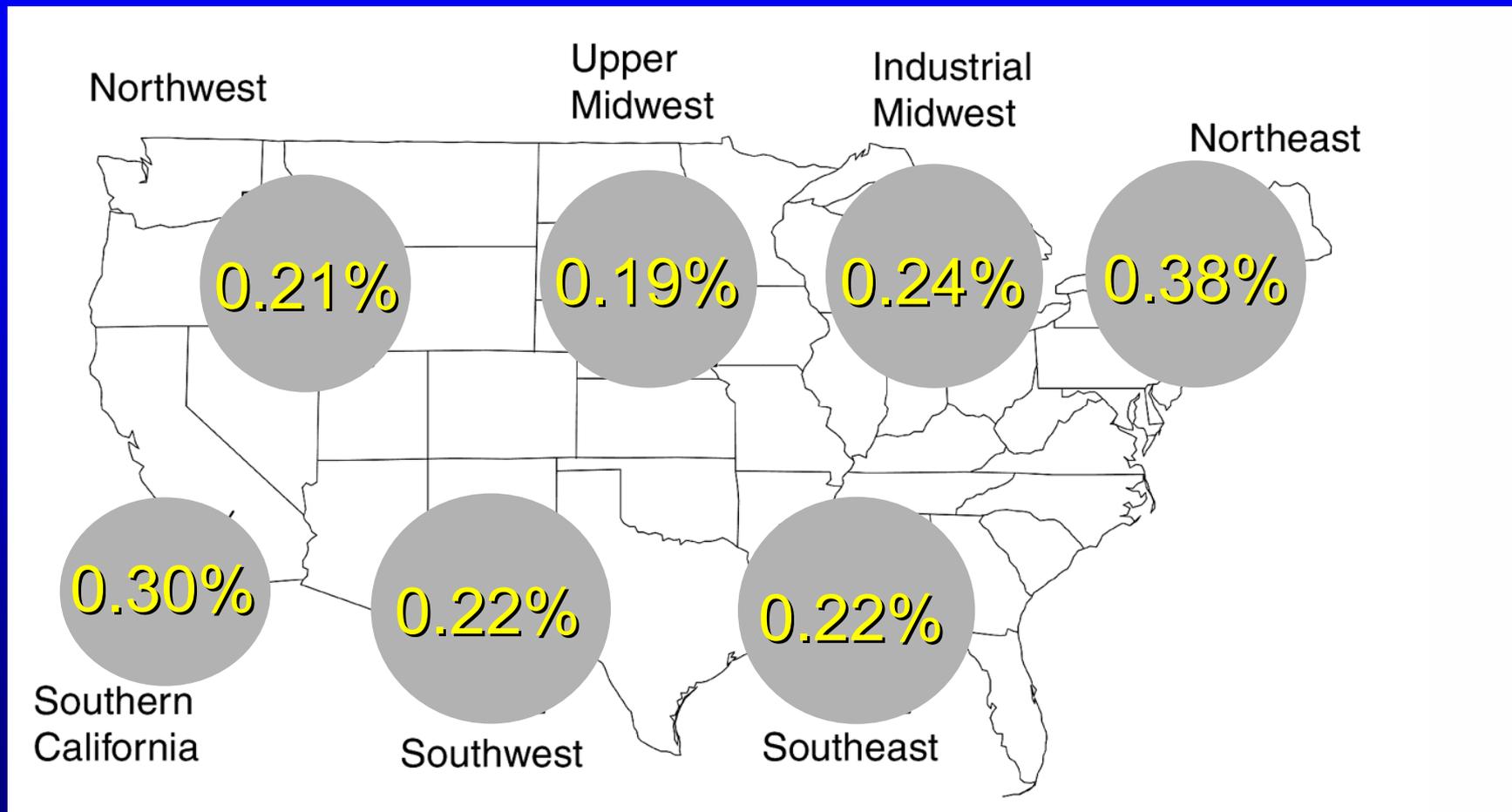
- **Premature mortality**
- **Respiratory symptoms and cardiovascular effects**
- **Cancer risk**
- **Emerging evidence of developmental effects**

PM Mortality – Short Term Exposures

- **Historical evidence at high PM levels**
- **New multi-city studies have found association between increased daily mortality at much lower concentrations**
- **Increased risk has been quantified for total, respiratory, and cardiovascular mortality**

Death Risk and Short-term PM

Percent Increase in death per 10 $\mu\text{g}/\text{m}^3$ PM_{10}
(90 cities, results for day after PM_{10} event)



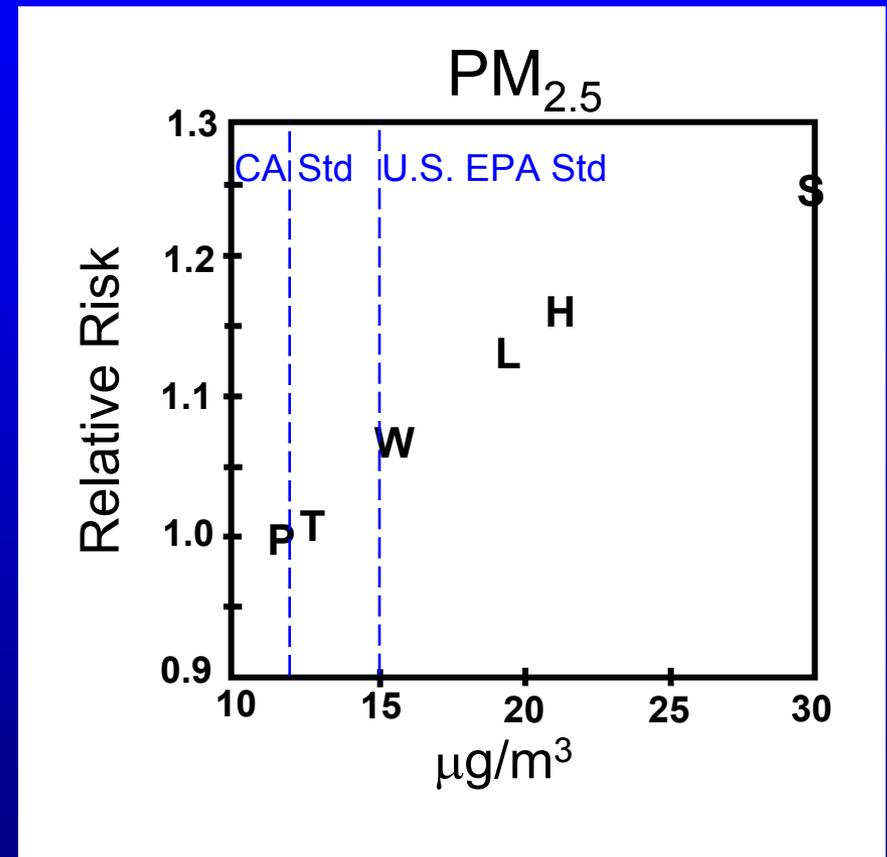
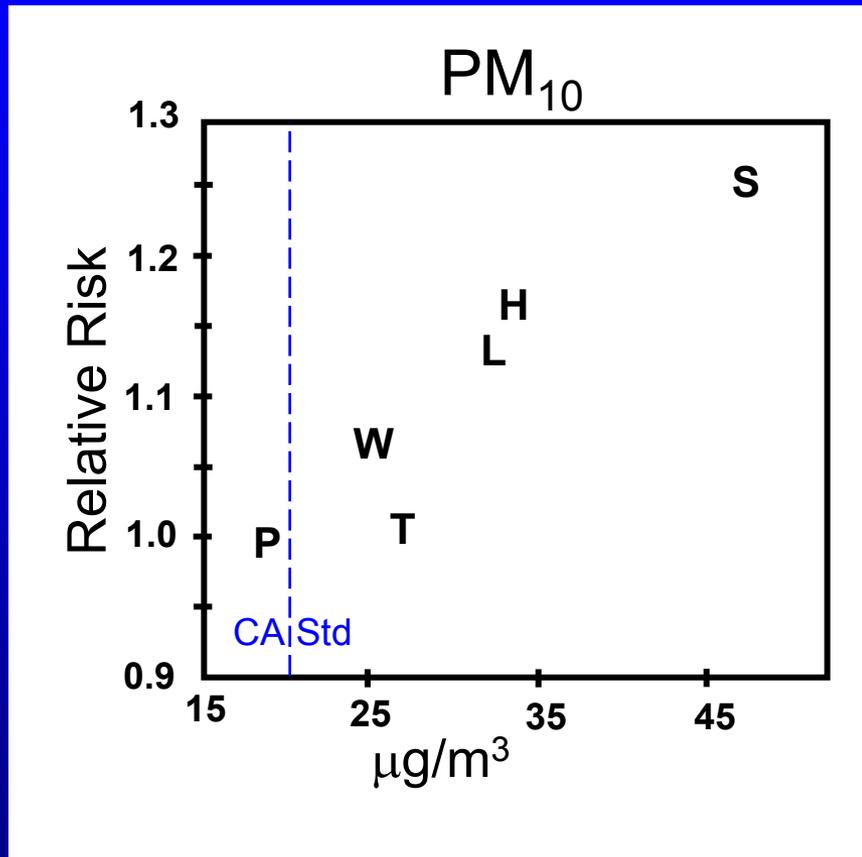
European studies out to 40 days find 2-4 times the death rate increase.
Analysis of 20 largest cities found no threshold for death from PM_{10} .

PM Mortality – Long Term Exposures

- **New studies confirm earlier findings of cardio-respiratory mortality**
- **HEI reanalysis of Harvard Six-cities and American Cancer Society (ACS) studies replicated results**
- **Extended analysis of ACS study found increased lung cancer mortality**

Death Risk and Long-term PM

Harvard Six-Cities Study



From Dockery et al., 1993, An association between air pollution and mortality in six U.S. cities. N Engl J Med 329:1753-9

American Cancer Society (ACS) Study Results

- **Significant reduction in life expectancy**
- **1.5 year average loss in life expectancy between least and most polluted cities (14 years per premature death)**
- **Update of ACS study (Pope et al., 2002) confirmed earlier findings - 16 years follow-up, accounting for dietary and other variables**
- **Associations between PM2.5 and sulfate and both cardiopulmonary mortality and lung cancer**

Respiratory and Cardiovascular Effects – Short Term Exposures

- **Increased hospitalization and medical visits for respiratory and cardiovascular diseases**
- **Increased respiratory symptoms and decreased lung function**
- **Some association with changes in cardiac function (arrhythmia, heart rate, heart rate variability)**

Effects in Children – Long-term PM Exposures

- Increased risk of bronchitis and chronic cough in children related to long-term exposure to PM10
- PM10, PM2.5 and coarse particles were associated with reduced lung function growth in Children's Health Study
- PM exposure during pregnancy reported to be associated with low birth weight, premature birth, and birth defects

Vulnerable Populations

Group	Type of Evidence		Strength of Evidence
	Epidemiology	Mechanistic	
Elderly with heart/lung disease	yes	yes	
Asthmatics	yes	emerging	
Children	yes	---	
Infants	yes	---	
Neonates	yes	---	
Diabetics	yes	---	

Air Pollution and Mortality in Los Angeles

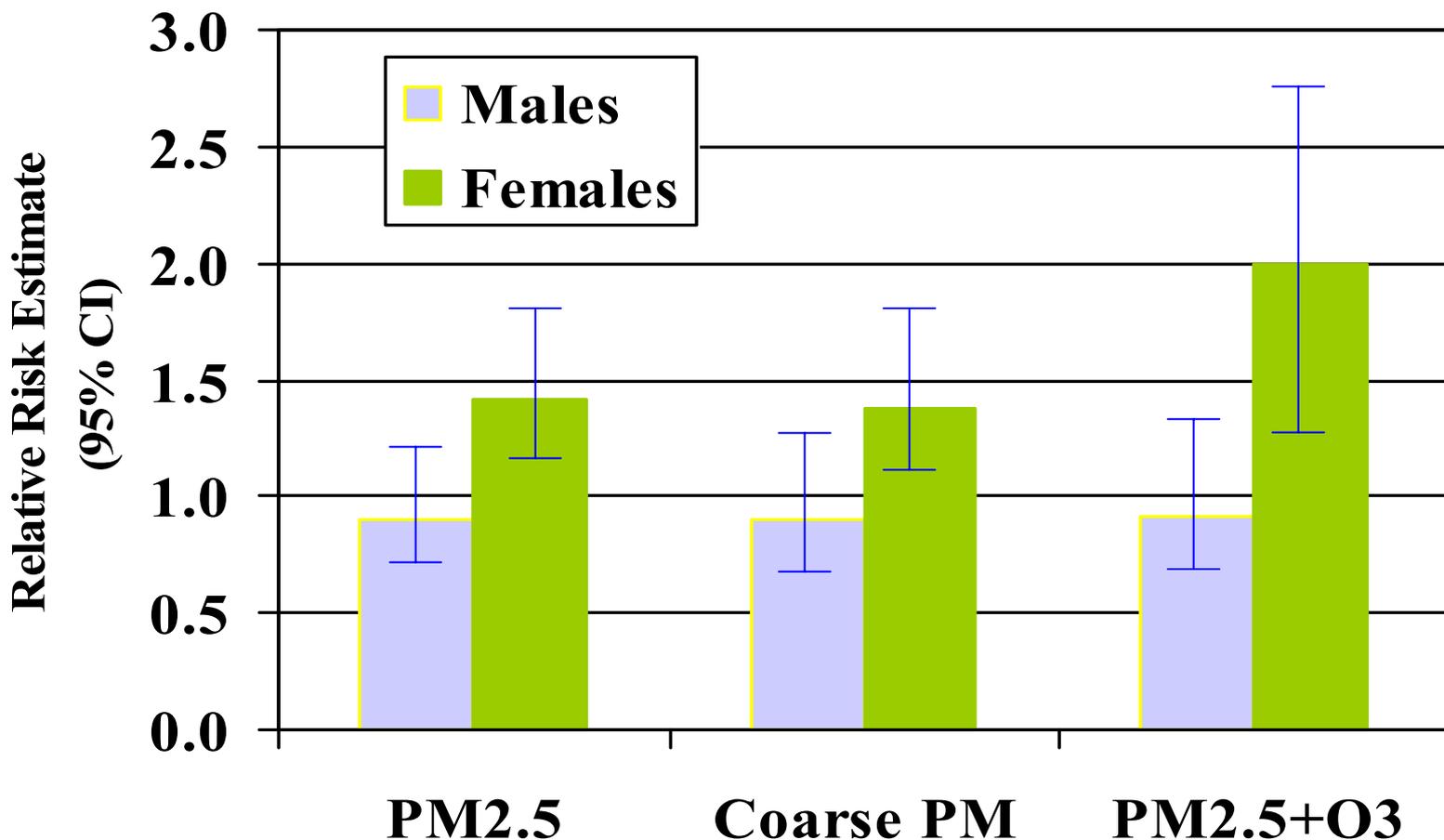
- **2005 follow-up of American Cancer Society study with Los Angeles residents**
- **Increased risk of death – 3 times greater**
- **Possibly due to higher traffic-related PM in LA**
- **Strongest association with Ischemic Heart Disease**
- **Lung cancer**

Air Pollution & Atherosclerosis in the Los Angeles Basin

- **Ambient levels of PM_{2.5} may contribute to increased atherosclerosis**
- **Atherosclerosis - primary cause of heart disease and stroke**
- **Increase corresponds to 3-6% long-term increase risk for heart attack**
- **Heart disease kills 30% of Californians**

* Kunzli, N.; Jerrett, M.; Mack, W. J.; Beckerman, B.; LaBree, L.; Gilliland, F.; Thomas, D.; Peters, J., and Hodis, H. N. Ambient air pollution and atherosclerosis in Los Angeles. *Environ Health Perspect.* 2005 Feb; 113(2):201-6.

Particulate Air Pollution and Fatal Coronary Heart Disease: Women may be at Greater Risk



Chen, L.H.; Knutsen, S. F.; Shavlik, D.; Beeson, L.; Petersen, F.; Ghamsary, M.; and Abbey, D.: The Association between Fatal Coronary Heart Disease and Ambient Particulate Air Pollution: Are Females at Greater Risk. Environ Health Perspect. 2005 Dec; 113(12):1723-29.

Ambient Air Quality Standards ($\mu\text{g}/\text{m}^3$)

		Annual	24-Hour
California	PM ₁₀	20	50
	PM _{2.5}	12	--
National (current)	PM ₁₀	50	150
	PM _{2.5}	15	65
National (proposed)	PM _{10-2.5}	--	70
	PM _{2.5}	15	35

Impact from PM2.5 Levels Above CA Standards



California Cases/Year

Premature Deaths	8,200
Hospitalizations & ER Visits	5,100
Asthma Attacks	170,000
Respiratory Symptoms	420,000
Minor Restricted Activity Days	6,900,000

Diesel PM

- **70% of cancer risk from air toxics in CA**
- **Regional risk in urban areas about 500-800 potential cancers per million people exposed**
- **Near source risk can exceed 500 per million in some locations near rail yards and ports**

ARB Assessment of Ports of Los Angeles and Long Beach

- **Community impacts of diesel PM widespread**
- **Over 400,000 people in area of 200 in a million risk**
- **Over 50,000 people in area of 500 in a million risk**
- **ARB emission reduction plan for ports released December 2005**

Conclusion

- **Both fine and coarse PM are health concerns**
- **New studies confirm associations and provide plausible biological mechanisms**
- **Premature mortality and cardiovascular and respiratory effects linked to short and long term exposures**
- **Diesel PM poses significant cancer risk**

Proposal to Revise the National Ambient Air Quality Standards for Particle Pollution



Lydia Wegman, U.S. EPA
Air Quality Management Subcommittee Meeting
Dallas, TX
January 24, 2005

Overview

- On December 20, 2005, EPA proposed revisions to the National Ambient Air Quality Standards (NAAQS) for particle pollution.
- The proposed revisions would strengthen a fine particle standard important for both health and visibility, and would improve and refocus the coarse particle standards on those particles that are associated with public health concerns.
- The proposed revisions address two categories of particle pollution:
 - *fine particles* ($PM_{2.5}$), which are 2.5 micrometers in diameter and smaller; and
 - *inhalable coarse particles* ($PM_{10-2.5}$), which are smaller than 10 micrometers in diameter but larger than $PM_{2.5}$.
- Simultaneously, EPA proposed amendments to its national air quality monitoring requirements, including those for monitoring particle pollution. The proposed changes include the design of a network to monitor $PM_{10-2.5}$.
- For more information on both proposals and the RIA:
 - <http://www.epa.gov/air/particles/actions.html>

PM_{2.5}

PM_{2.5} – Primary 24-hour Standard

- Under the proposal, EPA would revise the level of the **24-hour standard** from the current level of **65 $\mu\text{g}/\text{m}^3$** to **35 $\mu\text{g}/\text{m}^3$** .
 - EPA is proposing this change based on its assessment of a significantly expanded body of scientific information.
 - Studies show health effects at and below the level of the current standard
- EPA also is considering alternative levels for the 24-hour standard, between the range of 35 and 30 $\mu\text{g}/\text{m}^3$ and is soliciting public comment on these levels.
- In addition, the Agency will take comment on alternative approaches for selecting the level of the standard, and on levels as high as the current level of 65 $\mu\text{g}/\text{m}^3$ and as low as 25 $\mu\text{g}/\text{m}^3$.

PM_{2.5} – Primary Annual Standard

- EPA is proposing to retain the current **annual standard at 15 $\mu\text{g}/\text{m}^3$**
 - EPA is proposing to retain this standard based on its assessment of several expanded, re-analyzed and new studies that have increased the Agency's confidence in associations between long-term PM_{2.5} exposure and serious health effects, including heart and lung-related death.
- EPA is considering and is seeking public comment on lower alternatives for the annual standard including 14 and 13 $\mu\text{g}/\text{m}^3$.
- In addition, the Agency will take comment on alternative views including a standard as low as 12 $\mu\text{g}/\text{m}^3$.

PM_{2.5} – Secondary Standards

- The proposal would set the **secondary standards** for both the annual and 24-hour standards at levels identical to the primary standards
- EPA also is taking comment on whether to set a separate PM_{2.5} standard, designed to address visibility (principally in urban areas)
 - At levels within a range of 20 to 30 $\mu\text{g}/\text{m}^3$, and
 - On averaging times within a range of four to eight daylight hours

Potential Timeline if $PM_{2.5}$ NAAQS are Revised

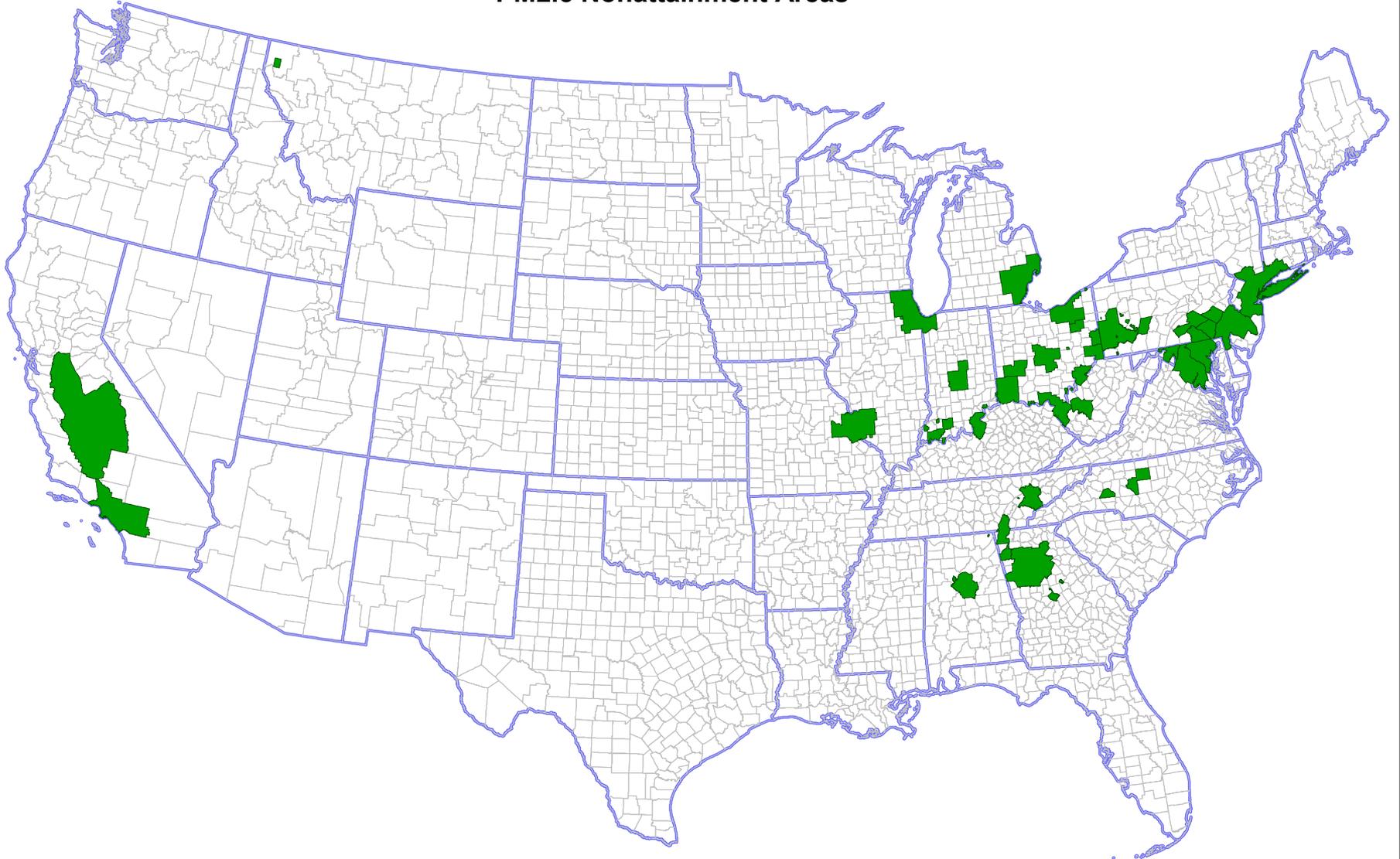
Milestone	1997 $PM_{2.5}$ Primary NAAQS	2006 $PM_{2.5}$ Primary NAAQS
Promulgation of Standard	July 1997	Nov. 2006
State Recommendations to EPA	Feb. 2004 (based on 2001-2003 monitoring data)	Nov. 2007 (based on 2004-2006 monitoring data)
Final Designations Signature	Dec. 2004	Nov. 2009
Effective Date of Designations	April 2005	April 2010
SIPs Due	April 2008	April 2013
Attainment Date	April 2010 (based on 2007-2009 monitoring data)	April 2015 (based on 2012-2104 monitoring data)
Attainment Date with Extension	Up to April 2015	April 2020

Summary of Counties Violating the PM_{2.5} Primary Standards Current and Projected 2015

<i>Standard Options</i>	<i>Current</i>			<i>Projected with CAIR/CAVR/CAMR*</i>		
	National	East	West	National	East	West
15/65—current standard	116	102	14	32	18	14
15/35	191	141	50	76	30	46
14/35	235	185	50	96	50	46
15/30	326	264	62	178	116	62

* See Technical Support Document for details on projection method used here (i.e., Speciated Modeled Attainment Test--SMAT).

Currently Designated PM2.5 Nonattainment Areas

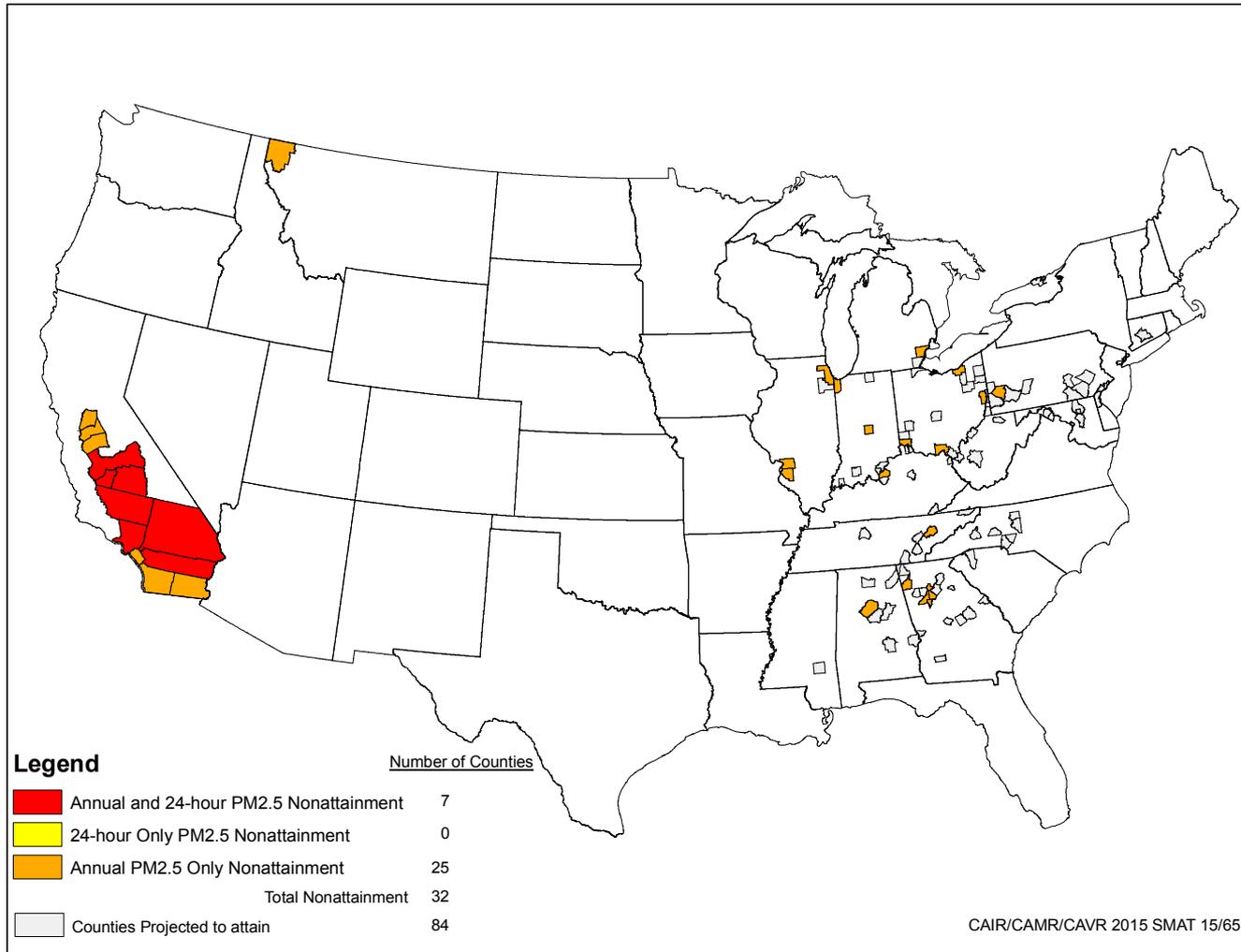


Projected $PM_{2.5}$ Attainment/Nonattainment: Modeled Estimates for the Year 2015

Counties Projected to Exceed the PM2.5 NAAQS in 2015

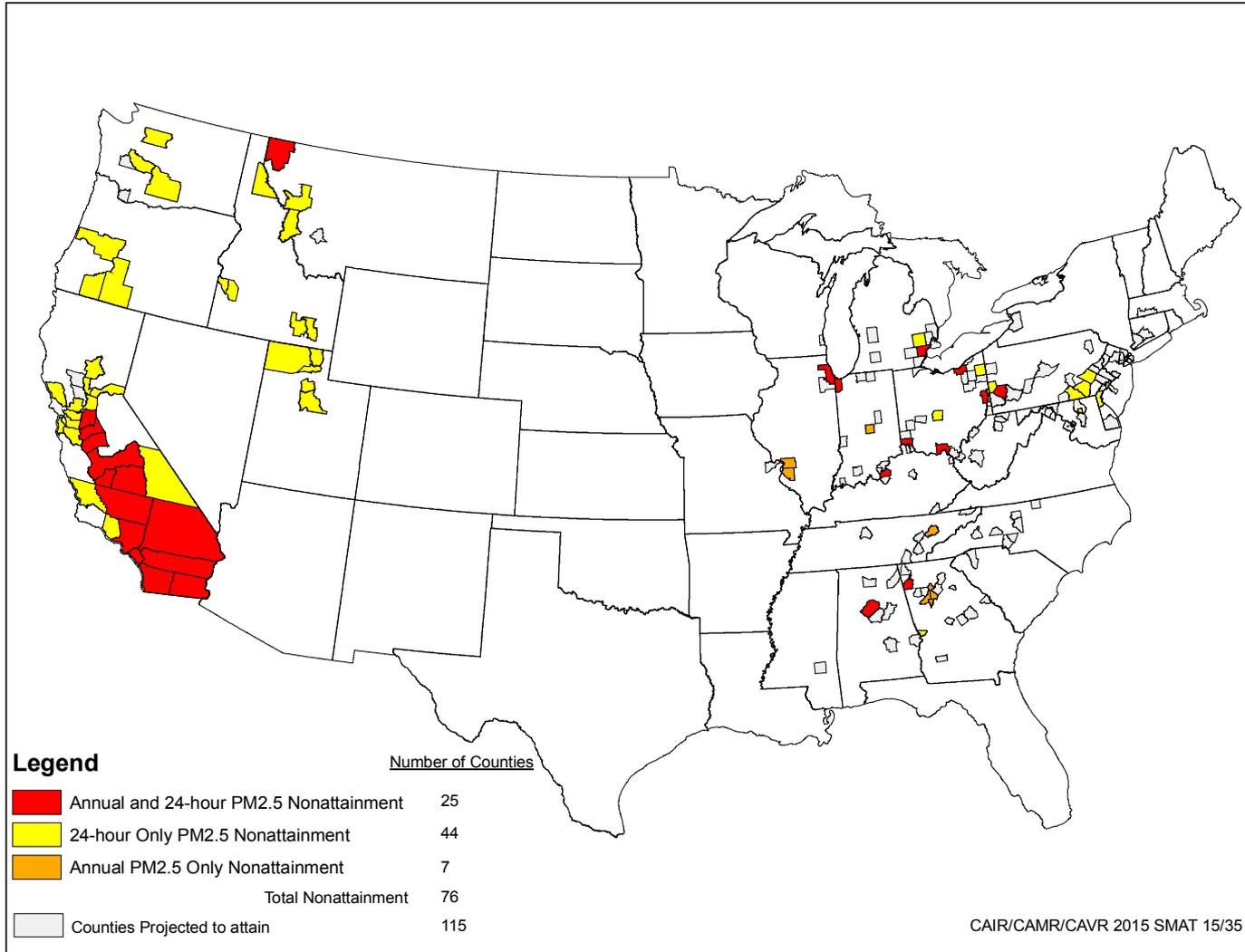
Based on EPA Modeling*

Annual **15 ug/m3** and 24-Hour **65 ug/m3**



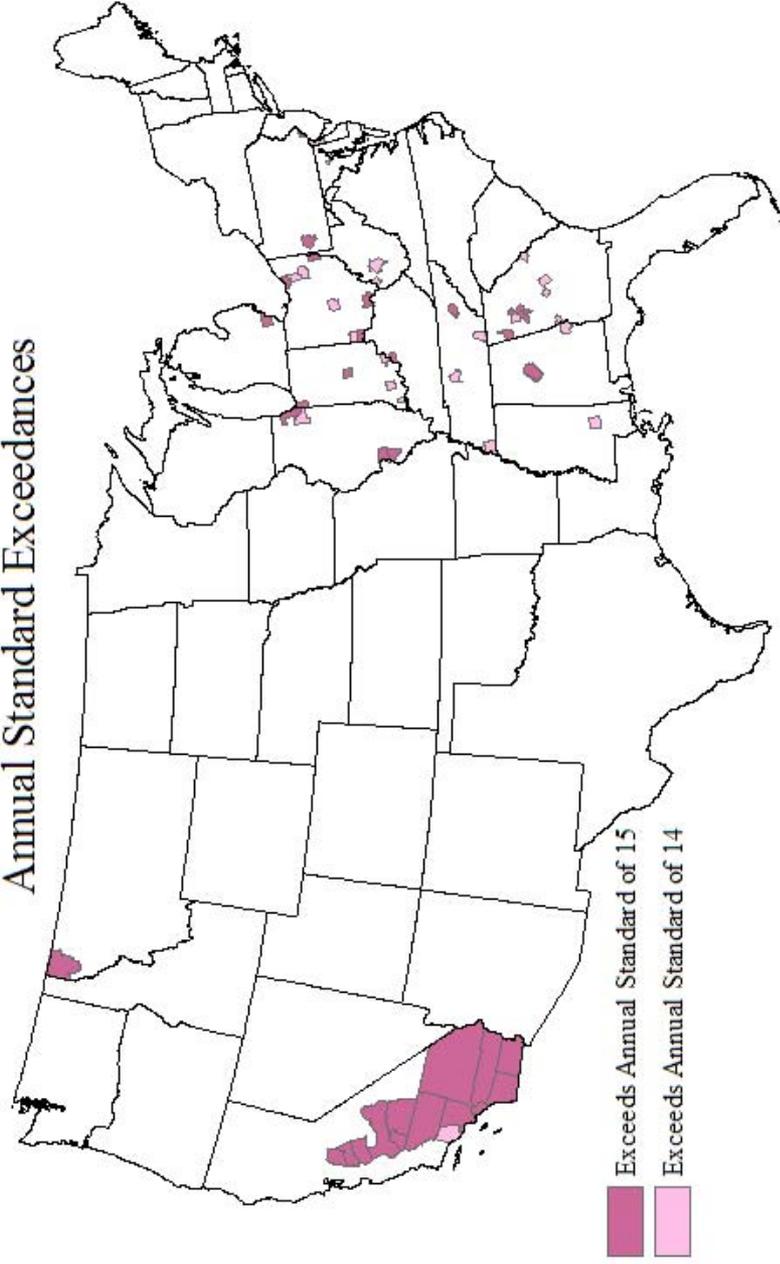
**EPA models assume implementation of CAIR/CAMR/CAVR, mobile source and other federal rules and existing state programs. Air quality is expected to be better than shown. This approach does not forecast actions states will take to meet current PM standards. Also note that modeled air quality forecasts are subject to a number of uncertainties.*

Counties Projected to Exceed the PM2.5 NAAQS in 2015
 Based on EPA Modeling*
 Annual **15 ug/m3** and 24-Hour **35 ug/m3**

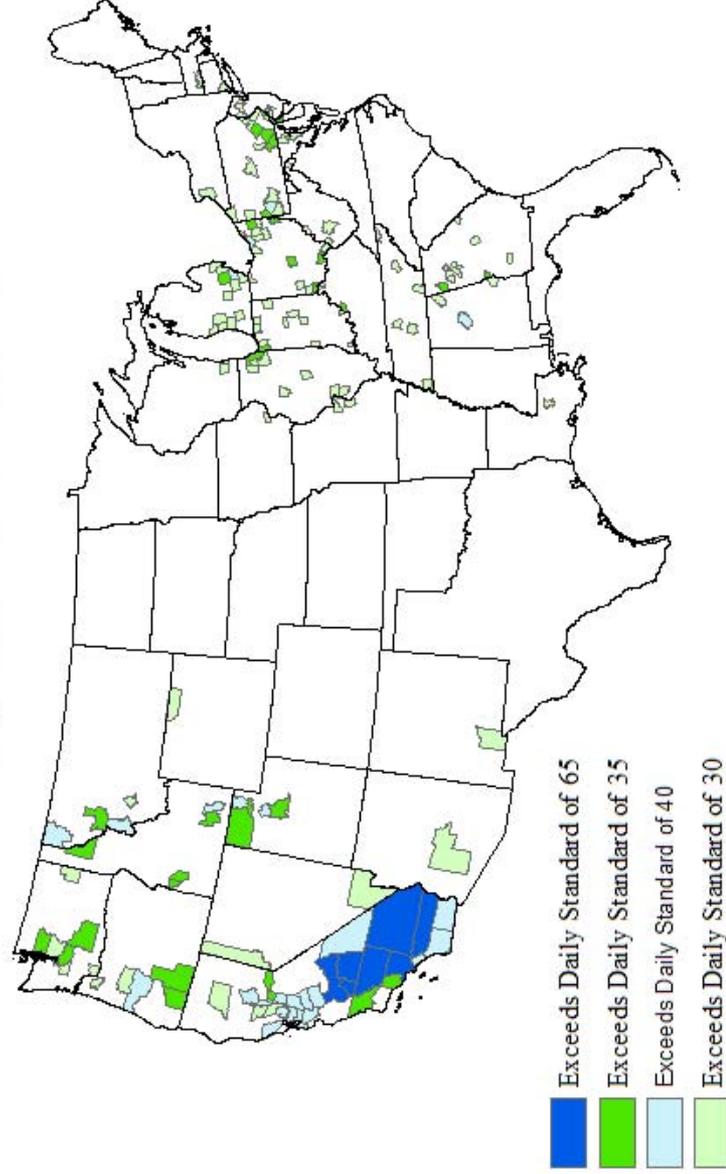


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Annual Standard Exceedances



Daily Standard Exceedances



2015 Base Case Scenario

Inhalable Coarse Particles: *$PM_{10-2.5}$*

Inhalable Coarse PM – Moving from PM_{10} to $PM_{10-2.5}$

- EPA's current standards for coarse particles (PM_{10}) were set in 1987.
- These standards – a 24-hour standard of $150 \mu\text{g}/\text{m}^3$, and an annual standard of $50 \mu\text{g}/\text{m}^3$ -- apply to particles 10 micrometers in diameter and smaller.
- The proposed revisions would change the definition of standard so that it covers only particles between 10 and 2.5 micrometers in diameter also known as $PM_{10-2.5}$ or “inhalable coarse particles.”

Inhalable Coarse PM – Moving from PM₁₀ to PM_{10-2.5}

- EPA proposes to qualify coarse PM to include:
 - Any ambient mix of PM_{10-2.5} that is dominated by resuspended dust from high-density traffic on paved roads and PM generated by industrial sources and construction sources.
 - This definition **excludes** any ambient mix of PM_{10-2.5} that is dominated by rural windblown dust and soils and PM generated by **agricultural** and **mining** sources.
 - Agricultural sources, mining sources, and other similar sources of crustal material shall not be subject to control in meeting this standard
- The indicator is not defined or limited to any specific geographic area, but includes a mix of PM_{10-2.5} in any location that is dominated by these sources.

Inhalable Coarse PM – Moving from PM_{10} to $PM_{10-2.5}$

- With the proposed indicator, each area in the country would fall into one of these two categories:
 - (1) the majority of the ambient mix of $PM_{10-2.5}$ in an area is resuspended dust from high-density traffic on paved roads and PM generated by industrial sources and construction sources, or
 - (2) the majority of the ambient mix is rural windblown dust and soils and PM generated by agricultural and mining sources.

Monitoring Network Design for Proposed $PM_{10-2.5}$ NAAQS

- Monitoring only required in MSAs with urbanized areas of 100,000 people or more.
 - Zero to 5 required monitors per MSA based on population and estimated historical concentrations.
 - Total of about 225-250 monitors required in approximately 150 MSAs.
 - Focus on urbanized areas so concentrations will be dominated by coarse particle emissions from high-density traffic, industrial sources, and construction sources, and not be dominated by rural windblown dust and soils and particles generated by agricultural and mining sources.
- Additional network features:
 - Required coarse particle speciation sites in MSAs of population > 500,000 with estimated design values > 80 percent of proposed NAAQS. Approximately 25 sites will be required based on these criteria. EPA envisions approximately 50-100 speciation sites at a nationally diverse set of urban and rural locations.
 - EPA support for non-required rural $PM_{10-2.5}$ mass concentration sites to assess differences between areas dominated by wind blown crustal materials and by urban enriched coarse particles.

Monitoring Network Design for Proposed $PM_{10-2.5}$ NAAQS

- Monitoring Methods.
 - Plan is to emphasize deployment of continuous Federal Equivalent Method (FEM) monitors, because the high temporal resolution will best support a daily NAAQS and is more cost-effective than filter-based methods.
 - Use filter-based Federal Reference Method (FRM) monitors as basis for comparison when approving FEM's and also for quality assurance of network data.
- Deadlines in monitoring proposal.
 - States must submit coarse particle monitoring plans by January 1, 2008. May request delay to July, 2008.
 - Monitoring network must be operational by January 1, 2009.
- Monitoring NPRM solicits comment on many aspects of coarse particle network design including the consideration of non-required NAAQS-comparable monitors in non-urban settings when particle mix is likely to be dominated by large industrial point sources and/or high traffic roadways.

Monitoring Network Design for Proposed $PM_{10-2.5}$ NAAQS

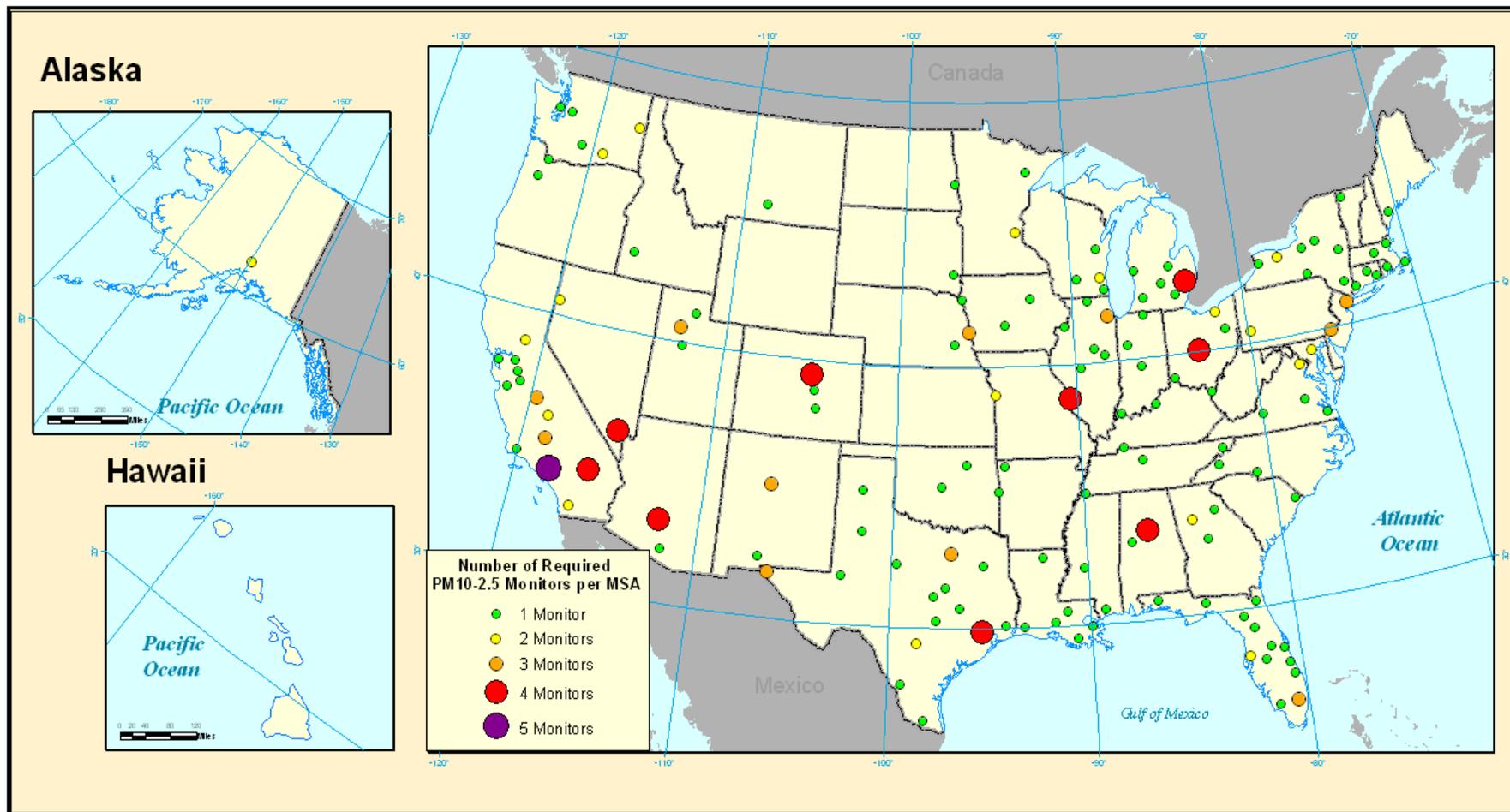


Illustration of coarse particle monitors that could be required by the proposed requirements in the monitoring NPRM. The circles, which are sized to indicate the number of required monitors, appear at the centroid of MSAs and do not imply the actual placement of any of the required monitors at particular locations within the MSA.

PM_{10-2.5} Standards

- The proposed **new PM_{10-2.5} standard** would be a **24-hour standard**, at 70 $\mu\text{g}/\text{m}^3$.
- EPA is not proposing an annual standard for PM_{10-2.5}.
 - There is not sufficient scientific evidence to support a long-term standard for coarse particles
- Under the proposal, the **secondary** 24-hour standard for PM_{10-2.5} would be identical to the primary standard.

Revoking the Current PM₁₀ Standard

- EPA is proposing to revoke the **current 24-hour PM₁₀ standard**, except in urbanized areas that have both:
 - 1) one or more violating PM₁₀ monitors; and
 - 2) a population of 100,000 or more.
 - This standard would remain in place in these areas until the Agency has completed attainment and nonattainment designations for PM_{10-2.5}.
 - EPA is taking comment on whether the 24-hour PM₁₀ standard should be retained in areas with a population less than 100,000 but where the majority of the ambient mix of PM_{10-2.5} is generated by high density traffic on paved roads, industrial sources, and construction sources.
- The Agency is proposing to immediately revoke the **current annual PM₁₀ standard** in all areas.
 - Current scientific evidence does not show significant public health risks associated long-term exposure to coarse particles. 22

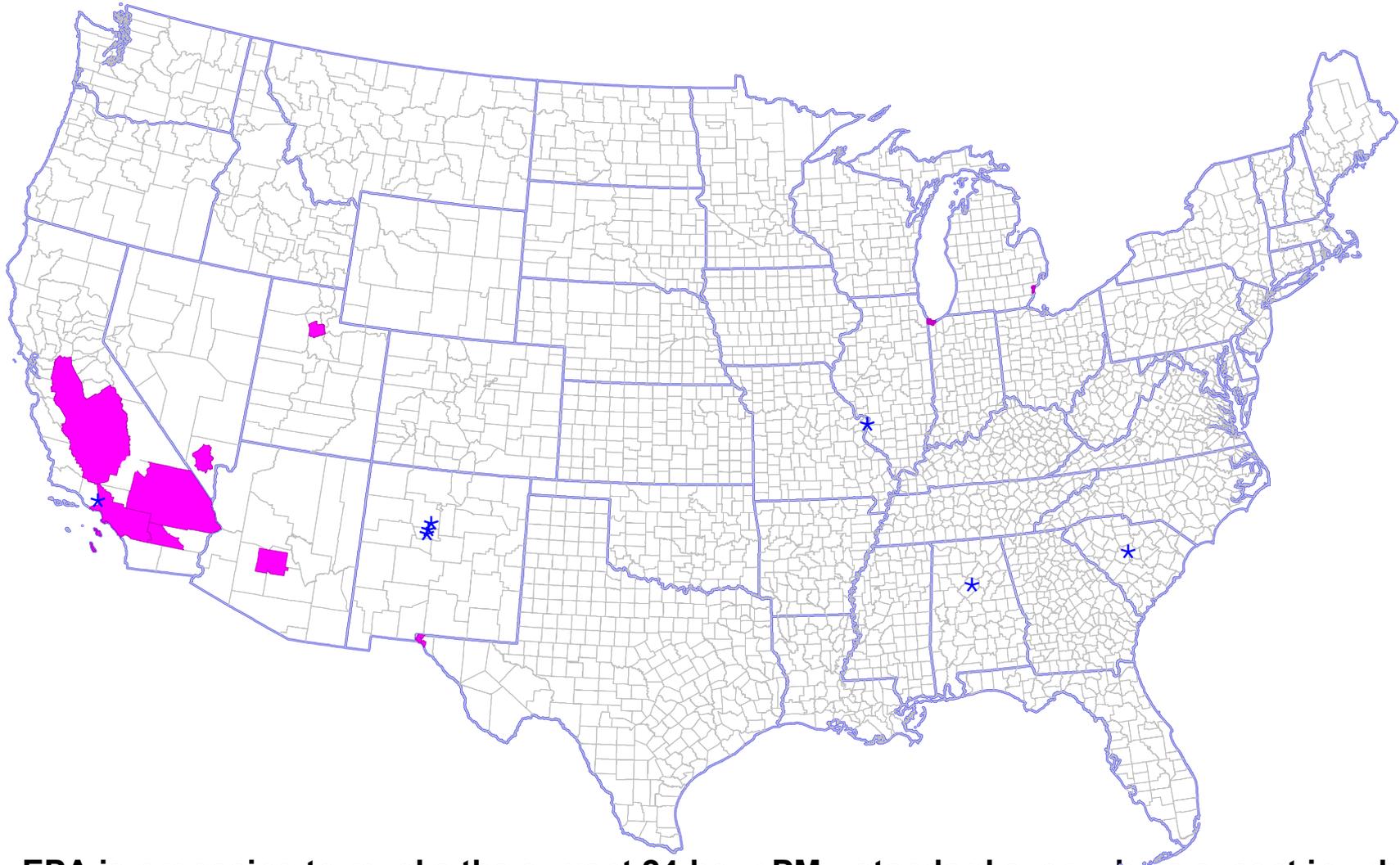
Current PM NAAQS Review – Schedule

- Rulemaking on PM NAAQS:
 - **Proposal** signed on December 20, 2005 (as required by consent agreement)
 - **Public comment** period: 90 days
 - **Public Hearings** to be held early March in Philadelphia, Chicago and San Francisco
 - **Final Rule** to be signed by September 27, 2006 (required by consent agreement)
 - Proposal includes simultaneous rulemakings
 - PM NAAQS, Federal Reference Method, & Data Handling (Part 50)
 - Air Monitoring Regulations: Requirements for Reference and Equivalent Methods, Network Design Requirements (Parts 53 & 58)
 - Upcoming and related rulemakings:
 - Exceptional & Natural Events, Advance Notice of Proposed Rulemaking on Transition Issues

Potential Timeline if $PM_{10-2.5}$ Standard is Finalized

Milestone	2006 $PM_{10-2.5}$ NAAQS
Effective date of Standard	Nov. 2006
State Recommendations to EPA	July 2012 (based on 2009-2011 monitoring data)
Final Designations	May 2013
Effective Date of Designations	July 2013
SIPs Due	July 2016
Attainment Date	July 2018 (based on 2015-2017 monitoring data)
Attainment Date with Extension	Up to July 2023

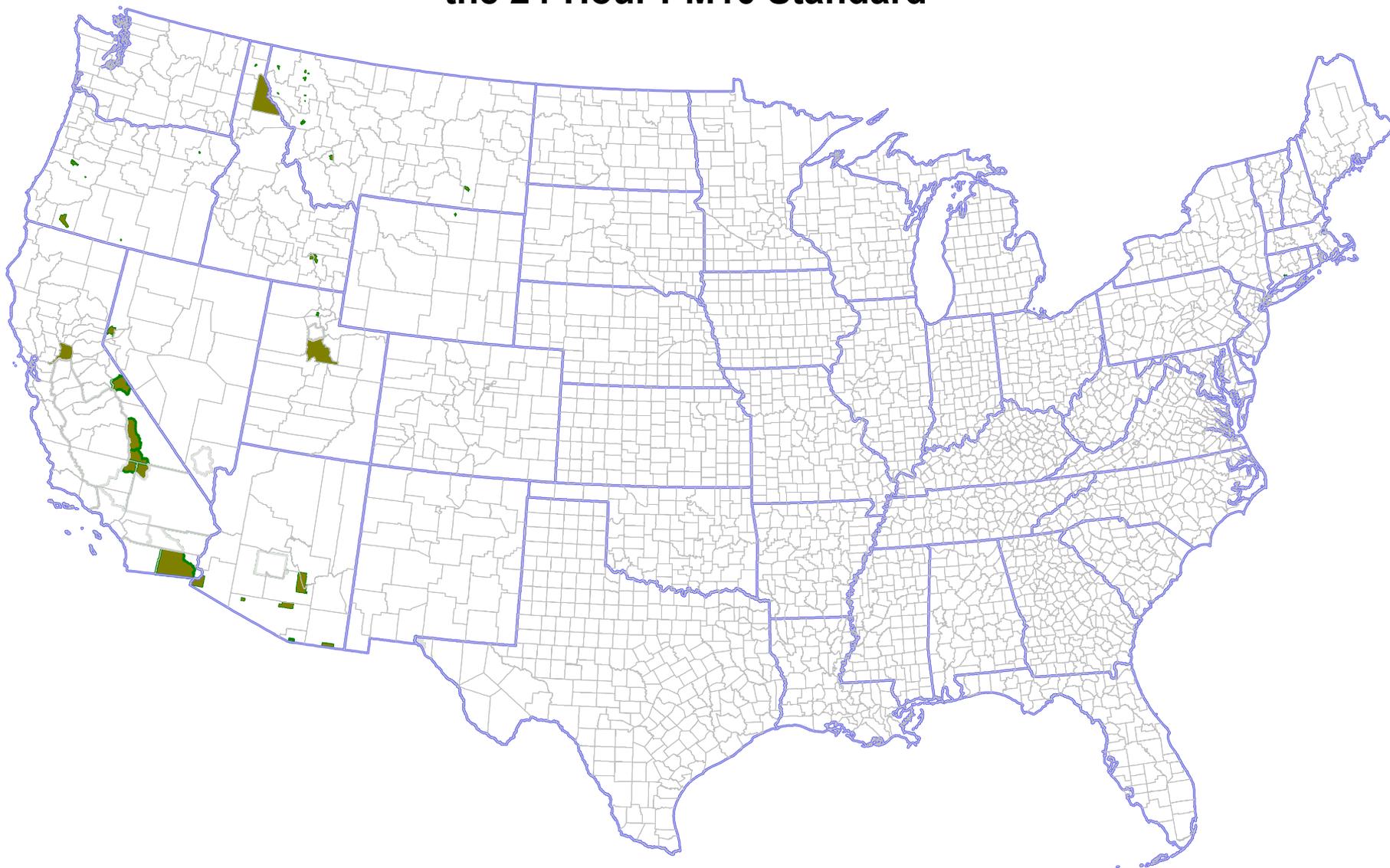
Locations where EPA Proposes to Retain the 24-Hour PM₁₀ Standard



EPA is proposing to revoke the current 24-hour PM₁₀ standard everywhere except in urbanized areas that have a minimum population of 100,000 and that contain a monitor which violates the 24-hour PM₁₀ standard based on the most recent three years of data. These include:

-  *Current PM₁₀ Nonattainment and Maintenance Areas*
-  *Other counties with violating monitors*

Current PM₁₀ Nonattainment Areas where EPA Proposes to Revoke the 24-Hour PM10 Standard



Team 1 Issue 1: Problem Definition

The topic of this paper is is:

What are the air quality threats to health and the environment? How do we determine and characterize on an ongoing basis the air quality problems that need to be addressed?

- 1) What are the current methods for determining the impacts of air pollution on health and the environment?
 - a) Research/studies directly undertaken by federal agencies, e.g. EPA, CDC, NOAA, NAS, others?
 - b) Research/studies undertaken by academia/private organizations
Question: how does federal government influence what research gets done by non-federal organizations?

- 2) What are the current mechanisms to assure we are focusing on the right problems?
 - a) Required regular NAAQS review
Issues: NAAQS review doesn't happen when it should; there is no interaction between criteria pollutants and HAPs under current system;
 - b) Section 112 residual risk requirements
 - c) EPA strategic planning process – agencywide
Issues: strategic planning process is driven by current requirements in Act; very cumbersome; EPA plans on national level, but many current issues are local
 - d) Sporadic efforts by individual offices, divisions, or managers to review priorities (e.g. monitoring network review)
Issues: no public input; no coordination among EPA offices; not regularized
 - e) Cooperative research efforts between agencies, e.g. IMPROVE study of regional haze and national parks undertaken by EPA/DOE/NOAA
 - f) Legal challenges and court decisions
Issues: very hit and miss;

- 3) What are the barriers to true priority setting?
 - a) funding cycles
 - b) legal requirements/legislative mandates
 - c) amount of data – increasing all the time
 - d) complexity of issues – synergies
 - e) are the right entities involved in the right ways (federal agencies, states, local government, stakeholders, the public)

- 4) What other mechanisms could be used to assess whether we are focusing on the right things? E.g.
 - a) John Bachmann thinks about it periodically (or some variant)
 - b) Ensure full weight is given to assessment of all relevant health studies
 - c) Hold periodic board research reviews upon government and nongovernment institutions that look at environmental impacts and comparative evaluations/risks
 - d) Put risk in context—population risk and individual risk
 - e) Look at pollutant impacts in the context of broader emissions picture as well as local impacts
 - f) Encourage and review research that drills down to determine actual causes of impacts of pollutants (e.g. specific constituents of PM2.5 that may cause impacts)
 - g) Cooperative research among agencies
 - h) Assess problems on local scale—and look for local solutions—since many current and future issues are local in scope
 - i) Consider low and high impact risks in evaluation

Team 1 – Issue Group #2

Proposed Strategies for “Air Quality Planning Process”

(Revised Jan 20th, 2006)

Introduction

The Subcommittee on Air Quality Management is developing recommendations for long-term changes to the current air quality management system. These recommendations are based on the National Research Council’s 2004 report titled “Air Quality Management in the United States”. Team 1 of the AQM Subcommittee is designing a proposed process for managing air quality. The Team has divided its work into various issue areas assigned to corresponding groups. Group #2 is addressing Issue #2: the Air Quality Planning Process. This paper provides a summary of draft proposals currently under discussion within Group #2. The proposals will be further developed by the Group Members. Proposal #5, Boundaries, is an example of how to further develop or flesh out the rest of the proposals. Because it can serve as an example to develop the others, Proposal #5 is presented here in the front of the document.

Various common principles have been suggested to guide the Group as they add specificity to the proposals. These common themes are:

1. Show reasonable progress and continuous improvement.
2. Develop SIPs that produce clear benefits in a smarter, cheaper, less burdensome manner without giving up what has been achieved.
3. Analyze and account for what has been accomplished before setting goals.
4. Aim at sources that have been less controlled in the past.
5. Focus on reducing emissions sooner to minimize health risks.
6. Look at cost efficiencies and incorporate cost effective measures as they become available.
7. Address current minimum requirements for non-attainment areas (e.g., conformity and NSR).
8. Maximize technology approaches.
9. Prioritize basis for reductions: emissions, sectors (target those that make more sense first), control technologies (as they become available).
10. Develop a performance based goals framework where all sources are expected to comply.

11. Develop a “forcing function”, such as avoiding designations.
12. Seek and incorporate stakeholder input (e.g., explore self certification program?).
13. Voluntary approaches such as Early Action Compacts (EAC) should get local officials involved, provide “ownership”, and quantify EAC as much as possible.
14. Increase trading credits for lower control requirements or increase time to comply.
15. Develop both uniform national standards and regional approaches as appropriate.
16. Provide as much environmental quality, flexibility, equity, and certainty as possible.

The principles identified above have been examined in the context of emissions, AQ modeling, monitoring, multi-pollutant approaches, etc ... and the draft proposals are presented below ...

Proposal #5: BOUNDARIES

Draft Date: October 18, 2005

Author: Jeff Underhill

Goal: Improve and coordinate interstate planning and rulemaking to better reflect the science of air pollution formation and transport.

Topics Addressed:

1. Determine meaningful boundaries
2. Transform the SIP process
3. Deal with pollution transport

Options:

- A. Status Quo – Nonattainment areas, State and RPO boundaries
- B. Elimination of Boundaries
- C. Regional Airsheds
- D. Areas of Influence/Areas of Violation

Background

The Clean Air Act is currently geared toward addressing air pollution at the local level, focusing mostly on acute impacts from specific pollution sources. Other provisions allow EPA to issue rulemaking to address pollution on regional and national scales, typically focusing on specific pollution sources (MACT, heavy-duty diesel, Tier 2, etc.), but sometimes also more general (NO_x SIP call, CAIR, etc.). EPA's stated goal is to reduce pollution from these sources enough that states and tribes can meet attainment by enacting a reasonable amount of local controls.

The Clean Air Act specified that the Ozone Transport Commission be created, consisting of 13 states and the District of Columbia in the Northeast with the worst-measured levels of ozone in order to create a formal forum for interstate planning purposes. Generally speaking, this exercise has been a success and regional ozone levels have dropped significantly. Outside the Northeast, most states have worked independently to develop their SIPs or have banded together on a piecemeal basis to address emissions.

As ambient air pollution standards become more protective, localized pollution controls have become more difficult to identify and more costly to implement. The OTAG process demonstrated that certain pollutants such as ozone defy state boundaries and that some states could not reach attainment without more regionally and nationally coordinated emission reductions. Thus the need for regional coordination has increased greatly for pollutants with longer atmospheric lifetimes (ozone, small particles, etc.) Section 126 petitions have been filed by states desperate to reduce upwind emissions.

Option A: Status Quo - Nonattainment areas, State and RPO Boundaries

Timeline: Could be implemented within 1-year.

Partners: EPA, RPOs (states and tribes), stakeholders

Costs: Could be implemented primarily through existing cost structures.

Perhaps the easiest option to implement and the most likely to lead to prolonged air pollution nonattainment and litigation. While successful for certain pollutants such as CO and SO₂, success has been more difficult to accomplish for more regionally persistent pollutants. This option continues to rely on whatever national and regional programs emerge from federal and regional rulemaking and leaves local authorities to do the rest.

While simple in concept, this option has only limited success in reducing transportable pollutants since often what is left behind is beyond the physical ability for local authorities to successfully address, or so expensive or unpalatable that local rulemaking fails. In many areas failing to attain certain air pollution standards, most of the simple and cost effective local control measures have already been implemented and rulemaking is held up because more cost effective pollution reductions may be found outside the local nonattainment area.

Success for Option A would likely require more national and sub-national scale pollution reduction regulations to be implemented by EPA or Congress in order to reduce pollution transport to levels that realistic levels of local emission controls can successfully achieve attainment. Success for this option is also dependent on better aligning regional and national emission control regulation implementation dates and phase-in schedules with attainment dates. In many cases the federal programs lag the attainment dates by several years. Clearly this results in the economic conflicts of the costs to phase in controls faster with the ongoing health impact costs. Since local authorities only have control over their own jurisdictions, legal recourse is required when air pollution transport from outside their boundaries is too great to remove the remainder with realistic local controls. As an alternative, EPA should work with local communities to determine what level of local emission reductions are realistically possible before determining how much incoming pollution is reasonable after federal programs are implemented. This determination should be done as part of the federal rule technical analysis, in partnership with local authorities, so that the resulting regulations are not fatally flawed prior to implementation.

Increase reliance on RPOs ...

Option B: Elimination of Boundaries

Timeline: Could be implemented in 1 to 2-years.
Partners: EPA, RPOs (states and tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures.

Elimination of nonattainment area boundaries could result in the loss of existing nonattainment area specific controls. Some sort of no-backsliding provision would be required to prevent emissions growth from rebounding industrial opportunity in areas restrained by emissions offsets and other restrictive requirements. Emission sources may seek to level the economic playing field with traditional attainment areas. Since no-backsliding provisions would still require some variation of current nonattainment area boundaries, removal of boundaries may not prove to truly be a simplification of the boundary system.

Option B would rely heavily on highly effective and timely regional and national emission reduction regulations that would also be implemented locally. Local authorities would be free to designate their own control program implementation boundaries based on what is determined to be most politically and scientifically effective for them. While local authorities would be encouraged to seek partnerships with neighboring jurisdictions to gain needed out-of-area emission reductions, there is a strong risk that Option B would not be much more successful in developing such partnerships than the current nonattainment system has achieved.

Moving forward towards attainment of more protective and harder to attain standards will invariably lead toward the need of additional controls on a less than national/sub-national scale. Without nonattainment area boundaries or some other boundary that approximates some reasonable scientific boundary, state and or RPO boundaries may become the default for delineating the extent controls need to be implemented. Unless EPA acts to implement rules covering differing regions, there is a possibility of pitting states/tribes against states/tribes in an upwind/downwind debate and Section 126 petitions rather encouraging entities to work together.

Removing all boundaries runs the risk of legal battles over who is responsible for what nonattainment and who should fall under more restrictive programs. As a result there will be a fairly high likelihood of drawn-out timelines.

Option C: Regional Airsheds

Timeline: Could be implemented within 1 to 2 years.
Partners: EPA, RPOs (states and tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures.
Regional coordination and travel costs could increase.

The regional airshed concept is based on the scientific principle that topography, weather patterns, and pollution sources combine to create their own boundaries and that it is this boundary that needs to be managed in order to most effectively meet clean air goals. An example of airshed management is the Ozone Transport Region in the Northeast. Several states with a common problem, high ozone levels, were grouped together so that they can combine resources to meet a common goal. Combined, the states are charged with identifying air pollution reduction measures that can be implemented regionally, and thus lowering implementation costs and economic competitiveness between partner states. The concept has been an unprecedented success although when created it was not anticipated how great the inter-airshed transport would be. For regional airsheds to be effective, lessons should be learned from what works and what does not with the Ozone Transport Region. Scientifically correct airshed also need to be defined in other regions of the country so that those regions can benefit from the expanded coordination.

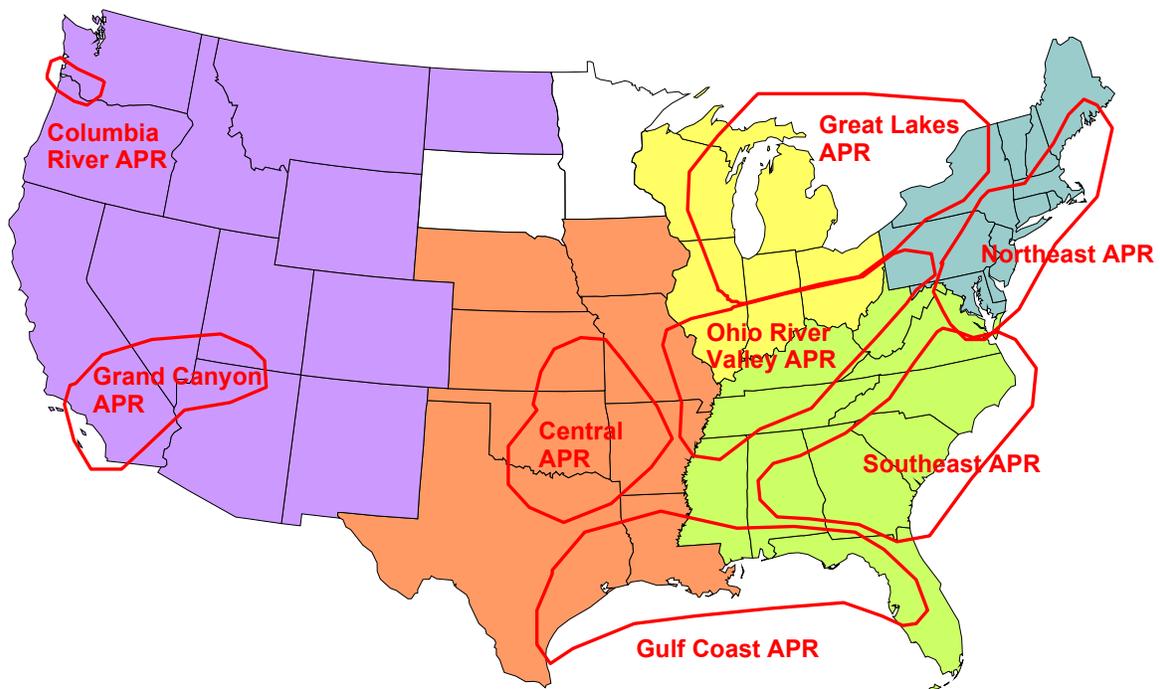
Regional Planning Organizations developed for regional haze planning were an attempt to develop a form of airshed management, but during the formation, certain states did not want to get clustered with certain other states and the end result of the RPO boundaries became an airshed/political boundary hybrid. In order to work, the airshed boundaries need to be developed based on the science, starting with regions demonstrating measured air pollution commonalities as well as common source types. Rather than creating a new set of planning organizations, the existing RPO structure could serve to bring the airsheds together with the requirements of seeking common solutions. Airsheds would seek to cover multiple pollutants whenever possible, but airsheds may ultimately need modifications to accommodate other pollutants.

Airshed Planning Region Considerations

- Recognize that use of political boundaries when defining airsheds.
- Monitoring and major sources/source regions should be considered.
- Regional modeling and meteorological modeling should also be considered.
- Nonstandard forms of measurements such as aircraft, balloon, satellite, mountain-top, building/tower monitors could prove useful.
- While MSAs may be useful in identifying the urban extent of metropolitan emissions, the boundary is generally too small to be considered an airshed.
- Once an airshed is defined, efforts should be made to understand the science of what creates it, special topographical and meteorological issues, population health risk, and other environmental and socioeconomic impacts.
- Airshed Planning Regions could contain several nonattainment areas.
- Airshed Planning regions would not necessarily include entire states, nor would they necessarily be entirely contained within the existing RPOs.

- The existing RPOs may contain multiple Airshed Planning Regions
 - States may opt into upwind airsheds.
- Nonattainment areas will still represent areas with poor air quality and be the focus of state/tribal SIPs.
 - Airshed Planning Regions look at the regional context of air pollution sources and how it affects nonattainment areas and other areas of poor air quality. Efforts should be focused on building successful state/tribe interrelations and SIPs.
 - Regional Planning Organizations will continue to be the forum for bringing the regional states together for coordination and planning. Beyond the RPO's mandate for studying regional haze, they would now also be charged with coordinating the work of the airsheds within, or partially within their borders.
 - National - EPA will still need to seek out pollution controls that are best implemented on a national or sub-national level and will provide resources as needed to study air pollution emissions, transport, and the coordination of the RPOs so that inter-RPO transport and airsheds that span multiple RPOs are properly considered.

Example of what regional Airsheds may look like:



Option D: Areas of Influence/Areas of Violation

Timeline: Could be implemented in 2 to 3 years.
Partners: EPA, RPOs (states and tribes), stakeholders
Costs: Additional financial resources would be needed to complete AOI/AOV analyses. Regional coordination and travel costs could increase.

Perhaps the most scientifically sound concept for reducing problematic air pollutants is to first define the areas that have higher than permitted levels, or areas of violation (AOV), and then somehow define with accuracy the areas of influence (AOI) that affect those AOVs. While defining AOV's is relatively straightforward through monitoring, determining culpable sources is difficult and varied from day to day. While technology has advanced far enough to allow analysis for what areas most influence a violating monitor, the process is tedious and results in a complicated network of AOIs for each AOV that overlap and cross-over each other. Further complicating the technique is the varying degrees that sources within an AOI actually affect the AOV and where should the boundary be drawn. For example, an analysis may determine that a 100 ton source 30 miles away from a violating monitor has a negligible influence, but a 250 ton source 10 miles beyond the smaller source has a significant impact. Where does one draw the boundary? Now what if there are two 100 ton sources that separately don't significantly impact the monitor, but combined, they do?

In order to be successful, a rigorous analysis would need to be undertaken for each monitor in violation, including the development of techniques that reasonably account for the logistics that create an AOV. For example, is there a single source causing the violation, or are there numerous sources that are minor individually, but combine to create the violation. Analyses will need to consider what source sector(s) is (are) most responsible for violations and what existing pollution control and associated timeline mean to remedying the violation.

What jurisdiction oversees the resulting AOIs creates an interesting problem. If the AOI lies entirely within a single state or tribe, that authority would logically be in charge. If the AOI covers more than one state/tribe, then states could voluntarily work together like in Options A and B above or use existing RPO venues. Since there are dozens of violating monitors in some RPOs, the RPO structure could get buried in logistics for tracking each associated AOI.

Perhaps the RPO/APR approaches discussed above could be accepted as the AOI surrogate.

Proposal #1: Technology or Performance Standards

Draft Date:

Author:

Goal: Reduce emissions using technology or performance standards. Broad, but reasonable, emissions reductions can generally be required without modeling being the determining factor regarding which sources do or do not require controls. Should use ambient monitoring to measure progress. The advantages include: greater certainty of requirements, greater “equity”, less delay in establishing requirements, and greater total emissions reduction. The disadvantages include possible over control or controls where not currently needed. Sources should have up-to-date or state-of-the-art emission controls. The challenge is how to set these standards. Continuous progress, regulatory backstop, and requirements should minimize multiple reporting requirements.

Topics Addressed:

- National Standards – regulation driver is needed: incentive-based, market-based, or regulatory
- Local, state, or regionally applied
- Combination of national, regional, state, local strategies
- Across broad source categories
- Selected categories
- Limited or all source types – stationary, mobile, area, etc
- New sources
- Also existing sources
- Conceptual level of control – RACT, BACT, MACT, LAER, other, etc
- Other designated areas such as airshed?

Options:

Background:

Option A: _____

Timeline: Could be implemented within a year.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option B: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option C: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures, but regional coordination and travel costs may increase.

Option D: _____

Timeline: Could be implemented in 2-3 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Additional financial resources would be needed to complete analyses. Regional coordination and travel costs may increase.

Proposal #2: Monitoring-based

Draft Date:

Author:

Goal: Reduce emissions based on increased reliance on monitoring and on creating incentives for state/locals to use more monitoring. Only the controls that are needed to meet the goals are applied. Disadvantages include under-controlling, inability to accurately estimate the effect of future conditions, and longer time to achieve reductions. Advantages include less reliance on models and input assumptions, more equity, ... Need to think about political realities of number and location of monitors. This program would require good monitoring and a flexible process SIP that would provide for quick adjustments. For attainment areas, use an incentive based program like the TRI or 33/50 program. Public information would be used to reward good performers and encourage high emitters to reduce. Monitoring data can be used as a trigger for action instead of using designations to start actions, e.g., actions activated within x years (3?) of designations.

Topics Addressed:

Options:

Background:

Option A: _____

Timeline: Could be implemented within a year.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option B: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option C: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures, but regional coordination and travel costs may increase.

Option D: _____

Timeline: Could be implemented in 2-3 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Additional financial resources would be needed to complete analyses. Regional coordination and travel costs may increase.

Proposal #2a: Monitoring Supplemented with Modeling

Draft Date:

Author:

Goal: Reduce emissions based on increased reliance on monitoring and on creating incentives for state/locals to use more monitoring. However, degree of controls and selection of sources to control could be determined through modeling. Only the controls that are needed to meet the goal are applied. Disadvantages include under-controlling, inability to accurately estimate the effect of future conditions, and longer time to achieve reductions. Advantages include less reliance on models and input assumptions, more equity, ... Reliance on modeling can be decreased, but use models to develop strategies, as weight of evidence, and to corroborate that programs are effective. Use of AQ modeling provides a strong role for monitoring. Monitored data is important to validate models and verify what's been accomplished; use more monitored data, not rely on modeling as much; use modeling as supplemental for urban areas and hotspots. Need to think about political realities of number and location of monitors. The reductions that will make the most difference are based on a combination of monitoring programs and modeling. This program would require good monitoring and a flexible process SIP that would provide for quick adjustments. For attainment areas, use an incentive based program like the TRI or 33/50 program. Public information would be used to reward good performers and encourage high emitters to reduce. Monitoring data can be used as a trigger for action instead of using designations to start actions, e.g., actions activated within x years (3?) of designations. A program like this will need to specify what level of modeling is required: – local, state, regional or federal, or combination?

Topics Addressed:

Options:

Background:

Option A: _____

Timeline: Could be implemented within a year.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option B: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option C: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Proposal #3: Standards based on technology, modeling and monitoring

Draft Date:

Author:

Goal: Reduce emissions based on a combination of the above approaches using these strategies:

- Consider AQ monitoring as overlay to emission reductions
- Use modeling to look at NAAQS and HAPs hotspots
- Shift responsibility for the modeling away from states to regional orgs or to EPA
- Use regulatory incentive as function of attainment/nonattainment
- Minimize standards/requirements for attainment areas

Topics Addressed:

Options:

Background:

Option A: _____

Timeline: Could be implemented within a year.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option B: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option C: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures, but regional coordination and travel costs may increase.

Option D: _____

Timeline: Could be implemented in 2-3 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Additional financial resources would be needed to complete analyses. Regional coordination and travel costs may increase.

Proposal #4: Multi-Pollutant Approach

Draft Date:

Author: (Get someone that is working on the Detroit MP pilot)

- Goal: Reduce emissions using a multi-pollutant planning approach. The difficulty of a multi pollutant approach under current CAA is caused by varying attainment dates. Advantages include: economy of effort, economy of controlling. We will need to closely examine which source categories are appropriate for this approach. Some sources may be more appropriately addressed by source sector. If sectors are willing to invest aggressively, we should allow trade offs to take more time and include a stakeholder process. We also recommend using a cooperative spirit, incentives, new technology (e.g., IGCC) that might require longer timeframes. A single pollutant planning approach may be justified in certain cases, e.g., toxics.

Topics Addressed:

- Reconciling timing – allow more time as a trade off to better technology, etc
- Major urban areas will need special attention; more rural areas can less attention (5-10 yrs); standard period of planning 10 years with mid-period adjustment or trigger “on ramp” for changed conditions
- EPA doing a pilot with R5, MI, and Detroit on steel

Options:

Background:

Option A: Status Quo

Timeline: Could be implemented within a year.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option B: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option C: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures, but regional coordination and travel costs may increase.

Option D: _____

Timeline: Could be implemented in 2-3 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Additional financial resources would be needed to complete analyses. Regional coordination and travel costs may increase.

Proposal #6: Continued Progress

Draft Date:

Author:

Goal: Reduce emissions through continued progress/deadlines. Will need to continue increasing efficiency of current measurement metrics such as:

- Emissions reduction
- Air Quality
- Combination
- Other?

Will need to continue increasing efficiency of:

- Rate of progress – need a hammer
 - What should it be?
 - “AEAP”
 - Straight line
 - Declining emissions balance
 - Other?
 - Significance of ROP
 - Enforceable?
 - Triggers plan revision?
 - “penalty”?
 - Only as an indicator
 - Contingency plan
 - Other?
- Ongoing measurement of progress / accountability
 - Option? Need dates and interim milestones
- Deadlines for both NAAQS and controls; need flexibility; account for economic downturns or other changes that that could slow down emission reductions; provide lots of time for industry to comply, but set reasonable targets (10-yr timeframe, PALS, etc)
 - Existing OK?
 - Sub-part 1
 - Sub-part 2 – mid course review
 - Alternatives?

Topics Addressed:

Options:

Background:

Option A: Status Quo

Timeline: Could be implemented within a year.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option B: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option C: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures, but regional coordination and travel costs may increase.

Option D: _____

Timeline: Could be implemented in 2-3 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Additional financial resources would be needed to complete analyses. Regional coordination and travel costs may increase.

Proposal #7: Other Programs (These could become separate proposals)

Draft Date:

Author:

Goal: Reduce emissions by considering other programs such as:

- Climate Change -- promote corporate responsibility; target source categories that could/should do more; pressure from stakeholders and community groups; forcing function is shareholder resolution; another forcing function is published reports (models to use: TRI, Energy Star, car safety ratings); industry-wide effort; not easy to generate support.
- Smart Growth and Land Use – how to deal with infrastructure and future issues/impacts; could use massive data sets from NASA satellites on land use, albedo, etc.
- Energy Efficiency – define role energy efficiency should play; can credits offset requirements? Basic minimum level required? What to do with ecoplants? Promote clean fuels, IC engines, H future
- International Standards – can't do much once international rules apply; how to influence international rules
- International Transport
- Incentives for voluntary and innovative land use, energy, and transportation technologies or approaches. These incentives should include credits, regulatory incentives, and tax incentives.

Topics Addressed:

Options:

Background:

Option A: _____

Timeline: Could be implemented within a year.

Partners: EPA, RPOs (States and Tribes), stakeholders

Costs: Could be implemented primarily through existing cost structures

Option B: _____

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures

Option C:

Timeline: Could be implemented in 1-2 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Could be implemented primarily through existing cost structures, but regional coordination and travel costs may increase.

Option D:

Timeline: Could be implemented in 2-3 years.
Partners: EPA, RPOs (States and Tribes), stakeholders
Costs: Additional financial resources would be needed to complete analyses. Regional coordination and travel costs may increase.

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TEAM 1: Group 3
**Proposed Coordination Strategies for Air Quality,
Land Use, Energy, Transportation and Climate**

[NOTE TO READER: This document represents the work product of Group #3 as of Jan 20. It contains eight proposals. For Proposal #2, the group has achieved some consensus, which is noted in the comment summary following the proposal and reflected in the body of the proposal. Proposal #2 also has some issues and text that the group is still working on, which is also noted in the body of the proposal and in the comment summary following the proposal. For the other proposals (1 and 3-8), consensus has not yet been achieved. For those proposals, the areas where the Group will have additional discussion are highlighted in the body of the proposals and discussed in the comment summaries following each proposal.]

INTRODUCTION

The Subcommittee on Air Quality Management (“AQM Subcommittee”) is developing recommendations for long-term changes to the air quality management system based on the National Research Council’s recommendations in its 2004 report entitled “*Air Quality Management in the United States*”. Team 1 to the AQM Subcommittee is designing a proposed process for managing air quality and has divided its work into various issue areas. We have been asked to address Issue 3. Specifically, *we have been asked to propose ways in which the AQM framework of the future should coordinate with other programs such as land use, energy, transportation and climate*. This paper provides a summary of draft proposals we are currently discussing. These proposals reflect input from a variety of stakeholders, including from government, industry and environmental group representatives. Thus far, we have focused our efforts on the broad concepts that have been proposed, rather than on specific language choices. During the next several weeks we will continue to refine and finalize the draft proposals.

PROPOSAL 1: FEDERAL AGENCIES SHOULD PREPARE AND MAKE AVAILABLE TO OIR, OMB AND THE PUBLIC STATEMENTS OF AIR QUALITY, ENERGY, TRANSPORTATION AND CLIMATE EFFECTS FOR RELEVANT AGENCY ACTIONS. ANY FINAL AQM DESIGN EPA ENDORSES OR ADOPTS SHOULD BE CONSIDERED A RELEVANT AGENCY ACTION FOR PURPOSES OF THIS REQUIREMENT.

Pursuant to Executive Orders 13211 of May 18, 2001 and 12866 of September 30, 1993, federal agencies are currently required to prepare a Statement of Energy Effects when undertaking certain “significant energy actions.” “Significant energy actions” include actions that promulgate or are expected to lead to the promulgation of a final rule or regulation that is likely to have a significant adverse effect on the supply, distribution or use of energy or that is designated by OIR as a significant energy action. A Statement of Energy Effects must include, among other things, detailed information regarding any adverse effects the agency action will have on energy supply, distribution, or use (including a shortfall in supply, price increases and increased use of foreign supplies).

Federal agencies must provide Statements of Energy Effects to OIR and OMB. OIR uses the Statements of Energy Effects to ensure that one federal agency's proposed actions do not conflict with another agency's policies or actions. Federal agencies must also publish their Statements of Energy Effects, or a summary thereof, in each Notice of Proposed Rulemaking and in any resulting Final Rule.

Proposal 1 is that federal agencies should prepare Statements of Air Quality Effects, Statements of Transportation Effects and Statements of Climate Change Effects for significant air quality, transportation and climate actions and should provide these Statements to OIR and OMB when they present the submission required by Executive Order 13211 of May 18, 2001. Federal agencies should also publish these Statements in each Notice of Proposed Rulemaking and in any resulting Final Rule.

For purposes of this requirement, "significant air quality actions" shall mean actions that promulgate or are expected to lead to the promulgation of a final rule or regulation that is likely to have a significant adverse effect on air quality, "significant transportation actions" shall mean actions that promulgate or are expected to lead to the promulgation of a final rule or regulation that is likely to have a significant adverse effect on transportation, and "significant climate actions" shall mean actions that promulgate or are expected to lead to the promulgation of a final rule or regulation that is likely to have a significant adverse effect on global climate change. Additionally, in each case, OIR shall have the authority to designate an agency action as a significant action for purposes of one or more of these requirements.

Additionally, ~~any final AQM design that EPA endorses or adopts~~if EPA formally endorses or adopts a new AQM design as a result of AQM Subcommittee Team 1's recommendations, EPA should work with affected stakeholders to determine whether the AQM design would likely have a significant adverse effect on energy, air quality, transportation and/or climate. To the extent that the AQM design would likely have a significant adverse effect on one or more of these interests, EPA's endorsement or adoption of the new AQM design should constitute a significant agency action ~~for purposes of the above requirement~~, and EPA should work with outside resources, including DOE and DOT, to prepare a Statement of Air Quality Effects, Statement of Energy Effects, Statement of Transportation Effects and/or Statement of Climate Change Effects for the AQM design. EPA should subject these final Statements of Air Quality, Energy, Transportation and Climate Change Effects to public notice and comment.

The chief benefit of this proposal is that it provides information on the impacts of federal rulemakings and thereby informs members of the public, federal agencies, stakeholders and others of the impacts of those rulemakings as they review and comment on them.

[Comments:

1. **NEPA:** Matt Kuryla and others asked the team to think about how this proposal relates to the NEPA process and what new or additional consideration of air

quality effects is appropriate for agency decisions. Subsequent research revealed that regulations that EPA adopts under the CAA are largely exempt from NEPA. Several DOT and DOE regulations are also exempt.

2. **Experience with Statements of Energy Effects:** Certain team members requested additional information regarding EPA's experience with Statements of Energy Effects. Chris Stoneman researched this issue for the group, and found that EPA has not triggered the Statement of Energy Effects requirement in many rulemakings. In fact, to our knowledge, EPA has only triggered the requirement three times to date. This suggests that the requirement has not been unduly burdensome.
3. **Scope:** Jeanette Clute and Jerry Roussel believe this proposal goes beyond Group 3's charge. Janet McCabe, Michael Bradley and others disagreed, suggesting this appeared to be right in line with Group 3's charge.
4. **Burden and Scope:** The Alliance of Automobile Manufacturers, Ford Motor Company, National Cotton Council, and Southern Company believe this proposal goes beyond Group 3's charge. The executive orders already require entities to develop a statement of energy effects when taking significant energy effects. Proposal #1 expands this existing requirement and requires all federal agencies (not limited to recommendations for EPA actions) to prepare statements of air quality effects, transportation effects and climate effects on any relevant agency action. Proposal #1 includes a broad definition of significant agency action that includes, but is not limited to, EPA actions under AQM Sub Committee recommendations. Even if it were limited to AQM Sub Committee recommendations it would create a new regulatory requirement for EPA to undergo formal analyses of energy, transportation, and climate change and add requirements for EPA to include these analyses in air quality rulemaking actions and subject those analyses to public review and comment. This would add significant burden to EPA resource needs when promulgating air quality actions. EPA currently does not have jurisdiction or expertise to develop such analyses and is under resource constraints to handle those areas under its jurisdiction including criteria pollutants and air toxics. Furthermore all federal agencies are under financial limitations to carry out their respective responsibilities. From a resource standpoint we are not in agreement with the added requirements and burden, which take focus off of EPA's core charter, air quality. Additionally, it is not the role of the AQM subgroup to recommend broad expansion of EPA's authority in these areas or require additional burden on other federal agencies.

Janet McCabe, Michael Bradley Michael Morford and others disagreed that the proposal went beyond group 3's charge, suggesting this the proposal appeared to be right in line with Group 3's charge. Lisa Gomez clarified that the last paragraph of the proposal was intended to be very narrow, and to specifically relate to an AQM design that EPA might endorse or adopt as a result of Team 1's work. Lisa Gomez said Group 3 would clarify this intent. Chris Stoneman pointed out that the existing requirement that agencies prepare Statements of Energy Effects (i.e., the requirement upon which this proposal was based) has only been triggered 3 times at EPA. Leah Weiss said that she has experience with

state requirements along these lines that were first viewed to be extremely burdensome, but in practice were not so burdensome and turned out to be quite helpful. Michael Bradley and Lisa Gomez pointed out that Group 3's intent was not that ALL agency actions would require this analysis but, rather, than only a limited number of agency actions – those that are likely to have a significant adverse effect on air quality, transportation and climate – would trigger the requirement. Lisa Gomez said Group 3 would clarify this intent. Lisa's interpretation of the proposal is that “significant actions” means significant rules or actions that would produce rules (e.g., AQM design recommended by the CAAAC that EPA adopts.)

Tony Delucia is sensitive to the workload issue posed by the proposal but feels that this looks like the right thing to do and would like to look towards some form of reasonable disclosure of effects.

Jerry Kotas is concerned that Executive Orders can come and go and would rather not rely exclusively on EOs as the mechanism for requiring disclosure. Would prefer to ask EPA to look at the issue comprehensively.

Steve Winkelman recommends that the scope of the proposal be expanded to cover EPA's approval of conformity budgets.

5. **Transportation and General Conformity**: Camille Mittelholtz feels that, if the proposal applies to more than actions that promulgate or are expected to lead to the promulgation of final rules or regulations, then it should explicitly address how it meshes with transportation and general conformity programs.

It was noted that the existing order, by virtue of addressing energy, may effectively address transportation.

6. **Additional information needed**: Need to (1) know whether the existing EO has been triggered at Federal DOT, (2) obtain some compromise language to bridge group members' concerns and (3) determine whether the existing EO covers transportation.]

PROPOSAL 2: THE AQM PROCESS SHOULD SUPPORT TRANSPORTATION AND LAND USE SCENARIO PLANNING AT THE MULTI-JURISDICTIONAL, TRIBAL AND LOCAL LEVELS AND OTHER MEANS TO IDENTIFY EMISSIONS REDUCTION OPPORTUNITIES AND IMPROVE TRIBAL AND LOCAL ENGAGEMENT.

[New language to discuss: The solution to air quality (including criteria pollutant and toxic air pollutant concerns), energy and climate change problems requires Federal, State, Tribal, regional and local strategies.] Multi-jurisdictional planning

organizations¹ and tribal and local governments have primary control and approval authority over land use choices that significantly impact air pollution. For example, multi-jurisdictional planning organizations and tribal and local governments have the power to determine or influence the way in which land is developed, how auto use and transportation patterns evolve, whether energy efficiency or demand side management techniques are required or implemented, and whether local funds are used to support mass transit. Moreover, to a significant degree, the issues that still need to be addressed to solve air quality problems – namely, urban sprawl – are regionally or locally based. While the transportation conformity program is a valuable program for coordinating air quality and transportation planning processes, it does not go far enough in addressing coordination issues between transportation, land use and air quality. By virtue of their role in these multiple areas, multi-jurisdictional planning organizations and tribal and local governments have a unique opportunity to coordinate air quality, land use, energy, transportation (and climate policies). For these and other reasons, Proposal 2 is that multi-jurisdictional planning organizations and tribal and local governments should be an integral part of the AQM process. **[New language to discuss: In addition, air quality problems require multi-state and multi-jurisdictional solutions. As such, entire regions and groups of states should be part of the process of identifying solutions and providing creative emissions reduction strategies. In addition, the AQM process should work with the states on an individual and regional basis and should interface with the regional transmission organizations and independent system operators developed in recent years through the encouragement of the Federal Energy Regulatory Commission.]**

In order to achieve enhanced multi-jurisdictional planning organization and tribal and local government involvement in the AQM process and better coordination of AQM, land use, energy, transportation and climate policies, the AQM process should be modified so that multi-jurisdictional planning organizations and tribal and local government choices are better integrated with, and become a meaningful input into, Federal, State and Tribal AQM processes. In order to accomplish this objective:

- Multi-jurisdictional planning organizations and tribal and local governments should be provided time and resources to understand the impact that their land use, energy, and transportation decisions will have on air quality. To that end, EPA (drawing on outside expertise) should develop a clearinghouse of resources and tools that will help multi-jurisdictional planning organizations and tribal and local governments achieve planning and development practices that benefit air quality. The clearinghouse of resources should include, without limitation, (a) modeling software that enables multi-jurisdictional planning organizations and tribal and local governments to model current and alternative growth patterns, energy trends and transportation investment priorities so that they can study how different future land use, energy and transportation scenarios would impact future air quality (e.g., PLACES software developed by the Sacramento Area Council of Governments); (b)

¹ For purposes of Proposal 2, “multi-jurisdictional planning organizations” include, but are not limited to, multi-state organizations such as State DOTs, MPOs, RPOs, COGs, nonprofit planning organizations and independent system organizations.

EPA-approved and endorsed modeling software that enables multi-jurisdictional planning organizations and tribal and local governments to quantify the emission reductions associated with certain land use, energy and transportation technologies or approaches; (c) on-line tutorials and manuals for using modeling software; (d) model codes and ordinances that benefit air quality (e.g., model codes and ordinances that promote increased urban density, multiuse clustering, energy efficiency and public transportation); e) guidebooks that identify land use, energy and transportation technologies or approaches that benefit air quality and establish certain minimum steps that multi-jurisdictional planning organizations and tribal and local governments must take to obtain State Implementation Plan (SIP) or Tribal Implementation Plan (TIP¹) credit when pursuing such technologies and approaches; (f) model educational and citizen involvement practices; and (g) guidebooks that identify funding opportunities for innovative land use, energy and transportation approaches.

- Multi-jurisdictional planning organizations and tribal and local governments should be encouraged to conduct a visioning and scenario planning process in which the area in question decides where it wants to be in X years and adopts land use, transportation and energy policies and ordinances that further its vision. This could produce an “integrated” strategy that addresses land use, energy and transportation in a manner that is directionally correct for air quality or explicitly tied to attainment. Moreover, as part of their visioning and scenario planning process, multi-jurisdictional planning organizations and tribal and local governments should be encouraged to work with state and/or tribal planning organizations to identify strategically-located local communities that are appropriate for new fuel and energy generation, storage, and transportation facilities and infrastructure requiring changes to the existing land and built environment.
- Multi-jurisdictional planning organizations and tribal and local governments that revise their land use laws consistent with EPA’s model goals and ordinances, or that implement land use, energy or transportation technologies or approaches that benefit air quality, should receive appropriate credit in SIP or TIP planning. Their visioning and scenario planning process should become an input into the SIP or TIP as a measure in the baseline, a measure warranting credit, and/or a growth assumption. EPA has developed several useful guidelines for calculating SIP and TIP credit. For example, EPA has provided guidance on SIP credit for emission reductions from electric sector energy efficiency and renewable energy projects and plans to provide guidance on SIP credit for Emission Reductions from Highway and Off-Road Diesel Vehicles and Retrofits. EPA should continue developing specific guidelines for calculating SIP and TIP credit associated with other land use, energy and transportation technologies and approaches and should instruct EPA regional offices to follow all such guidelines for purposes of SIP and TIP planning and development.
- **[New language to discuss: States and regional bodies should be encouraged to address regional solutions. For example the Western Governors Association**

¹ Throughout this document TIP refers to Tribal Implementation Plan and not Transportation Improvement Program.

has recently issued task force reports on reaching a substantial level of new generation by installing renewable energy systems and enhancing energy efficiency efforts. A similar effort has been undertaken through the northeast and mid-atlantic states engaged in the Regional Greenhouse Gas Initiative. These efforts, and the local efforts discussed in this Proposal should clearly account for the full range of benefits of renewable energy and energy efficiency.]

[Comments:

1. **Regional Planning Organizations vs. Metropolitan or Multi-jurisdictional Planning Organizations and Whether the Term Should Apply to the WRAP:** **[RESOLVED]** Pat Cummins noted that people usually think of the WRAP when they hear “regional planning organizations” and asked whether it might be more appropriate to use the term “metropolitan” planning organizations. People on the call generally agreed that “metropolitan” or “multi-jurisdictional” planning organizations would be appropriate. However, Stephen Hartsfield expressed concern that “metropolitan” planning organizations could be too restrictive because it could be interpreted to exclude rural areas. Stephen Hartsfield much preferred the use of “multi-jurisdictional” planning organizations. He also suggested that we define the term “multi-jurisdictional” and said he believes it would be appropriate for it to be defined in a manner that would include the WRAP. Jeff Genzer also commented that “regional planning organizations” was too narrow. He said it should be expanded to cover multi-jurisdictional efforts and organizations including, without limitation, regional transmission organizations, independent system organizations and the multi-State GHG initiative in the Northeast. Stephen Hartsfield spoke with Pat Cummins regarding Cummins’ suggestion that this proposal should exclude the WRAP. Hartsfield reported back that Cummins’ rationale for excluding the WRAP was “due to the focus on transportation issues. Currently RPOs only have funding for regional haze issues.” However, Hartsfield reports that RPOs will likely seek funding for an expanded scope with the next regional haze deadlines and that he knows WRAP members who are interested in working on climate change and mercury issues when they have funding to do so. Hartsfield also understands that EPA is interested in broadening RPO’s work “because RPOs are an effective mechanism to get ‘stakeholders’ and governments involved.” For the above reasons, Hartsfield believes the proposal should cover RPOs (including the WRAP).
2. **Application to Tribal Governments:** **[RESOLVED]** Stephen Hartsfield commented that tribal governments have a significant role in land use planning and this proposal should be expanded to cover them.
3. **[Should Proposal Cover Climate?]** **[UNRESOLVED]** **Greg Dana would like to strike the words “and climate policies” from the end of the first paragraph because he believes that “while local areas are the best sources for land use and transportation changes, they can’t impact climate change, which is a worldwide issue and requires changes on a worldwide scale.” Michael Bradley felt the language should remain as currently written (i.e., it should**

cover climate) because he believe the language “reflects the reality that local and regional officials in many areas of the country are moving forward on climate related actions” for at least 3 reasons (first to begin achieving actual GHG emissions even though the impact on climate change will be extremely small, second to set examples of actions that can be taken to reduce GHG emissions, and third because these actions often deliver co-benefits).

Steve Winkelman feels that, given our task assignment, it doesn't make any sense that we might strike energy or climate issues from any of the group's proposals. At the end of the proposal's 1st paragraph, if the concern is about the word local climate “policies” - they exist, see the US Mayor's effort (<http://www.ci.seattle.wa.us/mayor/climate/>) and ICLEI as key examples. Steve is certainly amenable to drop the use of “climate” in the 1st paragraph – it's much more important to him that it show up in issues that the scenario planning will assess.

Steve recommends that the 1st bullet of the 1st sentence of the proposal be revised to read: “Multi-jurisdictional planning organizations... should be provided time and resources to understand the impact that their land use and transportation decisions have on air quality, energy use and greenhouse gas emissions.” Steve points out that local and regional land use and transportation infrastructure decisions have a direct impact on vehicle miles traveled, energy use and greenhouse gas (GHG) emissions. The Sacramento Blueprint plan, for example, will achieve a 15% reduction in air pollution and GHG emissions below what result in the business-as-usual transportation and land use scenario.

This point should be echoed in sub-points (a) and (b):

“(a) modeling software that enables multi-jurisdictional planning organizations and tribal and local governments to model current and alternative growth patterns, energy trends and transportation investment priorities so that they can study how different future land use, energy and transportation scenarios would impact future air quality, greenhouse gas emission and energy use (e.g., PLACES software developed by the Sacramento Area Council of Governments);

(b) EPA-approved and endorsed modeling software that enables multi-jurisdictional planning organizations and tribal and local governments to quantify the emission reductions and energy impacts associated with certain land use, energy and transportation technologies or approaches (e.g., emissions reductions associated with vehicle retrofit programs, wood stove change outs, etc.).”]

4. **Should proposal make clear that it applies to criteria pollutants AND toxic pollutants?** [RESOLVED] Someone asked whether the proposal applies to both criteria and toxic pollutants and asked the group to consider clarifying its intent in this regard.

5. **Should the proposal include a communications strategy?** [RESOLVED]
Janet McCabe asked how, once we have all these tools in place, EPA could encourage multi-jurisdictional and tribal and local governments to use the tools. McCabe suggested that a communication strategy may be necessary. Team 1 agreed that this may be an issue of overlap between Groups 3 and 4. Hartsfield (the Issue 4 sub-group lead) agreed to develop a communication strategy around this issue.
6. **Should the “toolbox” include software or guidelines to quantify emissions reductions associated with certain approaches and technologies?**
[RESOLVED] Larry Green suggested that it would be very helpful if EPA would develop approaches that states and local agencies could use to quantify emission reductions associated with certain land-use decisions (e.g., vehicle miles traveled, vehicle retrofit programs, wood stove changeouts, etc.).
7. **Scenario Planning in Transportation Improvement Program Process:**
[UNRESOLVED] Steve Winkelman and Camille Mittelholtz are interested in alternative scenario planning in the Transportation Improvement Program process. For team consideration, Camille will propose language on how the long range transportation planning process fits into this proposal.]
8. **Acknowledge Progress to Date:** [RESOLVED] Camille Mittelholtz notes that DOT and EPA have provided SIP credit guidance in certain areas and suggests that we acknowledge what is already on the books.
9. **Regional Office Communication:** [RESOLVED] Several people noted that EPA regional offices are struggling with how to calculate SIP credit associated with certain land use, energy, and transportation practices and stressed that these offices need clear and mandatory guidance for calculating SIP credit.
10. **Transportation Planning and Conformity:** [UNRESOLVED] Camille Mittelholtz feels the proposal needs to better explain its relationship to transportation planning and transportation conformity. Does the group want to recommend changes to conformity?]

PROPOSAL 3: THE AQM PROCESS SHOULD INCLUDE INCENTIVES (INCLUDING, BUT NOT LIMITED TO, MORE MEANINGFUL FORMS OF CREDIT, REGULATORY INCENTIVES AND ~~TAX~~ECONOMIC INCENTIVES) FOR VOLUNTARY AND INNOVATIVE LAND USE, ENERGY, AND TRANSPORTATION TECHNOLOGIES OR APPROACHES.

The AQM process should include incentives for voluntary and innovative land use, energy, and transportation technologies or approaches that benefit air quality, ~~and~~ Innovative technologies and approaches that should be encouraged include, without limitation, IGCC, carbon sequestration technologies, energy efficiency measures, cogeneration, demand-side resources and renewable resources. The AQM process should better integrate ~~such incentives~~ incentives that encourage these technologies and approaches into the NAAQS implementation process. ~~Such incentives should~~ Incentives could include, but are not limited to, more meaningful forms of SIP and TIP credit, regulatory incentives (such as expedited or streamlined permitting opportunities²) and economic incentives (such as tax incentives, public benefits programs, and state and utility funding programs for energy efficiency projects).

Incentive programs such as expedited and streamlined permitting opportunities, the Texas TERP program, Congestion Mitigation and Air Quality (CMAQ) funds, and innovative measures such as voluntary mobile emissions reduction programs ("VMEP") will, in the aggregate, make greater overall contributions to future SIPs and TIPs than those of the past, which relied more heavily on large point source reductions. Current SIP approval requirements have recently been made incrementally more flexible in crediting such measures, but they still require a ton-denominated precursor reduction applied to each such measure. The AQM process should establish more meaningful forms of credit for such measures. **[New language to discuss: SIP and TIP crediting should be provided for energy efficiency and renewable energy programs. Flexible mechanisms should be incorporated in this process based upon the EPA guidance (issued 2004) and state experience (especially Massachusetts, New York and Texas examples). "Clean" distributed generation initiatives should be considered in the crediting process. In addition, the AQM process should work with the states on an individual and regional basis and should interface with the regional transmission organizations and independent system operators developed in recent years through the encouragement of the Federal Energy Regulatory Commission. Incentives, including establishment and expansion of public benefit programs to encourage**

² For example, with rising energy costs, the energy sector should be encouraged to voluntarily fuel switch to alternative fuel sources such as bio fuels and waste corn. However, the existing AQM system discourages sources from pursuing such fuel switching because of the significant cost and time delays associated with permitting new fuels. To encourage such activities, in lieu of more traditional permitting, sources wishing to pursue fuel switching should be given the option to conduct an initial combustion analysis of the emissions resulting from their proposed fuel mix and to utilize a monitoring program to verify their results. If the emissions analysis suggests that the fuel mix will have a negative environmental impact, the source should be required to undergo more detailed permitting and review. If the initial analysis suggests that the fuel mix will not negatively impact the environment, the source should be authorized to proceed quickly.

energy efficiency and renewable energy, should be considered on a state-by-state, regional and national basis. Fuel diversity should also be an important mechanism to address air quality, land use, transportation and broader energy problems.]

(Identification and development of tools to motivate voluntary and innovative technologies and approaches is referred to Team 2.)

[Comments:

1. **Permit streamlining associated with converting to alternative fuel sources:** John Seitz commented that “the current EPA and local permit programs are not ‘energy friendly’ in terms of making permit adjustments to burn alternative fuel sources. With the cost of energy going up and the emissions associated with more coal use – alternative fuel sources – bio fuels, waste corn etc. – should be promoted not discouraged by the permit process. If a source wants to use an alternative fuel mix ... the permit amendment process takes too long. There should be coordination between EPA and DOE to develop some criteria and performance requirements for different types of fuel mixes a coal fired boiler etc. might want to use. The requirement might be streamlined by requiring an initial combustion analysis of the emissions resulting from the proposed fuel mixture and a monitoring program to verify the results. If the initial analysis suggest that there would be a negative environmental impact, then a more detailed review would be required. On the other hand, if the initial analysis by the source suggested that a mixture would be OK, than they should be able to proceed quickly.” Team 1 members participating in the discussion agreed with this suggestion and thought it fit well with Proposal 2. The Team also discussed that this would ultimately be a tool that Team 2 should consider and that it would be good to highlight this for Team 2.
2. **Are there any other specific tools we should reference?** Team 2 welcomes any specific tools we may suggest for their further investigation. Please see the list of tools that Team 2 is currently pursuing. Are there any additional tools that Group 3 should recommend? Tony DeLucia suggested that we may want to discuss specific smart growth ideas for New Orleans. He will think about this more and will provide specific proposed language, if appropriate.
3. **Energy Technologies and Approaches:** Jeff Genzer suggested that we should weave specific energy technologies and approaches into this proposal including, for example, IGCC, innovative carbon sequestrations technologies, energy efficiency, cogeneration, demand-side resources and renewable resources. Genzer also commented that the proposal should be expanded to include public benefits programs and state and utility programs for low-income and energy efficiency projects.
4. **DOT Language:** Camille Mittelholtz commented that CMAQ is not traditionally thought of as an incentive program. She will provide draft language addressing her concerns.]

PROPOSAL 4: EPA SHOULD RECOMMEND TO CONGRESS ~~AND TO OTHER FEDERAL AGENCIES (E.G., DOE, NRC, FERC, DOT)~~ NATIONAL ENERGY, TRANSPORTATION AND CLIMATE POLICIES THAT FURTHER AIR QUALITY OBJECTIVES AND SHOULD COMMENT ON FEDERAL ENERGY, TRANSPORTATION AND CLIMATE LEGISLATION THAT IMPACTS THE ENVIRONMENT.

National energy, transportation and climate ~~policy~~ legislation is inextricably intertwined with air quality. Achieving air quality objectives, therefore, requires alignment of goals between EPA and the closely related programs administered by other federal agencies (e.g., DOE, NRC, FERC, DOT). EPA should recommend to Congress ~~and the Administration~~ that they provide the necessary leadership to ensure that legislation ~~and administrative actions~~ with respect to energy, transportation and climate change also ~~promote air quality objectives~~ promotes air quality objectives. [Congress should be required to obtain EPA, DOE and/or DOT review, as applicable, of proposed legislation that would likely have a significant impact on national environmental, energy or transportation interests.] [How should the review or feedback happen? In what form? When?]

OR

[EPA should also provide feedback to Congress on proposed federal energy, transportation and climate legislation that impacts the environment. Alignment of related policy areas and air quality objectives may take many forms, but could include for example: (a) promoting wind energy by encouraging streamlined FERC licensing, nationalized energy facility siting for wind projects and Migratory Bird Treaty Act reform; (b) promoting nuclear power by encouraging ~~NRC to adopt~~ fast track permitting for a model reactor design; (c) promoting economic incentives for fuel cell development; (d) [promoting greenhouse gas legislation (e.g., multipollutant legislation that includes CO2 regulation, a carbon tax, etc.); (e) new standards to force development of more fuel efficient vehicles]; and (f) ~~new federal taxes on~~ economic (including tax) incentives or funding for less polluting activities ~~with income used to fund incentives such as~~ fuel cell development or public transportation.] [How should the review or feedback happen? In what form? When?]

[Comments:

1. **Scope and Focus:** The Alliance of Automobile Manufacturers, Ford Motor Company, National Cotton Council, and Southern Company believe this proposal goes beyond Group 3's charge by including advocacy of Climate legislation and policy. This in itself not only goes beyond Group 3's charge but beyond the scope of the AQM Subcommittee, – which indicated that coordination should take place among activities but that this group would not focus or advocate issues regarding climate issues, or advocate that EPA manage such issues – let alone propose legislative activities or policies. Michael Bradley and Leah Weiss disagreed that the proposal goes beyond the charge. Sharon Kneiss agreed with

Alliance of Automobile Manufacturers, Ford Motor Company, National Cotton Council, and Southern Company. The Alliance et al believe Proposal #4 inappropriately recommends expansion of EPA authority. Michael Bradley disagreed and said that EPA already does this to some extent, especially with regard to legislative actions. The Alliance et al also note EPA's jurisdiction is limited to the authority granted by Congress. In general, Federal agencies cannot recommend nor lobby for specific pieces of legislation. Proposal #4 clearly goes beyond the stated objective: propose ways in which the AQM framework of the future should coordinate with other programs such as land use, energy, transportation and climate. Michael Bradley suggested that it might be appropriate to reorient the proposal toward legislation.

Janet McCabe, Michael Bradley, and Mark Morford do not agree that the prohibition against EPA lobbying Congress should prevent EPA from making recommendations about changes to the CAA and other statutes. Mark believes that it is fair ground for Phase 2 of the AQM process (unlike Phase 1) to look at statutory changes.

Camille Mittelholtz expressed concern about the Group recommending statutory changes; it makes it awkward for Federal employees such as herself to serve on committees like this one.

Pam Giblin agrees with Greg Dana but has no problem generally identifying legislative impediments or roadblocks but is uncomfortable taking the next step and approaching Congress. Mark wants to make sure that the Group doesn't miss the opportunity to identify places where Federal air, energy and transportation statutes are in competition or conflict; he wants to let Congress know this.

Steve Winkelman suggested that the Group recommend EPA do an analysis of the objectives of these different statutes and see where there are conflicts.

Another idea presented was whether this proposal might be refocused to require Congress to use DOT, DOE, EPA etc. to review and assess the impacts of proposed legislation. The Alliance et al also note that "this occurs through Congressional inquiry and hearing conducted by Congress."

2. **How should this review happen, in what form, and when?:** Group 3 needs to think about these details for purposes of its next draft. Additionally, should EPA, DOT and DOE review the Transportation Bill and Energy Bill for their petroleum consumption and GHG impacts now that those bills have been signed, or should this have happened at some prior time? Janet McCabe suggested that Group 3 should address when EPA would provide the feedback, in what form, etc. She stressed that it doesn't make sense for EPA to comment on something that's a foregone conclusion, and if EPA's going to comment, they should do so in a manner and at a time when their comments can make a difference. Jerry Rousset agreed with this.

3. **Should we remove references to greenhouse gas legislation and fuel efficient vehicles?** Greg Dana commented that “NHTSA sets motor vehicle fuel economy standards, not EPA” and requested that we remove the references to greenhouse gas legislation and fuel efficient vehicle standards. Michael Bradley preferred that we include greenhouse gas legislation and fuel efficient vehicles because “the paragraph in question focuses on alignment of related policy areas with air quality objectives and simply includes examples of potential policy actions that could be considered in the future.”
4. **Economic incentives vs. taxes:** John Hornback recommended that we focus on economic incentives rather than just looking at economic “hammers” such as taxes. Leah Weiss and others agreed, however, Leah Weiss stressed that it was important to include both the incentive and the hammer concept.
5. **Inter-agency coordination/communication:** Several people suggested that better coordination among EPA’s various regional offices, and between EPA and its sister agencies such as DOE and DOT, would be beneficial. For example, should EPA, DOT and DOE FACAs be required to include representatives from sister agencies? Should a senior policy counsel of federal agencies and/or EPA HQ and regional offices be formed? Should this proposal be reworked to address this concept or should a new proposal be crafted?
6. **Transportation Planning and Conformity:** Camille Mittelholtz feels the scope of this proposal should include transportation and conformity OR that a separate proposal should be developed to address those issues.]

PROPOSAL 5: DEVELOP PROGRAMS THAT FOCUS ON REDUCING PUBLIC DEMAND FOR POLLUTING ACTIVITIES, ESPECIALLY NONESSENTIAL ACTIVITIES. SUCH PROGRAMS COULD INCLUDE INCENTIVE PROGRAMS FOR ENCOURAGE USE OF LOWER-POLLUTING ACTIVITIES, EDUCATION PROGRAMS, AND TAX AND USE RESTRICTIONS.

Most of our air quality management is directed at large scale sources of pollution, such as major industrial emitters. Although additional reductions from such sources are possible, greater reductions may be achieved by encouraging the public to reduce activities that produce pollution. [EPA’s outreach strategy should include education programs that help the public understand the impact their decisions have on air quality \(e.g., DOT/DOE’s recently-developed “Best Workplaces for Commuters” and “It all Adds Up to Cleaner Air” programs\) as well as incentive programs that encourage certain behaviors.](#) EPA should focus in particular on activities that are nonessential or which create other environmental harm in addition to air pollution. Although many impacts from such activities are felt most at the local level, efforts to influence public behavior at the local level are often unsuccessful—calling for leadership and hard decisions at the national level. For example, demand for internal combustion engines for recreation (e.g., ATVs, dirt bikes, snow mobiles, and jet skis) might be reduced through ~~taxes, programs~~ [that educate the public about the impact of idling vehicles, tax incentives that encourage use of lower-polluting recreational vehicles, \[and\] taxes that discourage use of higher-polluting recreational vehicles, \[and\] use restrictions on public lands](#) ~~or incentive programs for alternatives].~~ Similarly, energy demand might be reduced through

[programs that educate the public about energy efficient practices and public benefits and utility programs that provide funding for energy efficiency improvements.](#) (Identification and development of tools for reducing demand for polluting activities is referred to Team 2.)

[Comments:

1. **Economic incentives, education and technological solutions vs. taxes and use restrictions:** Many Team 1 members expressed concern that this proposal will be very controversial. John Hornback suggested that it is important to focus on economic incentives rather than just looking at taxes and use restrictions. Leah Weiss stressed that it is important to include both incentives and hammers. John Hornback and others suggested that we should consider removing the reference to use restrictions, as it will be highly controversial. Preference was also expressed for technological solutions over mandated rules. Janet McCabe expressed an interest in public education regarding activities such as idling and driving practices that impact air quality.
2. **Consumer products:** Janet McCabe and others asked why this proposal focuses on recreational vehicles, and asked whether other consumer products should be addressed. Lisa Gomez explained that the sub-group did discuss adding consumer products, but felt that doing so would stray beyond Issue 3. Lisa Gomez had forwarded the consumer product point on to Bob Wyman with a request that he focus on that issue in his Team 2 discussions. Team 1 was satisfied with this approach.
3. **Energy efficiency:** Jeff Genzer recommended that we expand the proposal to include public benefits programs and state and utility programs for low-income and energy efficiency projects. Genzer will provide draft language for the team to consider.
4. **DOT/EPA Programs:** Camille Mittelholtz commented that EPA and DOT have recently issued two education programs that focus on air quality implications of certain decisions – “Best Workplaces for Commuters” and “It All Adds Up To Cleaner Air.”
5. **Specific tools:** Team 2 welcomes any specific tools we may suggest for their further investigation. Please see the list of tools that Team 2 is currently pursuing. Are there any additional tools that that Group 3 should recommend?
6. **Issue Sensitivity:** Several team members expressed a concern about the group wading into sensitive issues such as activity restrictions in nonattainment areas, public lands and taxes (except tax incentives).
7. **Appropriateness of Title and Home for Proposal:** Steve Winkelman would like to revisit the proposal title – not sure it fits with group. Some concern expressed about whether the proposal belongs in this group or in the tools group. Mark Morford agreed there is a tool aspect but stated that there also is a policy aspect.
8. **Renewable Technologies:** Jerry Kotas would like to add “renewable technologies” to the second to last sentence of the proposal that begins “Similarly]”

PROPOSAL 6: NAAQS ATTAINMENT DEADLINES SHOULD BE BETTER ALIGNED WITH TRANSPORTATION SECTOR EMISSIONS CONTROLS.

~~NAAQS attainment deadlines should be better aligned with transportation sector emissions controls. The largest component of emissions reductions needed to attain the ozone NAAQS in many urban areas are new measures reducing on-road and off-road sector emissions. Those reductions are on the books, but projected to produce the needed reductions up to ten years after the NAAQS attainment dates. While this problem has been widely known for some time, recent EPA NAAQS implementation rules fail to address it. The key implementation dates for federal rules should be better integrated with the NAAQS planning and implementation dates faced by the states and localities.~~

[Comments:

1. Move Proposal to Team 1, Issue 2: Several people commented that this proposal is relevant to all regulations that are on the books but don't kick in until after attainment deadlines. Team 1 agreed that this issue gets at the fundamental AQM design. Brock Nicholson said that the Issue 2 sub-group is reconsidering the NAAQS structure in its entirety, and agreed that this proposal fit nicely with his group's work. Nicholson's sub-group will take on this proposal and will expand it beyond the transportation sector to cover all situations where a state will not attain compliance due to emission reductions that are on the books but won't occur until some time after the attainment deadline.]

PROPOSAL 7: EPA SHOULD ANALYZE THE IMPACT CLIMATE CHANGE WILL HAVE ON FUTURE AIR QUALITY OBJECTIVES.

EPA should undertake an analysis of the impact climate change will have on future air quality objectives. As part of that analysis, EPA should assess the impacts of rising temperatures, the role of particles, the influence of forest fires, and the impacts on energy demand.

[Comments: None.]

NEW PROPOSAL 7: TAKING ADVANTAGE OF EXISTING STATUORY LAWS ENCOURAGING POLLUTION PREVENTION, ENERGY EFFICIENCY AND RENEWABLE ENERGY

There is a strong case to be made that the best reading of environmental statutes would make strategies based on energy efficiency, cleaner energy, and renewable energy the means of first choice in achieving air quality objectives under the Clean Air Act. Over the years, several commenters have made the case for such an approach in response to proposed rules (See NASEO's comments on EPA's proposed NOx set aside rules for one of the more comprehensive statements advocating this approach).

For example, The Clean Air Act Amendments of 1990 clearly establish prevention as “a primary goal” of the Act (see Title I, Part A, section 101 (a) (3) and Section 101 (c)). The Act also addresses concerns of multi-media transfer of pollutants.

The Pollution Prevention Act establishes as national policy:

...that pollution should be prevented or reduced at the source whenever feasible; pollution that cannot be prevented should be recycled in an environmentally safe manner, whenever feasible; pollution that cannot be prevented or recycled should be treated in an environmentally safe manner whenever feasible; and that disposal or other release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner.

Similarly, the Energy Policy Act in Section 2108 (a) (titled Energy Efficient Environmental Program) states:

(a) PROGRAM DIRECTION- The Secretary, in consultation with the Administrator of the Environmental Protection Agency, is authorized to continue to carry out a 5-year program to improve the energy efficiency and cost effectiveness of pollution prevention technologies and processes, including source reduction and waste minimization technologies and processes. The purposes of this section shall be to--

- (1) apply a systems approach to minimizing adverse environmental effects of industrial production in the most cost effective and energy efficient manner; and
- (2) incorporate consideration of the entire materials and energy cycle with the goal of minimizing adverse environmental impacts.

Energy efficiency and renewable energy technologies and strategies which displace fossil fuel use prevent the generation of wastes, the transfer of wastes to other media, and they have the potential to do so at lower net costs than treatment-based strategies when all regulated contaminants are considered. This is particularly true when one considers that energy related mining and production is the biggest source of waste generation in the US, the second leading source of water pollution, and a major source of habitat destruction.

A complete analysis of the legal authorities available to foster energy efficiency and renewable energy strategies has not been done, nor has the environmental and economic consequences of failing to do so been comprehensively catalogued. We propose that such a paper be developed.

NEW PROPOSAL 8: EPA SHOULD WORK WITH STATE AIR AND ENERGY AND TRIBAL AGENCIES AND REGIONAL AIR QUALITY PLANNING ORGANIZATIONS TO OVERCOME POTENTIAL BARRIERS TO CLEAN ENERGY/AIR QUALITY INTEGRATION

In August 2004, EPA issued new guidance to encourage clean energy/air quality integration – “Guidance on State Implementation Plan Credits for Emission Reduction Measures from Electric-sector Energy Efficiency and Renewable Energy Measures.” To date, EPA only has approved one control measure under this guidance. The voluntary control measure, approved in an EPA Federal Register notice on May 12, 2005,³ involved the purchase of wind energy by a buying group led by Montgomery County, Maryland.

The 2004 EPA Guidance and the requirement for State Implementation Plan (SIP) revisions to meet the new 8-hour ozone standard and the fine particulate matter standard (PM 2.5) create a “window of opportunity” for clean energy/air quality integration. However, the limited precedents under the August 2004 guidance create an obstacle to aggressive adoption of energy efficiency and renewable energy measures by State and local governments in developing their SIPs. This obstacle results from several factors:

- Some States have indicated that they are unlikely to pursue energy efficiency and renewable control measures as part of their SIPs to meet the ozone and particulate matter standards because they perceive that their EPA Regional Offices will impose burdensome justification procedures and provide only limited SIP credit;
- Other States and regional planning organizations are actively considering control measures involving energy efficiency and renewable energy but they may be impeded by unforeseen interpretations of the EPA Guidance by Regional Offices;
- Many State air agencies do not realize that they need to adopt an EERE set-aside or other regulatory mechanism under their CAIR regulations in order to provide SIP credit for EERE measures for the period from 2009 forward;
- Information on the timing and amount of funding for DOE, EPA, and DOT funding of clean energy/air quality integration measures is not consolidated for easy access by State and local governments.

EPA can readily undertake actions to overcome these barriers to aggressive clean energy/air quality integration. EPA’s Office of Air Quality, Planning and Standards should work with other relevant EPA Offices (EPA Regional Offices, the Climate Protection Partnerships Division, the Office of Policy, and the General Counsel’s Office) and State and local air planning organizations to:

- Communicate with State air agencies, local planning organizations, and related non-profit organizations (ECOS, STAPPA/ALAPCO, NASEO) to determine perceived barriers to clean energy/air quality integration;
- Define a sample of EERE control measures currently under consideration by State and local agencies to meet the ozone and PM standards and anticipate and

³ 70 Fed. Reg. 24987 (May 12, 2005).

proactively work through the issues that will arise during the SIP review process; The Control Measures Workgroup of the Technical Advisory Committee of the Metropolitan Washington Air Quality Committee would be one good candidate for such proactive review since this Workgroup already has developed a large group of potential EERE measures;

- Provide outreach to EPA Regional and State officials on the interface between the CAIR regulations and EERE control measures in SIPs;
- Develop a timeline for funding solicitations by DOE, EPA, and DOT relating to clean energy/air quality, including likely eligibility, funding levels, and amount of awards and make this information available on the EPA Air Innovations web site. This suggestion was presented to EPA at the 2005 Air Innovations Conference, and EPA implementation would help overcome a major information barrier.

[OTHER COMMENTS:

1. Jeff Genzer suggested that it will be important to develop “demand response programs” because high energy demand periods result in significant air quality problems. Jeff will propose a new draft proposal that addresses this point.
2. Camille Mittelholtz will provide a draft proposal and markup for consideration.]

AQM – Team 2: Needs, Tools and Attributes

1. List of “Needs” or Problems:

A. Priority Emission Reduction Target Areas

(1) Vehicles and Engines:

(a) Issues related to vehicle and engine emissions:

- i. Insufficient turnover of existing fleets
- ii. Need to encouraging higher market penetration of clean engines and fuels
- iii. Need for greater implementation of retrofits

(b) Issues related to vehicle and engine use (i.e., vehicle miles traveled (VMT)):

- i. lack of land use planning to reduce VMT
- ii. lack of transportation planning to reduce VMT

(2) Special Under-Managed Problem Areas:

- (a) ports and goods movement (including some related on-road engines, e.g., trucks); and
- (b) airports
- (c) other federally preempted sources (e.g., railroads, ships, etc.)
- (d) agricultural emissions (including both their potential effect on PM formation and on acid deposition; includes, e.g., ammonia, dust from tillage, land clearing burning, etc.)
- (e) dust emissions

(3) Small Emitters (e.g., dry cleaners, bakeries, restaurants, etc.)

(4) Consumer Products (e.g., VOC-containing consumer products)

(5) Industrial Boilers and Other Under-Regulated Stationary Sources

B. Problems and Needs Related to Measurements (of Problem or Actions Taken) and Performance Tracking

(1) Baseline Air Quality Data

- (a) Current Disincentives - Current program discourages data development and other efforts to update the technical underpinning of attainment

SIPs. Currently, areas are penalized for discovering that their problem is worse than previously understood.

- (b) Need for More Refined Data – we need more information regarding speciation of fine particulates if we are to identify the most appropriate sources to target for controls.
- (c) Inventory Gaps – we have not yet adequately estimated emissions from many source categories, including:
 - marine emissions
 - locomotive emissions
 - off-road diesel emissions
- (d) Insufficient ambient air quality monitoring networks- lack of ambient data

(2) Hazardous Air Pollutants

- (a) limited or non-existent monitoring data;
- (b) need better risk assessment methodology that incorporates both scientific and traditional knowledge;
- (c) lack of understanding regarding levels of significance
- (d) lack of ambient thresholds; and
- (e) need more understanding of potential impact of hazardous air pollutants on sensitive populations

(3) Planning Challenges

- (a) co-benefit evaluations – we lack the tools or metrics to account properly for co-benefits of various strategies; and
- (b) difficulty of evaluating local impacts of trading programs.

C. Problems or Needs Related to Authority or Jurisdiction

- (1) Preemption – states and tribes are preempted from regulating many source categories;
- (2) Limitations – e.g., many states and tribes can't go beyond federal measures or can't regulate minor sources
- (3) International and Border Emissions
- (4) Authority and jurisdictional regulatory “patchwork” of state/local regulations versus national regulations

D. Other SIP Challenges

- (1) SIP Credit – how should credit for non-traditional strategies be allocated, including:
 - mobile source strategies (e.g., diesel reduction programs)
 - voluntary/incentive programs

E. Resources – many state, tribal and local agencies lack sufficient resources

F. Other Needs

- (1) Lack of incentives to prevent air quality problems (e.g., in attainment areas)
- (2) Conservation, both user and supplier side, including:
 - energy efficiency
 - user side behavior/choices
 - purchasing/consumption
 - mass transit

2. List of Potential “Tools:”

A. Financial Tools and Financial Demand-Side Strategies

Tax strategies (e.g., deductions, credits, accelerated depreciation, etc.)
Loans
Equity strategies
Clean air investment funds
Emission fees
Fees in lieu of offsets
Targeted rebates
Differential pricing

B. Emissions Trading Tools

Cap and trade
Open market strategies
Bubbles (e.g., by category of equipment, facility, industry, port or airport)
Plant-wide applicability limits
Mobile to stationary trading
Interpollutant trading
Risk-based trading
Reactivity-based trading

C. Information Programs, Reward Programs and Non-Financial Demand-Side Strategies

Clearinghouses for Technology, Regulations, Incentives

- Labeling (e.g., star programs, nutrition label model)
- Performance Benchmarking
- Community “green” action lists
- Surveys (e.g., impacts of personal choices)
- Frequent flyer-type programs (e.g., points for personal clean air actions)
- Web tools (e.g., info availability, personal clean air web account)

D. Planning Tools

- Permit streamlining
- Model local ordinances and guidance
- Quantification models to project impacts of land use choices
- Federal agency ombudsman for assisting local governments to identify available funds, good land use models, etc.
- Memoranda of understanding
- Remote sensing
- Monitoring tools for dealing with inventory uncertainties

E. Retrofit Strategies (other than financial incentives, which are listed separately above)

- Useful life limits on equipment
- Retrofit requirements (Super RACT)
- Minimum technology standards based on pollutant focus
- Fuel type and usage
- Operational protocol
- Compliance flexibility
- Direct regulations requiring retrofits

F. Enforcement Enhancements

- Incentives for self-certification
- Agreements between state and local governments on delegation of actions

G. Privatization Strategies (needs clarification)

H. Targeted Strategies

- Sensitive zones
- Sensitive receptors
- Time of day restrictions
- Seasonal restrictions

I. Emission Limits

3. Attributes – for evaluating and comparing tools:

DIRECT:

- A. Environmental benefits and dis-benefits (e.g., emission reductions, air quality benefits, public health benefits, cultural benefits, ecological benefits, aesthetic benefits), including a statement of which “need” is being addressed
- B. Economic impacts (e.g., cost and cost-effectiveness)
- C. Time (e.g., lead time, duration in years, continuity of benefit during day and week)
- D. Ease of monitoring and accountability

AUTHORITY, JURISDICTION AND MECHANISMS:

- E. Jurisdictional attributes (e.g., do states and tribes have necessary authority, are there limits, who would implement – business, local, state, tribe, federal, international?)
- F. Would the strategy require CAA amendment?
- G. Replicability

INDIRECT:

- H. Impact on personal choice and quality of life
- I. Benefits and dis-benefits on energy efficiency and greenhouse gas emissions

Name/Title of Tool
Name(s) of Lead(s)
Date

Brief Description of Tool:

- What is the tool/strategy and how does it work to reduce emissions?

Applicability:

- What areas and/or sources and types of emissions the tool primarily addresses?
- What needs and problems does it address?

Implementation Experience:

- Examples of how the tool/strategy may have been applied/implemented in particular jurisdictions, including results and any lessons learned

New/Additional Implementation Options and Issues:

- Other applications or ways of implementing the tool/strategy that have the potential to achieve new/additional emission reductions from what has been achieved before or in other areas
- For each new/additional application, outline the pros and cons and any barriers that may exist to implementation for that application

Outline of Tool Attributes:

For each tool/application, provide the estimated or assumed attributes for each of the following:

- a. Environmental benefits and disbenefits
Comments....
- b. Economic impacts
Comments...
- c. Time
Comments...
- d. Ease of monitoring and accountability
Comments...
- e. Jurisdictional attributes
Comments...
- f. Would tool/strategy require CAA amendment?
Comments..
- g. Replicability
Comments...
- h. Impacts on personal choice and quality of life
Comments...
- i. Benefits and disbenefits on energy efficiency and greenhouse gas emissions
Comments...

Outline for white paper on incentive grant programs to be issued by the Sub-Committee on Economic Incentives and Regulatory Innovations and Air Quality Management Sub-Committee as part of the Clean Air Act Advisory Committee

Economic Incentive Grant Programs: An effective method to reduce emissions from on-road and off-road diesel vehicles

I. Introduction

A. Overview of the challenges in reducing emissions from the Legacy Diesel Fleet

- 1. Acknowledge the work of the Clean Diesel and Retrofit Work Group**
- 2. Outline the challenges posed in reducing emissions from the legacy diesel fleet as outlined in the draft report**
- 3. Review of different types of mandates and incentives that are currently in use as introduction to state incentive grant programs to reduce diesel emissions**

II. Analysis of State Economic Incentive Programs

A. Texas Emission Reduction Program (“TERP”)

- 1. History of creation of TERP as a substitute to mandatory measures in DFW and Houston SIPS**
- 2. Discussion of the passage of SB 5 by the Texas Legislature including:**
 - a. Diesel Grant Program**
 - b. Clean Vehicle Program**
 - c. Energy Efficiency Program**
- 3. Failure of Funding of SB 5 and passage of HB 1365**
 - a. Discussion and outline of HB 1365**

4. **Analysis and discussion of TERP following HB 1365**
 - a. **Review of grant effectiveness**
 - b. **Analysis of impacts upon different diesel sectors**
 - c. **Analysis of SIP credit effectiveness**
5. **Review of most recent changes to TERP and review of program by ENVIRON**
6. **Recent projects of TERP for integration into 8-hour air quality plans**

B. Carl Moyer Program

1. **Follow outline of TERP analysis above**

III. Overview of Federal incentive program: DERA

- A. **Follow outline of TERP analysis**
- B. **Discussion of financing of state vs. federal program options**
- C. **Discussion of potential SIP impacts across the US and integration into 8-hour SIP planning**

IV. Conclusion

V. Appendices --- TERP and Carl Moyer analysis materials

A. Financial Tools and Financial Demand-Side Strategies

Tax strategies (e.g., deductions, credits, accelerated depreciation, etc.)- *Think piece to be provided by Ben Henneke*

Loans- *Region 6*

Equity strategies

Clean air investment funds- *see EIP Section 9*

Emission fees- *EIP Section 8*

Fees in lieu of offsets

Targeted rebates- *used in many places e.g. Clean Air Counts (lawn and gas can)*

Differential pricing- *see EPA's 9/97 guidance, "Opportunities to Improve Air Quality Through Transportation Pricing Projects"*

B. Emissions Trading Tools—*In general, see EIP*

Cap and trade- *EIP Section 6&7*

Open market strategies- *EIP Section 6&7*

Bubbles (e.g., by category of equipment, facility, industry, port or airport)- *EPA's 12/86 Emissions Trading Policy Statement, 51 FR 43814*

Plant-wide applicability limits – *OPAR/OAQPS to provide info*

Mobile to stationary trading- *is covered in several sections of the EIP. Start with the general guidance on OMT programs in Chapter 7.5. Development of emission quantification protocols for mobile sources in OMT programs is Appendix 16.3. Appendix 16.4 has some examples of Voluntary mobile programs. Appendix 16.10 discusses conformity, which could be an issue with mobile sources. Also would want to look at 16.11 and 16.14.*

Interpollutant trading- *see EIP Appendix 16.9*

Risk-based trading

Reactivity-based trading- *not addressed by EIP directly, but has been used by Region 6 for TX.*

AQM Team 2

Tool Assignments

- A. Financial Tools -- Greg Cooke, Greg Dana, Chuck Mueller
- B. Emissions Trading -- Mark MacLeod, Bob Gruenig, Dan Johnson
- C. Information Programs -- Michael Sheehan, Jerry Roussel
- D. Planning Tools -- Michael Bradley, Jeff Underhill, Patty Strabbing
- E. Retrofit Strategies -- Bob Gruenig, Greg Dana
- F. Enforcement Strategies-- Sharon Kneiss
- G. Privatization Strategies -- Chris Hessler, Patty Strabbing
- H. Targeted Strategies -- Pam Giblin
- I. Emission Limits -- Dan Johnson

**Addendum 1:
EPA White Paper
Preliminary Analysis of
Proposed PM 2.5 NAAQS
Alternatives**

EPA White Paper
Preliminary Analyses of Proposed PM_{2.5}
NAAQS Alternatives

Office of Air Quality Planning and Standards
Office of Air and Radiation, USEPA
Research Triangle Park, NC 27711
December 21, 2005

Purpose of the White Paper

This White Paper summarizes the results of analyses EPA has conducted as part of the process of developing a regulatory impacts analysis (RIA) that will accompany the proposed revision of the National Ambient Air Quality Standards for Particulate Matter. The analyses summarized here provide insights related to implementation of the standards, including forecasts of potential nonattainment and considerations for developing control strategies to attain the revised standards for fine particles (PM_{2.5}) and two alternatives that were proposed by EPA on December 20, 2005. Specifically, this document summarizes:

- National forecasts of air quality status with respect to the current standards, the proposed revisions and two alternatives for 2010 and 2015
- Information on the nature of the air quality problem and on the contribution from influential source categories for selected area
- Insights about the design and impacts of strategies which states may adopt to attain the proposed standards and the alternatives.

As further described at the end of this document, as EPA carried out its analysis, we discovered that the available tools and datasets were inadequate to complete a national scale analysis in time for the proposal deadline of December 20, 2005. EPA will release the RIA for the proposal in January 2006; this interim RIA, in addition to containing the full analysis underlying this white paper, will provide an assessment of the costs and benefits of the proposed standards in several selected urban areas. Complete national-scale assessment of costs and benefits will be completed in time for the final RIA (September 2006).

Alternative PM_{2.5} NAAQS analyzed

The December 20, 2005 preamble to the proposed rule provides the rationale for EPA's proposed revisions to the primary PM_{2.5} NAAQS and as well as other alternatives on which the Agency is requesting comment. In our analyses, we have selected a subset of options designed to encompass the range of alternative standards upon which the Agency is requesting comment. This analysis examines the current standards and 3 alternatives in depth. The alternatives analyzed are summarized in following table as combinations of the annual and daily PM_{2.5} standards:

Table 1: Annual and Daily PM_{2.5} NAAQS Considered in This Analysis

<i>Combination of Annual and Daily Values, in $\mu\text{g}/\text{m}^3$</i>	<i>Notes</i>
15/65	Current standards
15/35	Proposed Revisions
14/35	Alternative for comment
15/30	Alternative for comment

Future-year Predictions of PM_{2.5} Concentrations and Attainment under Alternatives

Overview of methodology and uncertainties

As part of a recent assessment of multi-pollutant legislative approaches (<http://www.epa.gov/airmarkets/mp>), EPA analyzed the combination of the all of the major national regional, regional, and state regulatory programs that affect the principle sources of fine particles and ozone. The Clean Air Interstate Rule (CAIR), the Clean Air Mercury Rule (CAMR), and the Clean Air Visibility Rule (CAVR), promulgated in 2005, affect utility emissions. CAVR also applied to industrial boiler emissions. National mobile rules for light and heavy-duty vehicles and non-road mobile sources were also included. Current state programs that address these and other source categories that were on the books as of early 2005 are also modeled for future years. In addition to forecasting emissions, EPA analyzed projected annual PM_{2.5} concentrations using the CMAQ model. The assumptions and specific approaches are described in supporting documentation available at the web address above. EPA further processed these results to estimate the 98 percentile 24-hour values associated with these forecasts.¹ Staff then compared these air quality projections with the current, proposed, and alternative revised PM_{2.5} standards.

The air quality modeling system (i.e., emissions, meteorology, and models) and our projection technique provide estimates of both daily and annual PM_{2.5} concentrations for future year emissions scenarios. It is important to summarize the strengths and limitations of this system:

- EPA's modeling system has been extensively peer reviewed and represents the state of the science in terms of the formation and fate of PM_{2.5} in the atmosphere.
- Overall, the model performs well in predicting monthly to seasonal concentrations, similar to other recent model applications for PM_{2.5}. The model is less well suited to predicting 24-hour values.
- For the proposal RIA, we used an interim projection methodology based on quarterly average species concentrations to calculate the projected daily average PM_{2.5} concentrations. The lack of a more refined peak concentration relative factor to predict changes in daily peaks may introduce additional uncertainty in the daily average projections. We intend to improve the methodology for the final rule RIA.
- Because we project future year concentrations by translating the projected relative change in PM_{2.5} species into projected changes in ambient measurements, the magnitude of future year concentrations is tied to the magnitude of current measurements. This approach is intended to mitigate, to some extent, situations in which the model over/under predicts concentrations compared to ambient measurements.
- In general, model performance is better for the eastern U.S. than for the West. The model performs well in predicting the formation of sulfates, which are the dominant species in the East. It does not perform as well for nitrates and carbon, which are the dominant species in the West. Therefore, we have greater confidence in our projections in the East.

¹ For a description of the methodology that EPA used to derive these 98th percentile 24-hour values, please see the forthcoming Regulatory Impact Analysis for the proposed PM_{2.5} NAAQS.

- There are known uncertainties in the state of the science regarding the formation of secondary organic carbon, as well as with the techniques for measuring carbon and primary emissions of organic carbon. These uncertainties affect the model's ability to properly predict organic carbon concentrations and the effectiveness of VOC controls for reducing carbon particles.
- A number of factors affect the extent to which the modeling system can properly characterize attainment/nonattainment associated with localized concentrations and the benefits of local control measures.
 - Our current PM_{2.5} modeling system is applied with a geographic resolution of 36 x 36 km. At this scale, it is difficult to resolve local, urban scale gradients in PM_{2.5} due to a lack of resolution of meteorological conditions and emissions.
 - The underlying emissions inventories used in our modeling system are derived from the EPA's National Emissions Inventory, which includes a mix of State-supplied and EPA generated data. The uncertainties in these data, especially in terms of the overall magnitude of emissions of primary particles from stationary and mobile sources, spatial allocation of area and other source categories, and the relative split of emissions into PM_{2.5} species, limit our ability to properly determine the relative effectiveness of emissions reductions across different spatial scales and among different source categories.
- Additional uncertainty is introduced through our future year projections of emissions due to unrefined growth rates and limited information on the effectiveness of control programs.

Summary of Attainment Analyses

Table 2 summarizes the results of these analyses in terms of the projected numbers of counties with monitors that would not attain the standards alternatives under the same CAIR/CAMR/CAVR/Mobile base case scenario for two forecast years, 2010 and 2015. This is not a forecast of the air quality EPA would expect to occur in these years, because the baseline analyzed contains only current programs, and not the additional reductions that will be made in response to State Implementation Plans designed to meet the current PM NAAQS. These State Implementation Plans are due in April 2008. The Clean Air Act presumptively requires each area to attain the current PM_{2.5} standards within 5 years of designation, by 2010, with authority for EPA to grant a state an attainment date extension of up to an additional 5 years for specific areas.

This baseline scenario analyses shows that EPA's recently promulgated CAIR/CAVR/CAMR program, mobile source regulations, and current state and local programs would make significant contributions to reducing projected PM_{2.5} nonattainment in the eastern US under any of the standards alternatives analyzed, as compared to current air quality levels. EPA modeling indicates that by 2010, 77 of the 116 areas currently not attaining the existing PM_{2.5} standards will come into attainment just based on regulatory programs already in place, including CAIR/CAMR/CAVR and other federal measures. Seven more PM_{2.5} areas are projected to attain the existing standards by 2015 based on the implementation of these programs. All areas in the eastern United States will have lower PM_{2.5} concentration in 2015

relative to present-day conditions. In most cases, the predicted improvement in PM_{2.5} ranges from 10% to 20%.

The series of four sets of maps that follow provide further details of the current, proposed and alternative PM NAAQS attainment analyses results. The first maps in each set show the counties that would attain and would not attain the standards alternative in 2010 and 2015 under the baseline scenario summarized above. The maps are color coded to depict whether annual (orange), daily (yellow) or both NAAQS (red) would not be met and which counties would have not met the standards based on recent PM_{2.5} data, but come into attainment under the baseline scenario (gray).

Table 2. Summary of County Nonattainment Counts: Current and Projected 2015

<i>Standard Options</i>	<i>Current</i>			<i>Projected with CAIR/CAVR/CAMR*</i>		
	National	East	West	National	East	West
15/65—current standard	116	102	14	32	18	14
15/35	191	141	50	76	30	46
14/35	235	185	50	96	50	46
15/30	326	264	62	178	116	62

* See Technical Support Document for details on projection method used here (i.e., Speciated Modeled Attainment Test--SMAT). [[Will be placed in the docket upon signature]]

The third map for each alternative provides a quantitative estimate of how much each area would exceed the daily/annual standards in 2015, after the implementation of the baseline programs, but before considering State programs designed to attain the current standards. The results in the table and maps indicate some regional differences in the relative impact of the proposed and alternative standards, in terms of numbers of residual non-attainment areas as well as increment above the standards levels:

- As compared to the current standards, the proposed tighter daily standard of 35 ug/m³ appears to have a bigger impact in the West than in the East, particularly after the forecast CAIR/CAMR/CAVR controls are more fully implemented. Most of the eastern counties that would not attain the standard in 2015 are part of nonattainment areas that are required to adopt further controls under the current standards. The increment above the standard is generally below 5 ug/m³.
- By contrast, most of the counties that would not attain the proposed daily standard in the northwestern quadrant of the US currently attain the annual and 24-hour NAAQS. These areas have lower annual averages, but can have high daily peaks during the winter months with more inversions as well as emissions from heating. The increment above the daily standard varies from under 7 ug/m³ to less than 3 ug/m³ in this region.
- The analysis of an annual standard of 14 ug/m³ showed 235 counties out of attainment for both 24 hour and annual, 139 in attainment with both in 2015. The major effect of moving from the proposed alternative to a tighter annual standard of 14 ug/m³ is observed

in the East, adding 20 more counties not meeting the alternative in 2015 to total 27. This alternative increases by 1 ug/m³ the increment above the annual NAAQS in all 32 counties forecast not to attain the current NAAQS.

- The move from the proposed alternative to a tighter 24 hour standard produces a substantially larger number of nonattaining counties nationwide than the tighter annual alternative above. At this concentration, the daily standard is projected to be controlling for most areas.

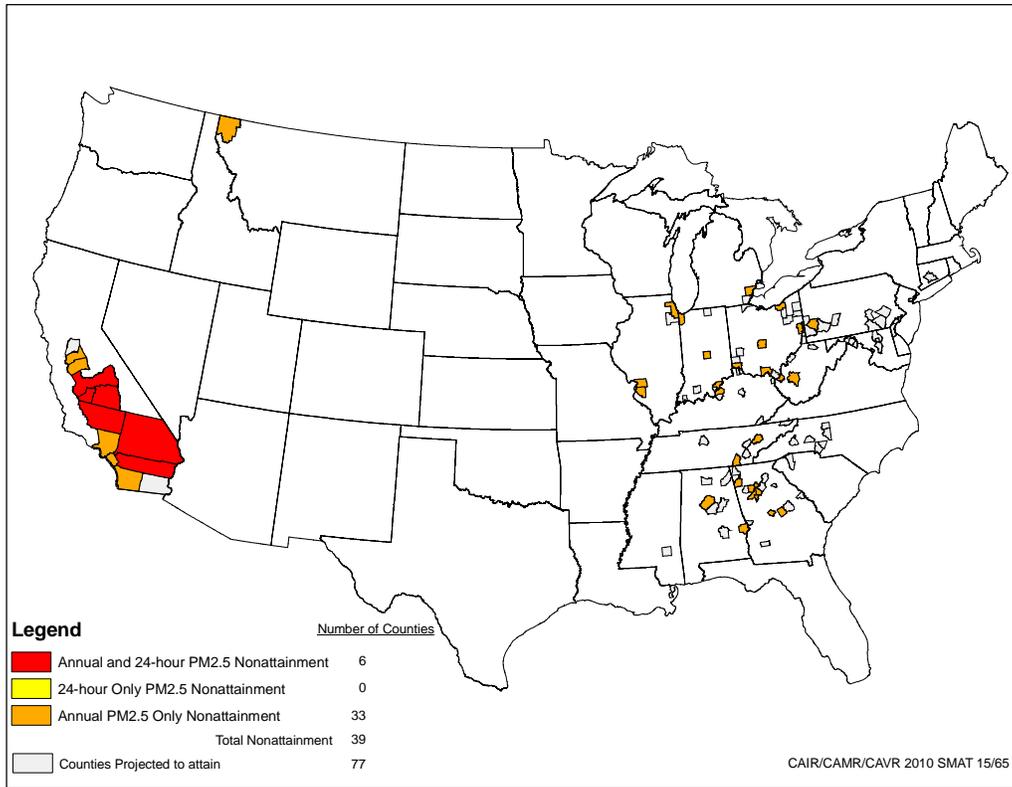


Figure 1: Counties Exceeding the PM_{2.5} NAAQS under 2010 Base Case Scenario: Annual 15 µg/m³ and 24-Hour 65 µg/m³ (current standards).

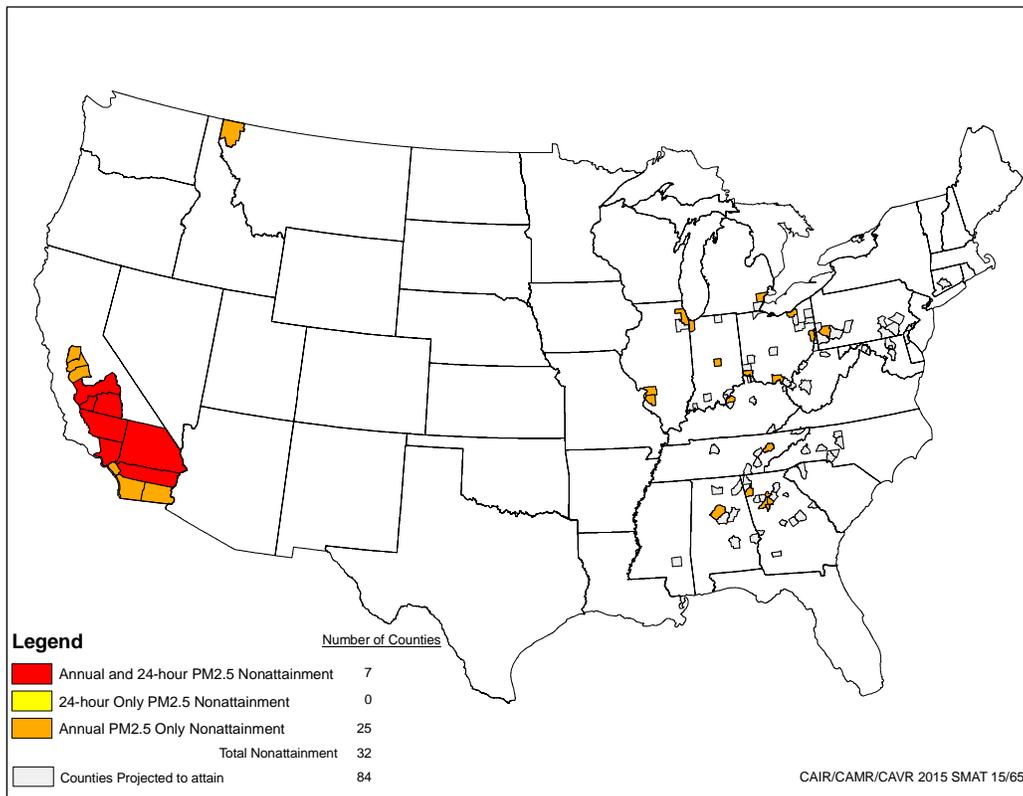


Figure 2: Counties Exceeding the PM_{2.5} NAAQS under 2015 Base Case Scenario: Annual 15 µg/m³ and 24-Hour 65 µg/m³ (current standard).

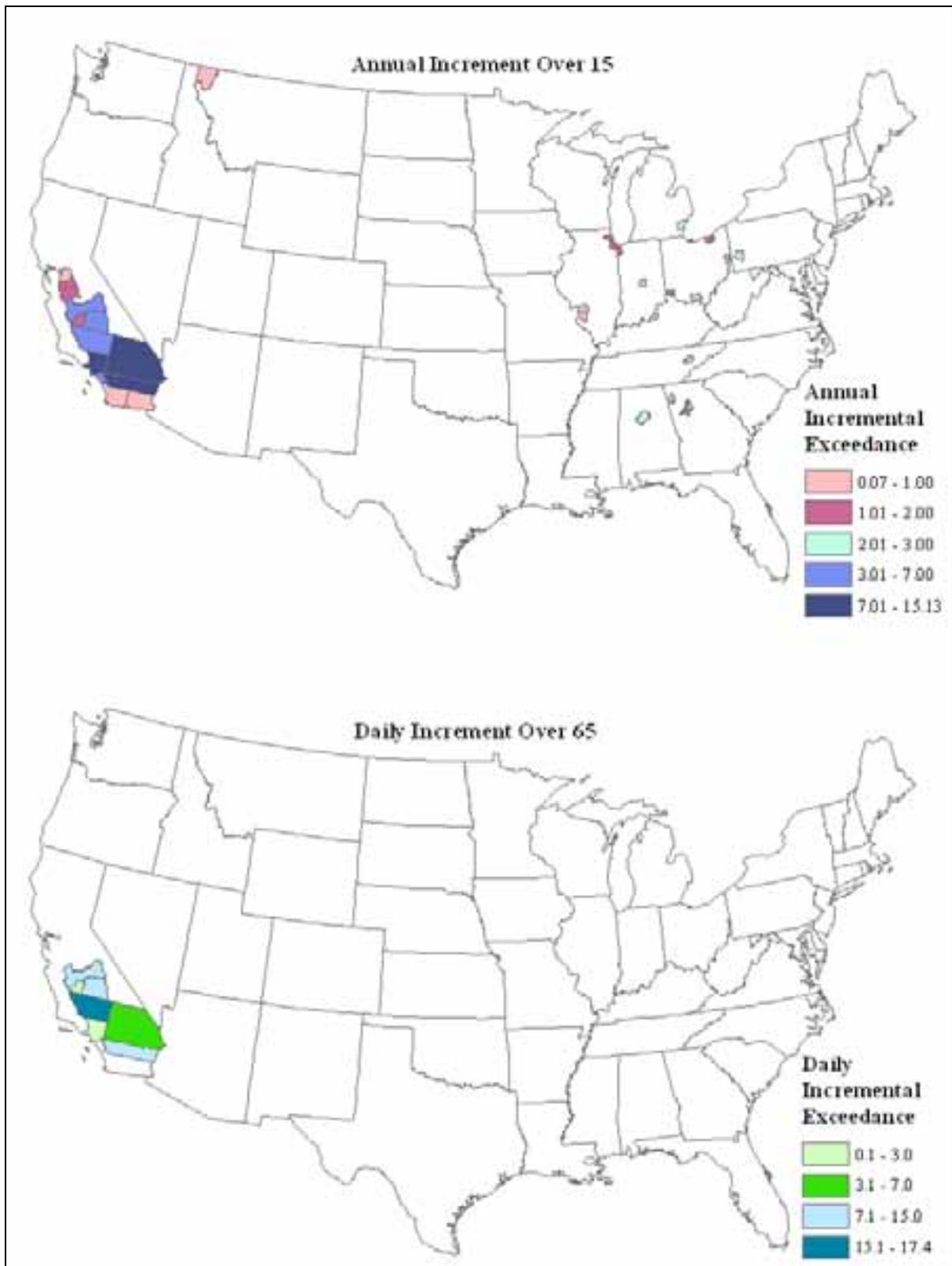


Figure 3: Increment by which projected non-attainment counties exceed the annual or daily standard for the 15/65 standard option in 2015.

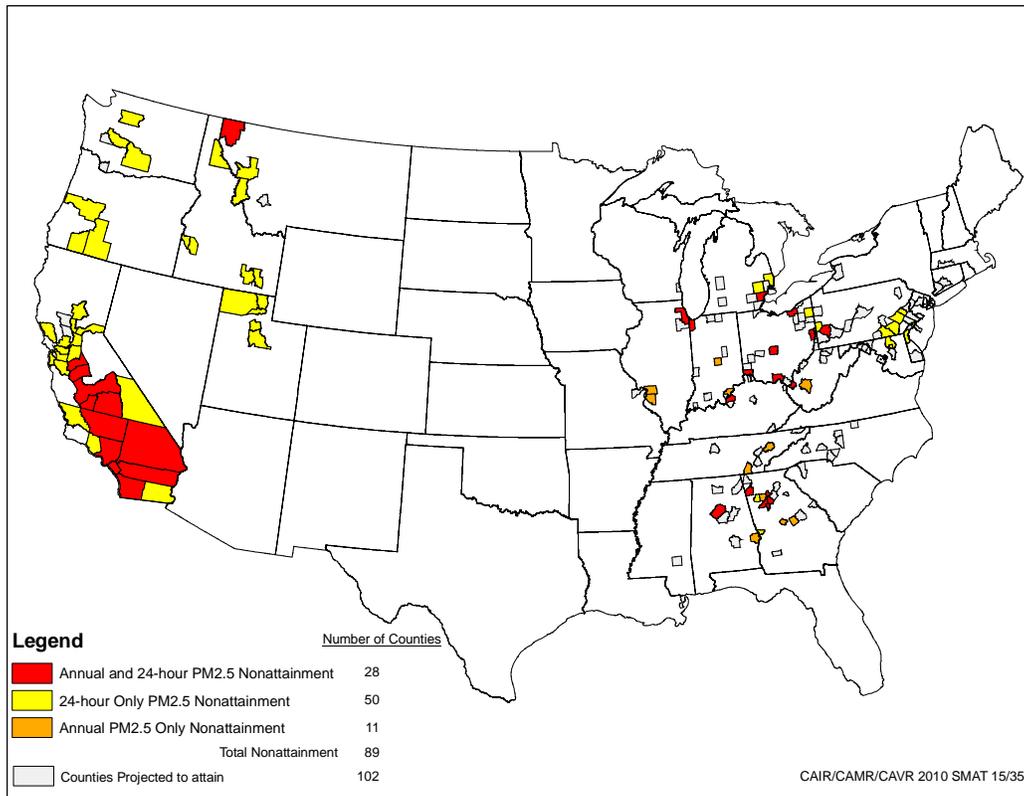


Figure 4: Counties Exceeding the PM_{2.5} NAAQS under 2010 Base Case Scenario: Annual 15 µg/m³ and 24-Hour 35 µg/m³ (Proposed Revised NAAQS)

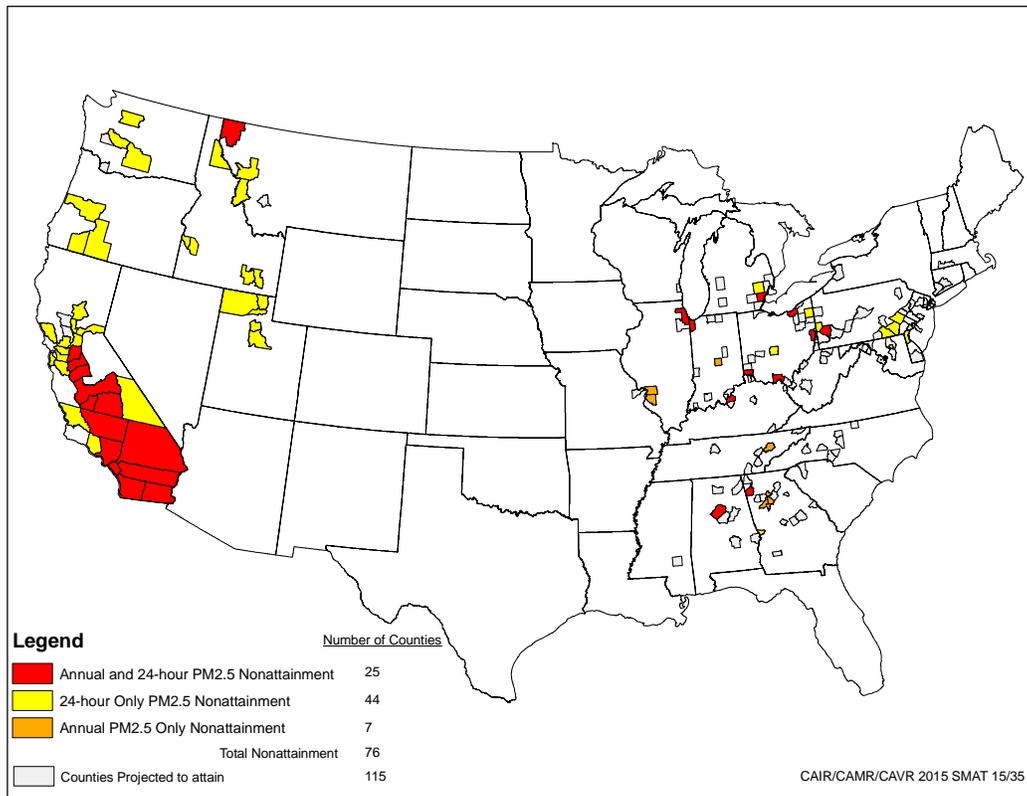


Figure 5: Counties Exceeding the PM_{2.5} NAAQS under 2015 Base Case Scenario: Annual 15 µg/m³ and 24-Hour 35 µg/m³ (Proposed Revised NAAQS)

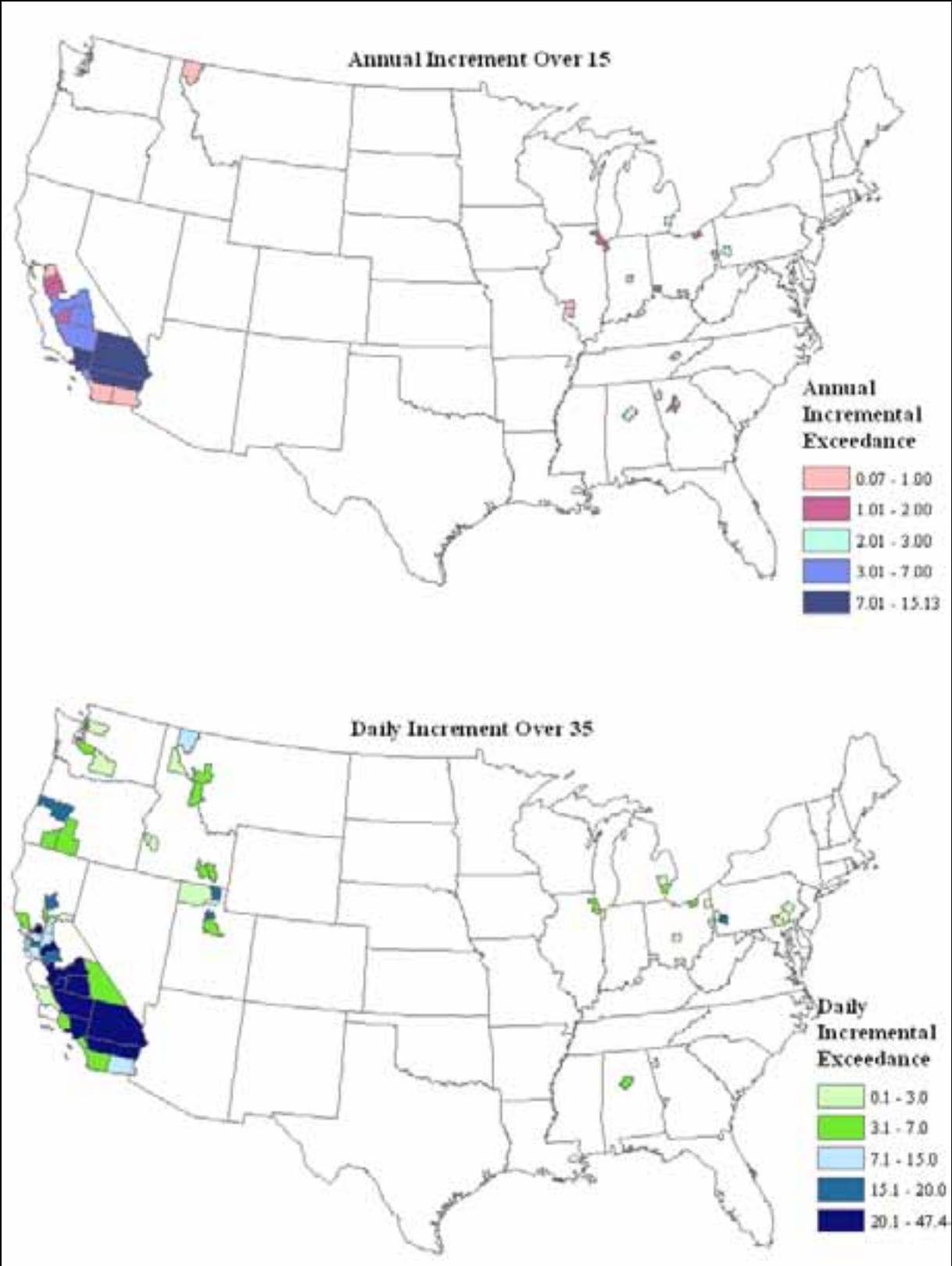


Figure 6: Increment by which projected non-attainment counties exceed the annual or daily standard for the 15/35 proposal in 2015.

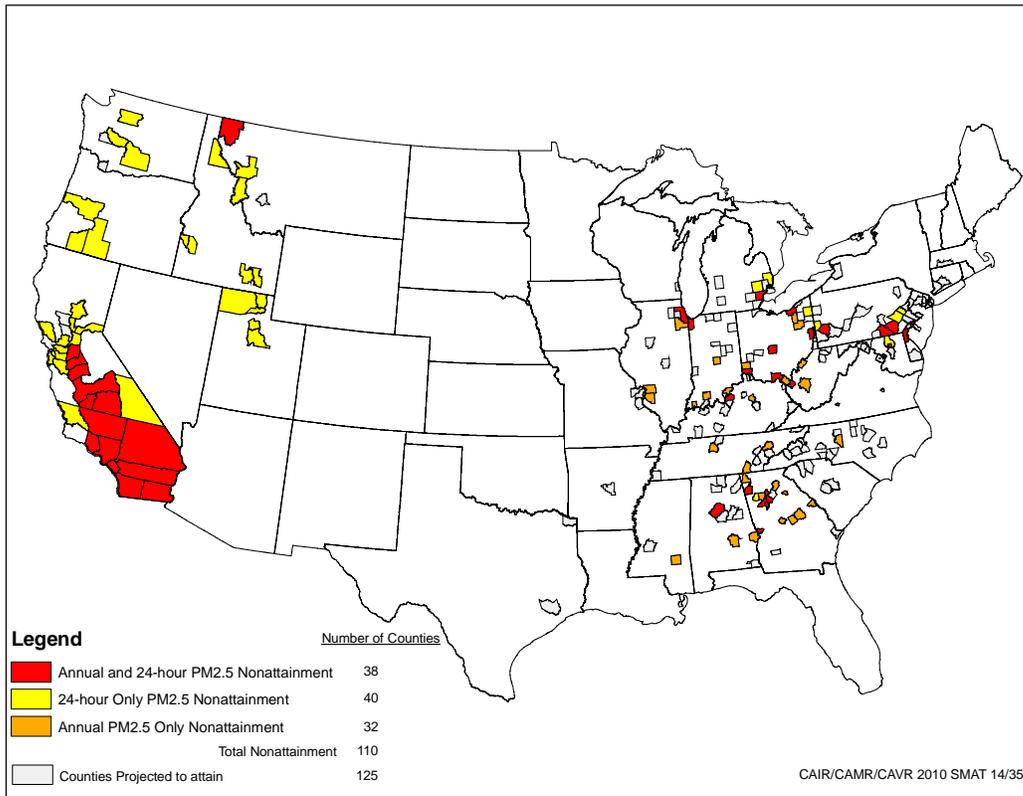


Figure 7: Counties Exceeding the PM_{2.5} NAAQS under 2010 Base Case Scenario: Annual 14 µg/m³ and 24-Hour 35 µg/m³ standards option

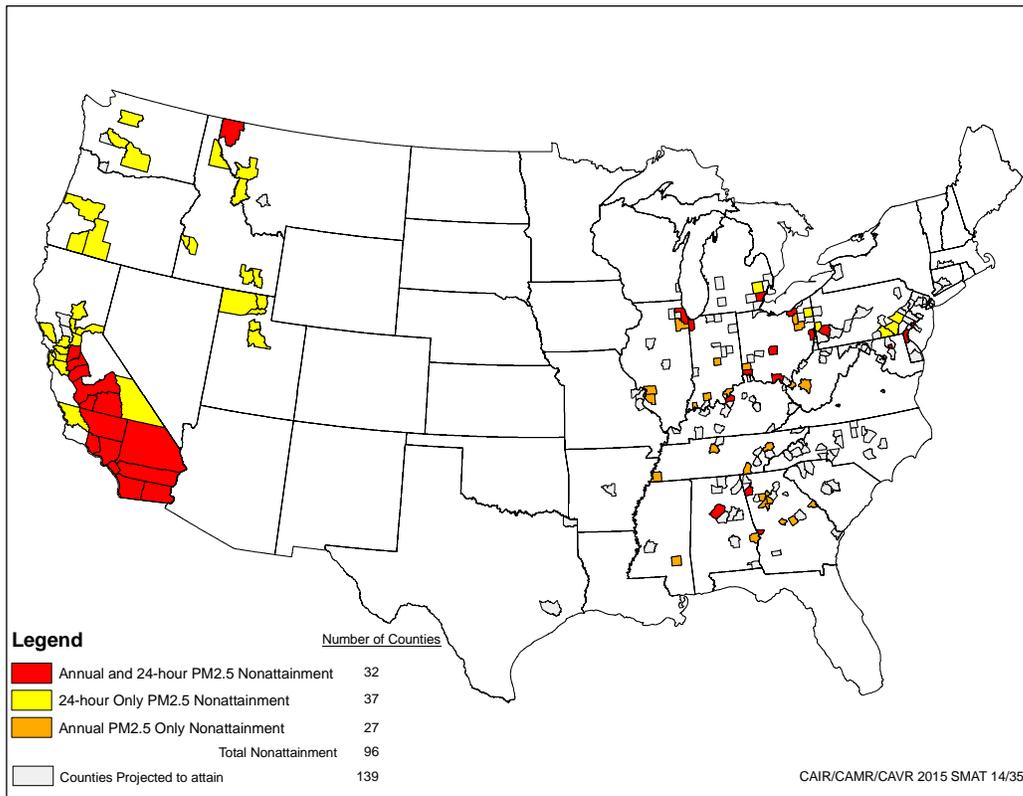


Figure 8: Counties Exceeding the PM_{2.5} NAAQS under 2015 Base Case Scenario: Annual 14 µg/m³ and 24-Hour 35 µg/m³ standards option

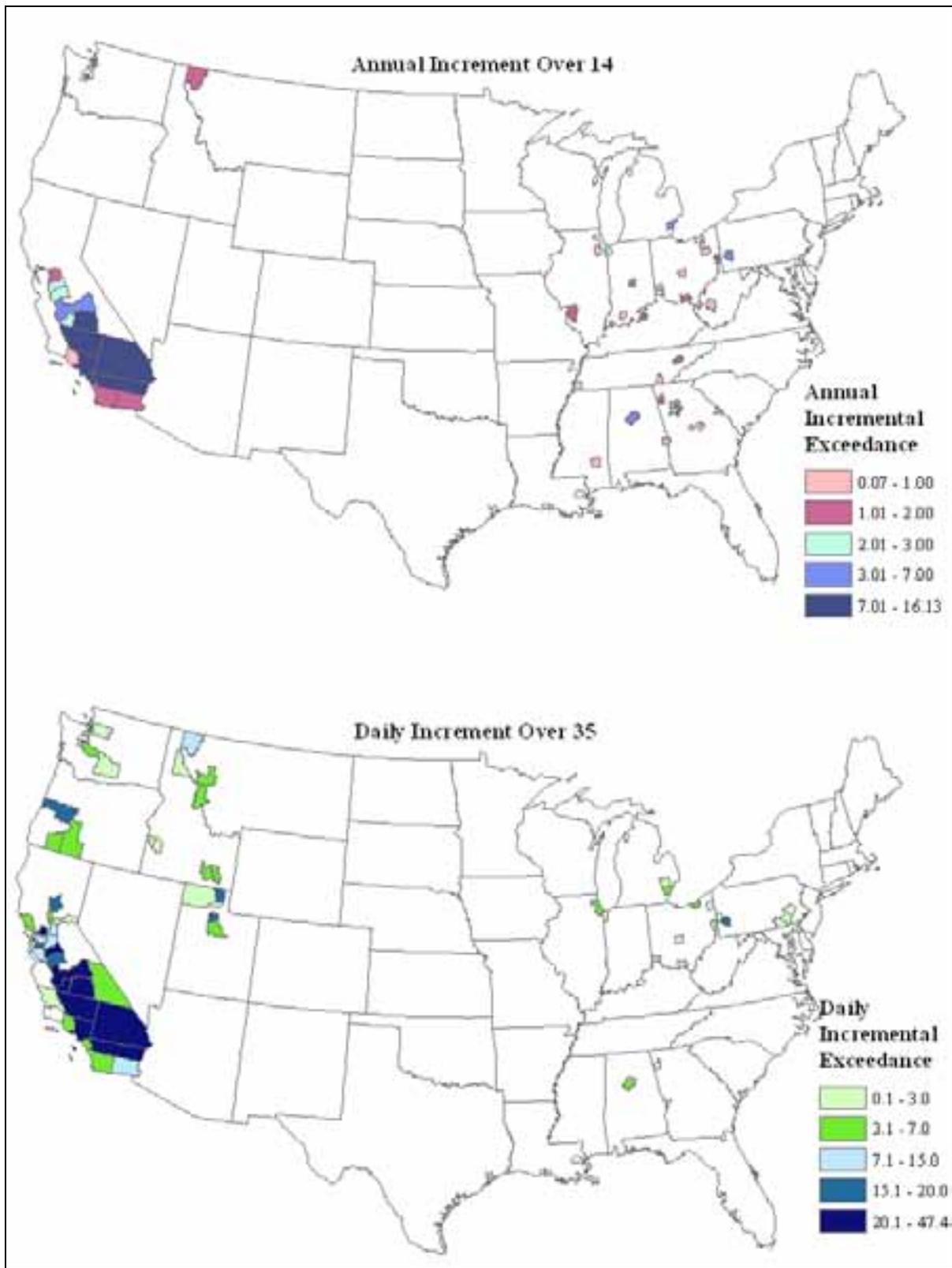


Figure 9: Increment by which projected non-attainment counties exceed the annual or daily standard for the 14/35 standards option in 2015.

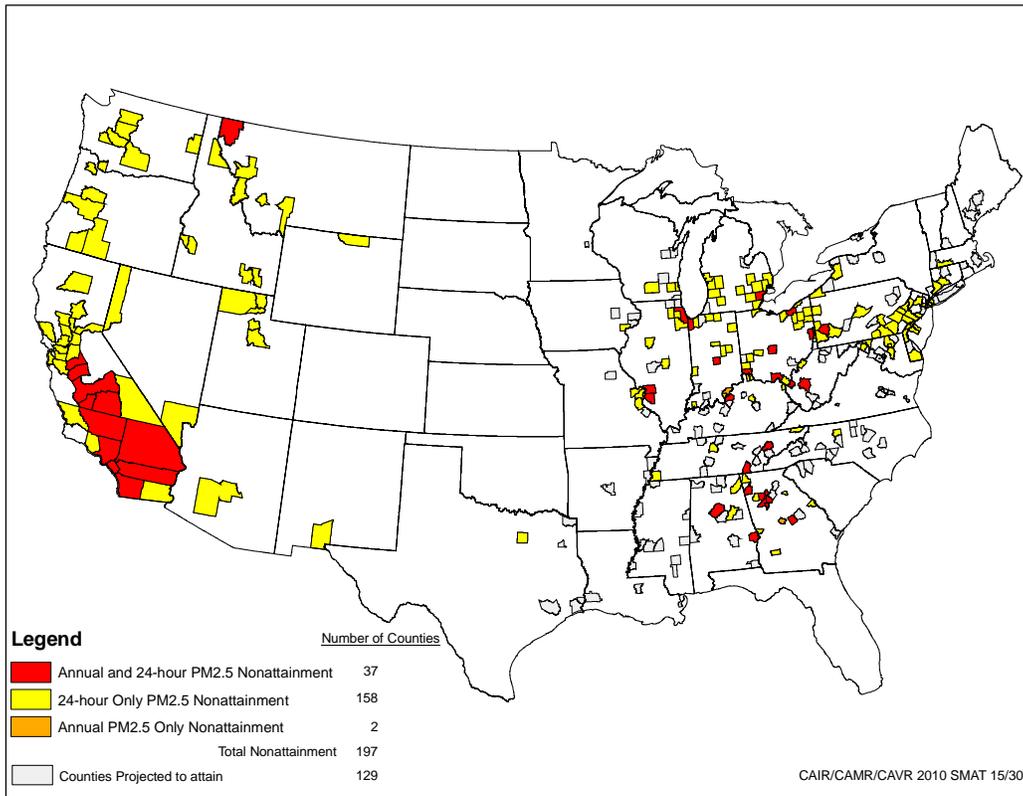


Figure 10: Counties Exceeding the PM_{2.5} NAAQS under 2010 Base Case Scenario: Annual 15 µg/m³ and 24-Hour 30 µg/m³ standards option

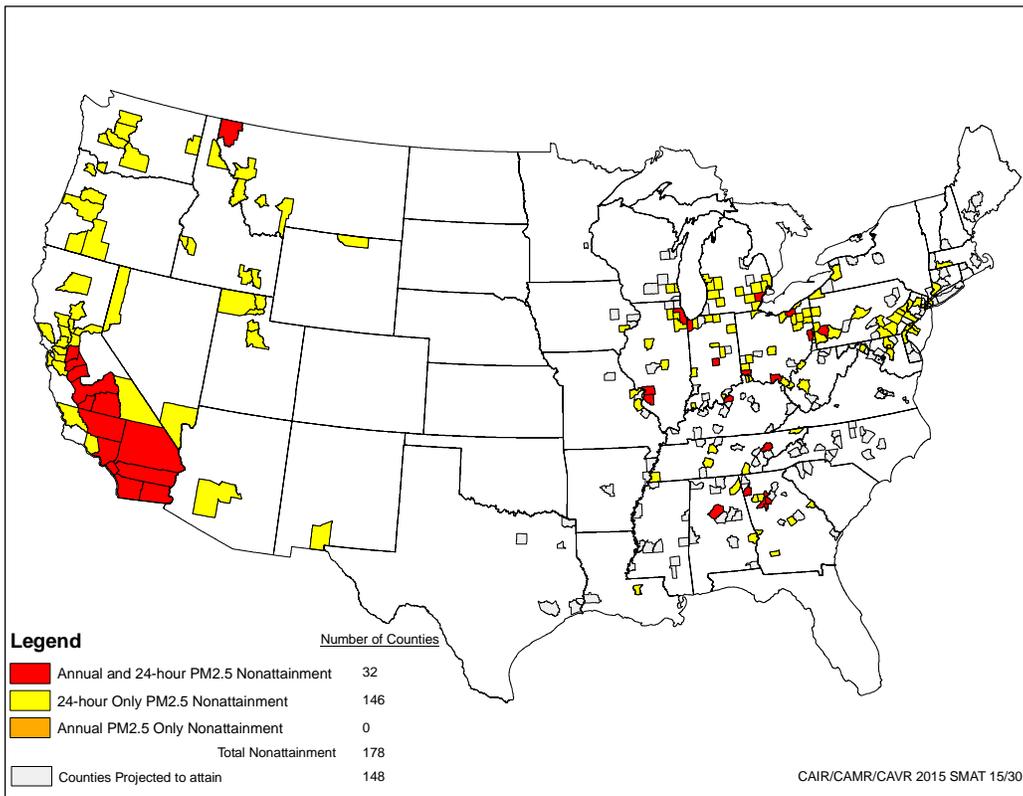


Figure 11: Counties Exceeding the PM_{2.5} NAAQS under 2015 Base Case Scenario: Annual 15 µg/m³ and 24-Hour 30 µg/m³ standards option

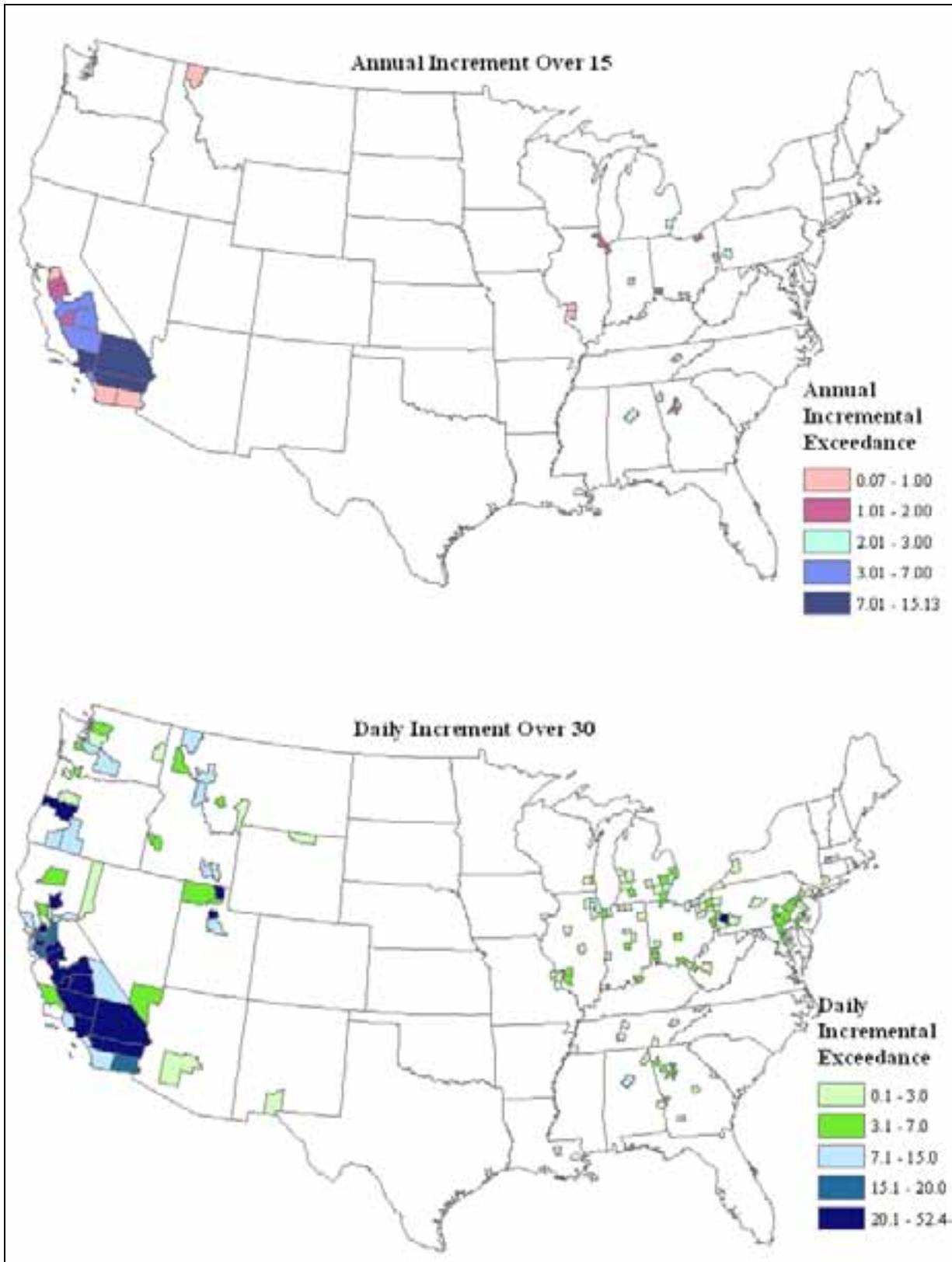


Figure 12: Increment by which projected non-attainment counties exceed the annual or daily standard for the 15/30 standard option in 2015.

Characterizing Fine Particles: Implications for Control Strategy Development

The discussion above summarized the our projections of the extent of non-attainment after baseline reductions in electric generation, mobile, and other sources are considered in the context of overall economic growth. The next portion of this White Paper discusses the nature of the PM_{2.5} problem today, outlining what is known about the relative importance of regional and localized sources in various areas of the nation component. This assessment finds significant regional and local differences between the eastern and western portions of the nation, in part. This difference was, of course, recognized in the CAIR program, which focused on the East where sulfates and nitrates from utilities were judged to be a significant contribution to PM_{2.5} levels. The following analysis examines differences in the local sources and composition in different areas by providing results from 4 cities, Chicago, Seattle and the San Joaquin Valley of California, and New York City (Figure 13). Chicago and New York are eastern cities that we project, respectively, come close to attaining or attain the proposed PM_{2.5} NAAQS through the basecase controls in 2015 and will have to take further local action to attain through their State Implementation Plans. Seattle is a western city whose remaining PM_{2.5} air quality problem in 2015 is weighted towards local and regional sources of carbon. San Joaquin is a western city that has PM_{2.5} levels well above the proposed standards and would therefore have a difficult challenge in reaching attainment.

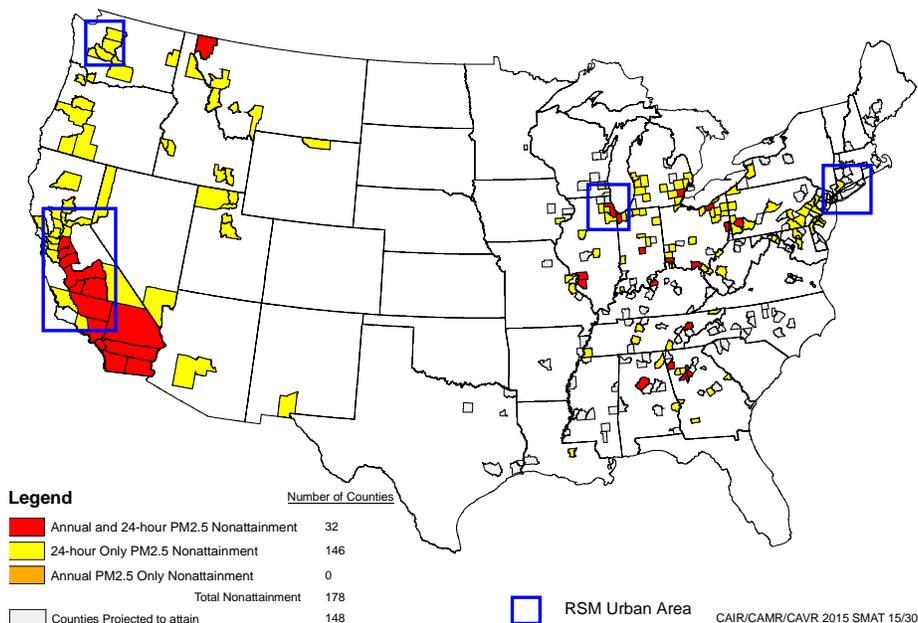


Figure 13: Urban Areas of Interest for this White Paper

Nature of the PM_{2.5} Air Quality Problem

Particulate matter (PM) is a highly complex mixture of solid particles and liquid droplets distributed among numerous atmospheric gases that interact with solid and liquid phases. Particles span many sizes and shapes and consist of hundreds of different chemicals. Particles are emitted directly from sources and also are formed through atmospheric chemical reactions and often are referred to as primary and secondary particles, respectively. Particle pollution also varies by time of year and location and is affected by several aspects of weather, such as temperature, clouds, humidity, and wind. Further complicating particles is the shifting between solid/liquid and gaseous phases influenced by concentration and meteorology, especially temperature. Unlike daily ozone levels, which are usually elevated in the summer, daily PM_{2.5} values at some locations can be high at any time of the year. For example, in Seattle, the highest levels of PM_{2.5} concentrations occur during the winter months and are composed of carbon particles associated with wood and waste burning. Likewise, in Chicago, elevated levels of PM_{2.5} were observed in 2003 during the colder months of February, March and April.

Our focus here is on “fine particles” classified as PM_{2.5}, which have total particle size less than 2.5 micrometers. The major PM_{2.5} components, or species, are carbon, sulfate and nitrate compounds, and crustal/metallic materials such as soil and ash. The different components that make up particle pollution come from specific sources and are often formed in the atmosphere. Particulate matter includes both “primary” PM, which is directly emitted into the air, and “secondary” PM, which forms indirectly from fuel combustion and other sources. Primary PM consists of carbon (soot)—emitted from cars, trucks, heavy equipment, forest fires, and burning waste, , and coke ovens, metals from coal combustion and industrial processes, —and crustal material from unpaved roads, stone crushing, construction sites, and metallurgical operations. Secondary PM forms in the atmosphere from gases. Some of these reactions require sunlight and/or water vapor. Major secondary particles include:

- Nitrates formed from nitrogen oxide emissions from cars, trucks, and power plants
- Carbon formed from reactive organic gas emissions from cars, trucks, industrial facilities, forest fires, and biogenic sources such as trees.
- Sulfates, most of which come from atmospheric reactions of SO₂. Near strong sources, directly emitted sulfates and sulfur trioxide can be significant. Direct (or primary) sulfate emissions can come from sources such as power generation facilities and industries which burn residual oil.
- Ammonia from sources such as fertilizer and animal feed operations contributes to the formation of sulfates and nitrates that exist in the atmosphere as ammonium sulfate and ammonium nitrate. Note that fine particles can be transported long distances by wind and weather and can be found in the air thousands of miles from where they were formed.

The chemical makeup of particles varies across the United States (as shown in Figure 14). For example, fine particles in the eastern half of the United States contain more sulfates than those in the West, while fine particles in southern California contain more nitrates than other areas of the country. Carbon is a substantial component of fine particles everywhere. Note that particle mass and composition can vary substantially by season, so annual averages should not be considered representative of specific high PM_{2.5} days.

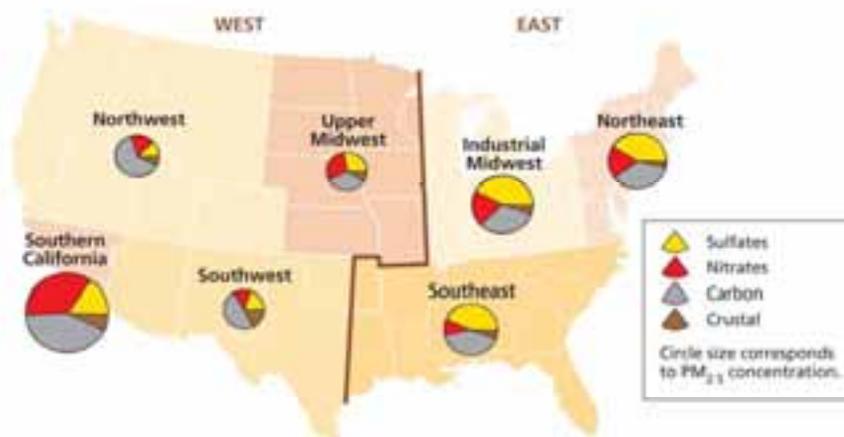


Figure 14. Average PM_{2.5} composition in urban areas by region, 2003.

Figure 14 shows the differences in aggregated urban PM_{2.5} species composition across seven regions of the United States. Figures 15 through 18 show variation in composition for both annual and daily PM_{2.5} measures for 2003 for specific urban areas we are focusing on for illustration. For each area, the composition of the annual average differs somewhat from the average of the top 15 highest concentration days but is generally similar. The composition on the maximum concentration day can vary significantly from the annual and 15 highest day averages. This difference can be attributed to variation in source emissions and meteorological influences, e.g. temperature, wind direction and wind speeds. For Seattle, carbon dominates the PM_{2.5} composition for annual average and average of the top 15 days; however, the worst day has more sulfate and nitrate contributions (Figure 15). In Seattle, residential wood and waste burning are the largest primary PM_{2.5} contributors to the highest daily values at one monitor but a large kraft paper mill appears to be the largest contributor to daily values at another monitor. In Chicago, the sulfate and nitrate contributions to high daily values are mostly from regional point and areas sources, i.e., sources outside of the urban area. Nitrate, sulfate and total carbon each contribute significantly to PM_{2.5} composition, whereas on the highest day, nitrate contributes a larger percentage, i.e., 46 percent vs. 27 percent (Figure 16). The average top 15 highest days reflects a sulfate and nitrate mass content of 9.3 $\mu\text{g}/\text{m}^3$ and 7.5 $\mu\text{g}/\text{m}^3$, respectively. In Fresno, total carbon and nitrate largely dominate the PM_{2.5} composition for 2003 (Figure 17). For the highest PM_{2.5} day in 2003, nitrate (33 $\mu\text{g}/\text{m}^3$) contributes a larger share than for the annual average (6.7 $\mu\text{g}/\text{m}^3$) or average of the top 15 highest days (20.7 $\mu\text{g}/\text{m}^3$). As is the case in a

number of eastern areas, New York City PM_{2.5} composition is significantly dominated by sulfate (Figure 18), particularly on the worst day. The highest concentration day in 2003 shows a sulfate and total carbon contribution of approximately 60% and 33%, respectively. The air quality modeling projections above predicts that sulfates will comprise approximately 50% of total PM_{2.5} mass for 2015. Further detail on future-year speciation for NY and other urban areas may be found in the RIA. The annual average and average of the top 15 highest concentration days reflects a nitrate contribution of approximately 20%.

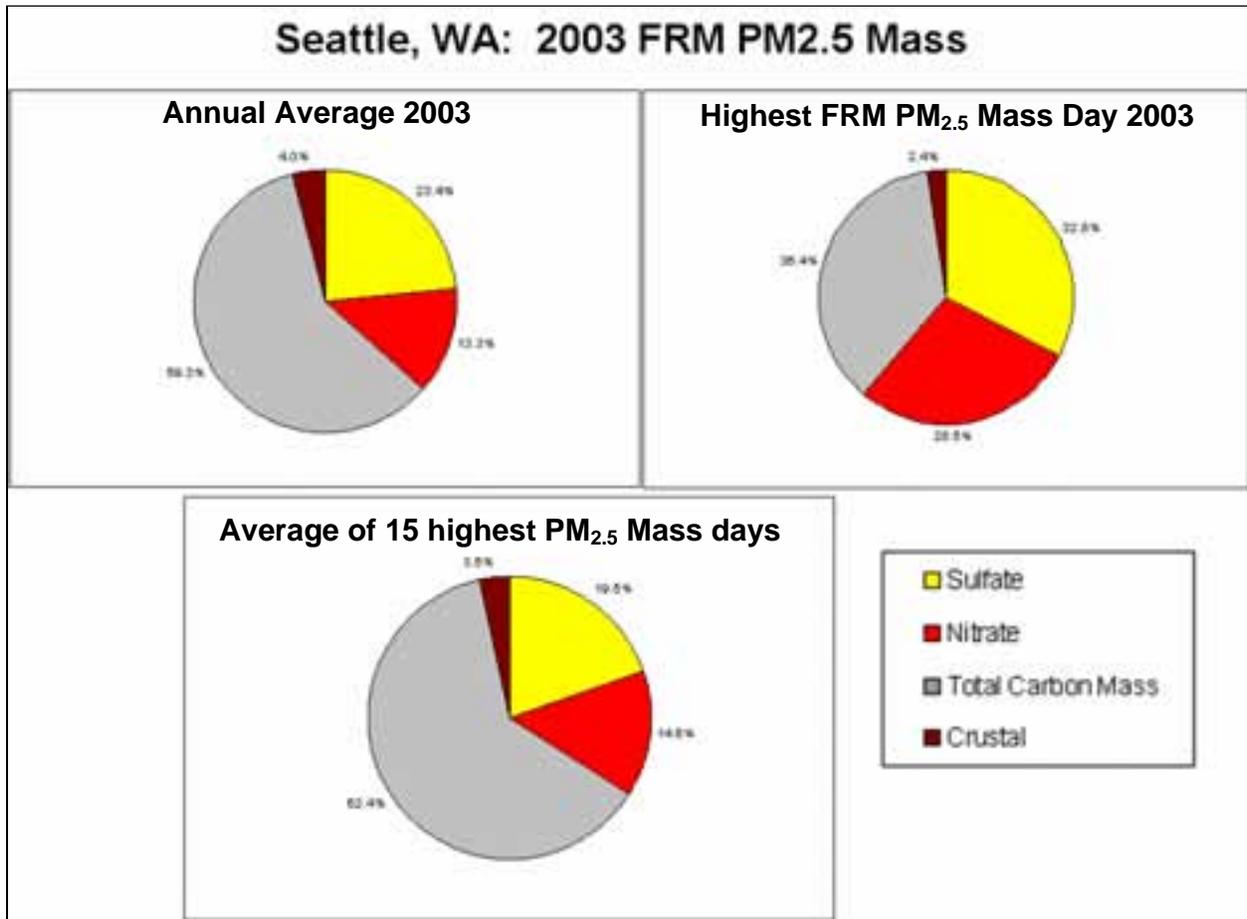


Figure 15. 2003 Daily PM_{2.5} mass and speciation patterns for Seattle, WA.

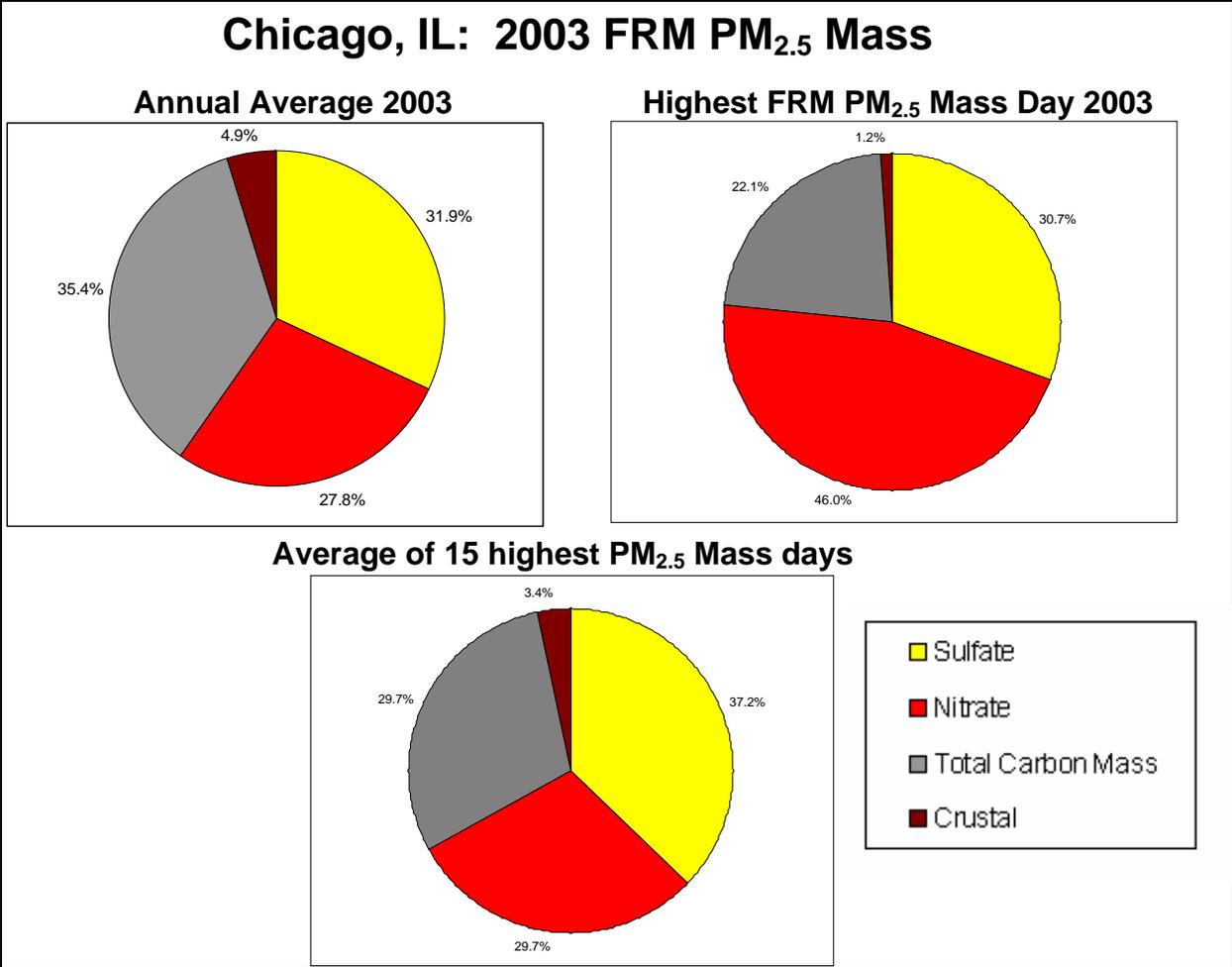


Figure 16. 2003 Daily PM_{2.5} mass and speciation patterns for Chicago, IL.

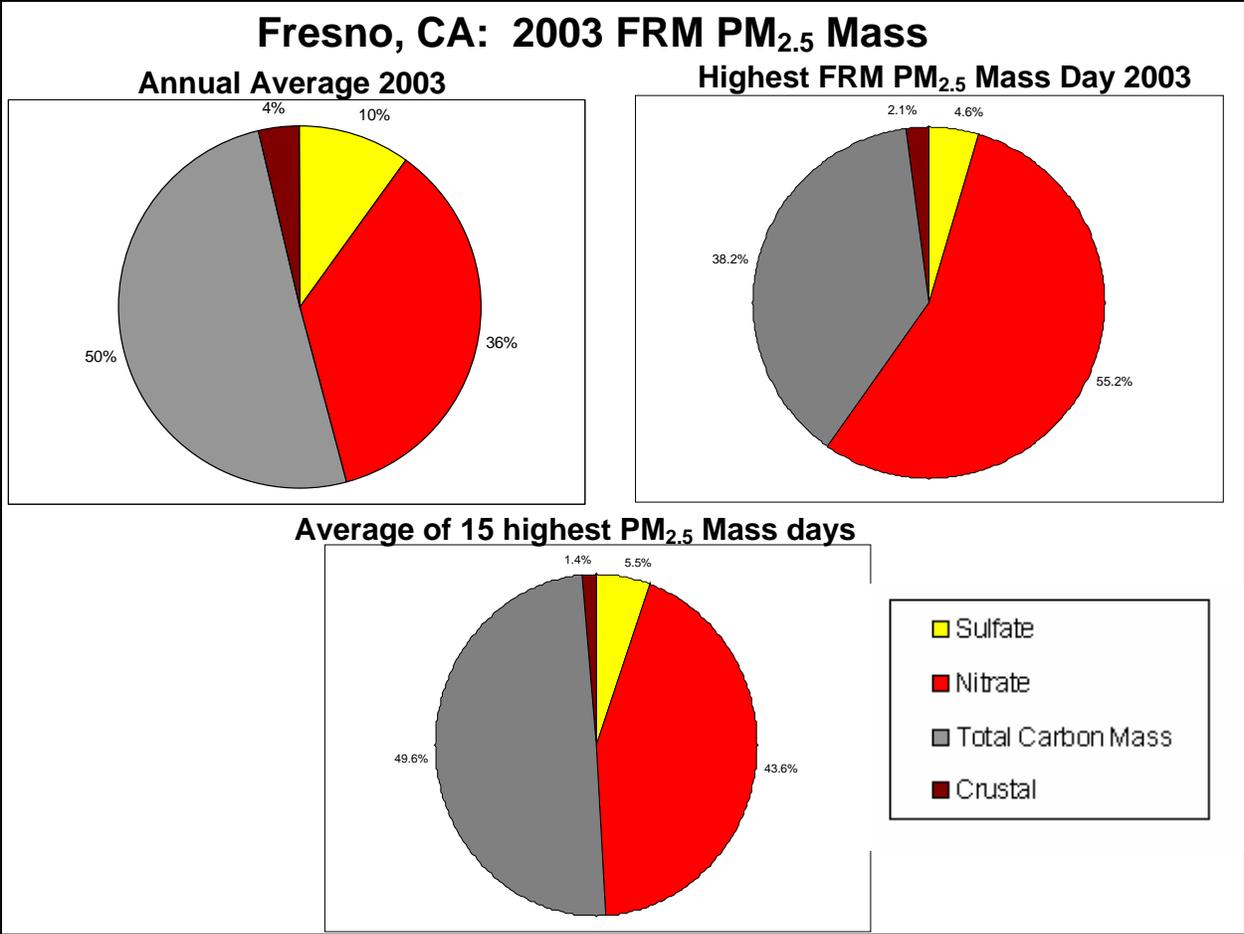


Figure 17. 2003 Daily PM_{2.5} mass and speciation patterns for Fresno, CA.

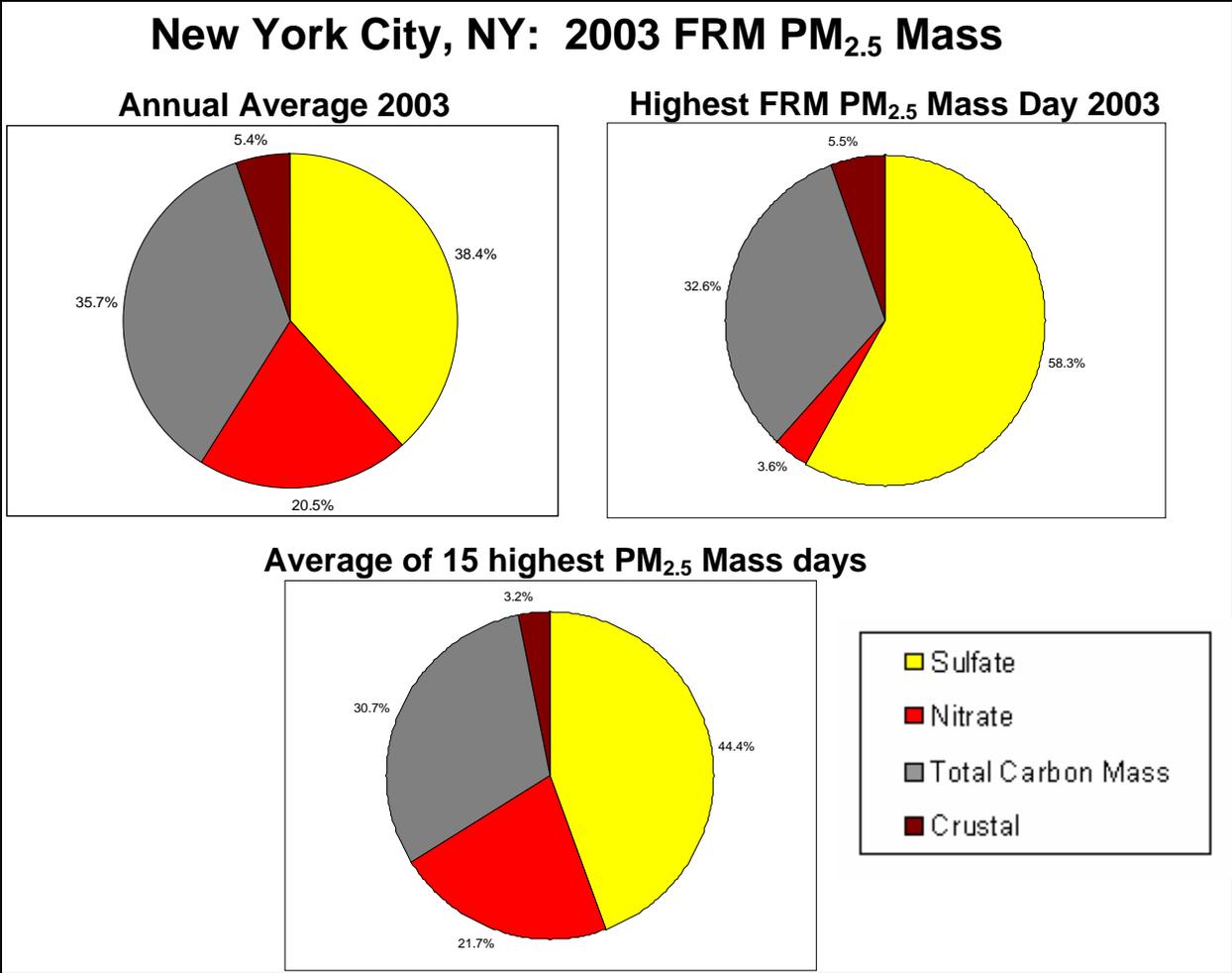


Figure 18. 2003 Daily PM_{2.5} mass and speciation patterns for New York, NY.

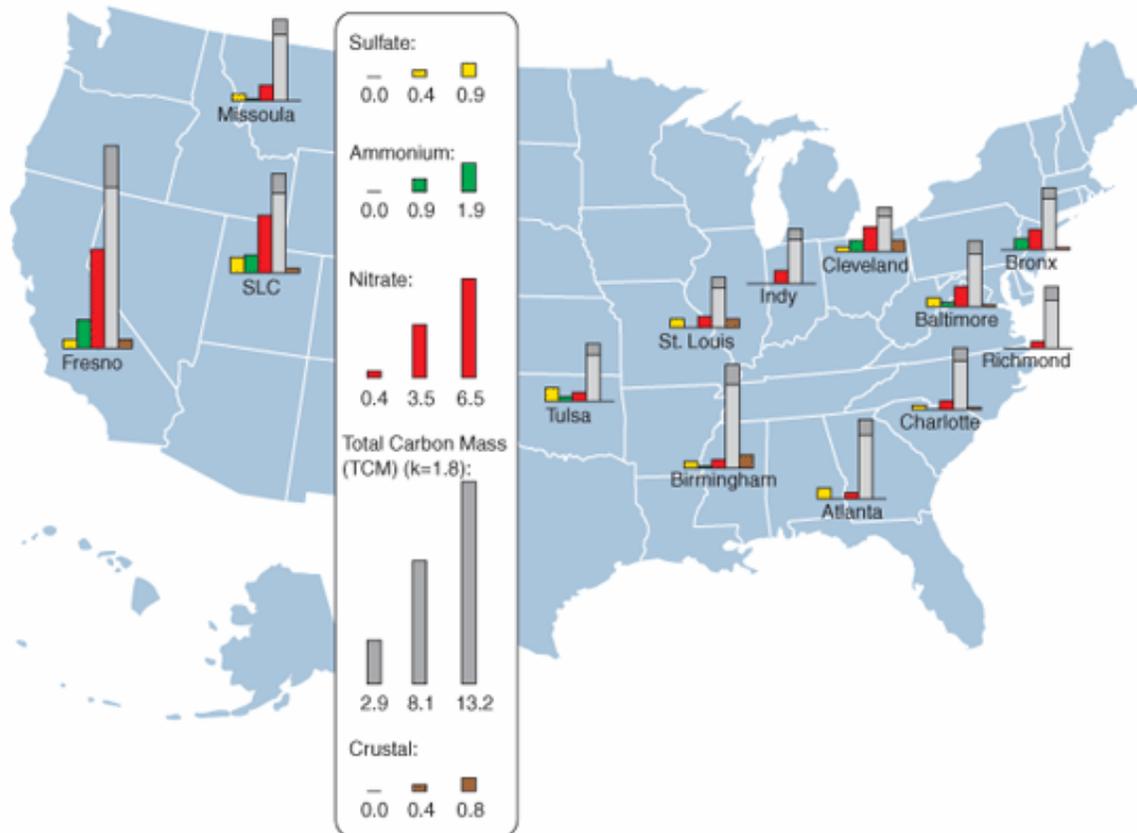


Figure 19. Estimated ‘urban excess’ of 13 urban areas by PM_{2.5} species component. The urban excess is estimated by subtracting the measured PM_{2.5} species at a regional monitor location (assumed to be representative of regional background) from those measured at an urban location.

As shown in Figure 19, we observe a large urban excess across the US for most PM_{2.5} species but especially for total carbon mass. All of these locations have consistently high urban excess for total carbon mass with Fresno and Birmingham having the largest observed measures. Larger urban excess of nitrates is seen in the western US with Fresno and Salt Lake City being significantly higher than all other areas across the nation. These results indicate that local sources of these pollutants are indeed contributing to the PM_{2.5} air quality problem in these areas. As expected for a predominately regional pollutant, only a modest urban excess is observed for sulfates.

Considerations in designing control strategies for areas to attain

In examining control alternatives to meet the current and alternative standards, our preliminary analyses have focused on a hierarchy of control strategies that takes into account regional differences in the nature of the air quality problems, as well as the results of national and regional strategies that have already been adopted to address some of them.

The available information regarding the scope and magnitude of the PM_{2.5} air quality problem suggests that local strategies will be part of an effective strategy in addressing any tightening of the daily standard. This local-first strategy complements the suite of national rules that EPA has already put into place, including the Clean Air Interstate Rule (CAIR), the Clean Air Visibility Rule (CAVR) and the Clean Air Mercury Rule (CAMR). The combination of these national rules will provide significant reductions in the emission of regional PM_{2.5} precursors including SO₂ and NO_x. In substantially reducing the regional contribution of PM_{2.5} precursors, these rules enable states to focus first on reducing the localized “urban excess” of direct and secondarily formed PM_{2.5} before looking to further regional control strategies.

Next Steps: Draft RIA for Selected Cites and Completing the Final RIA

A preliminary draft of the Regulatory Impacts Analysis (RIA) associated with the PM NAAQS proposal will be available by January 2006. Within the RIA EPA examines city specific case studies of the costs and benefits of attaining the current PM_{2.5} standards as well as proposed and alternative standards that are more protective of human health and the environment.

The reliance on science and statutory prohibition against the consideration of cost in setting of the primary air quality standards does not mean that cost or other economic considerations are not important or should be ignored. The Agency believes that consideration of cost is an essential decision making tool for the cost-effective implementation of these standards. The implementation process is where decisions are made -- both nationally and within each community -- affecting how much progress toward attainment can be made, and what time lines, strategies and policies make the most sense. Pursuant to Executive Order 12866 and OMB Circular A-4, the forthcoming Regulatory Impact Analysis provides information on the nature of the PM_{2.5} problem in this country and potential costs and benefits associated with illustrative scenarios for implementation of the proposed revisions to the NAAQS for PM_{2.5}.

There are important differences between the forthcoming RIA and recent EPA RIAs that analyze the costs and benefits of proposed regulations. First, this RIA analyzes the costs and benefits of implementing a series of illustrative control scenarios rather than a prescriptive national scale regulatory approach that reduces air pollution to desired levels. Like other RIAs, this document sets out the air quality challenge that the nation faces to reach tighter PM_{2.5} NAAQS. However, the states must ultimately design and implement control strategies to meet a NAAQS. Because we cannot predict the composition of those controls, we analyze a series of control scenarios that we believe to be illustrative of what the states may ultimately implement for some city-specific case studies in lieu of broad national estimates of attaining the proposed standards and alternative standards options.

We had planned to provide national cost and benefit estimates of illustrative control strategies to assess the nation’s ability to reach the proposed PM_{2.5} standards and alternative standards options. As we developed that analysis, we reached the conclusion that, at present, our available data and tools are insufficient to develop cost and benefit information that would accurately reflect the range of possible options that the States may choose to implement. Most significantly, we concluded that the national-scale analysis based on our current data and tools

would not properly reflect the incremental costs and benefits of moving from the current standards to progressively more health-protective standards. We are taking steps to ensure that we will complete this national-scale analysis in time for publication with the final rule (September 2006).

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Addendum 2: Signed SIP Protocol

**JOINT PROTOCOL FOR PROCESSING
STATE IMPLEMENTATION PLAN (SIP) SUBMITTALS
“SIP PROTOCOL”**

PURPOSE

This draft protocol focuses on Indiana’s state rulemaking process and EPA’s procedures for state implementation plan (SIP) approval. It provides a protocol for developing and approving rules, documents, and modeling required for a SIP. It also establishes goals and time frames for deliverables and responsibilities.

BACKGROUND

In developing and/or revising a SIP, time is often of the essence. From a state perspective, the failure to submit a SIP may result in the imposition of sanctions, including the possible loss of state highway funds. In addition, lack of timely submission of a SIP may result in EPA’s promulgation of a federal implementation plan. As a legal matter, a source may be out of compliance with the SIP during the time after which a state rule has been promulgated or a commissioner’s order issued and the time the state rule or commissioner’s order is federally approved as part of the SIP.

From a state’s perspective, there have been certain areas of concern associated with EPA review and approval, including:

1. “Late hits, i.e., EPA raises issues concerning a SIP submittal, necessitating additional state process. Examples include compliance issues that are identified after an emission limit has been adopted by the Air Pollution Control Board and inadequate modeling/lack of agreement on the modeling protocol.
2. Reviewing portions of rules that were previously SIP-approved and that have not changed in the subject rulemaking.
3. Lack of a guidance on such issues as “stringency.”
4. Inconsistent guidance or approaches (region to region, state to state).

Possible solutions include:

1. Identify procedures that ensure timely review by all offices and set time targets for EPA responses. Tightly coordinate rule development schedule.
2. Provide criteria for approveability addressing general criteria applicable to all rules, specific criteria for each rule and definitions/guidance on issues such as “stringency.”
3. Identify EPA procedures to ensure consistency within and across regions, as needed.

APPLICABILITY

This protocol applies to SIP staff in the Indiana Department of Environmental Management, Office of Air Quality, and U.S. EPA, Region 5.

OVERVIEW OF INDIANA'S RULEMAKING PROCESS

- Month 1. Submit 1st Notice of Comment Period to the Legislative Services Agency (LSA) on the 10th of the month for publication on the following 1st of the month.
- Month 2. 1st Notice appears in the Indiana Register on the 1st of the month. 30-day comment period. Start drafting rule language.
- Month 3. Draft rule language for 2nd Notice and respond to comments from 1st Notice.
- Month 4. Submit 2nd Notice of Comment Period to LSA on the 10th of the month for publication on the following 1st of the month.
- Month 5. 2nd Notice appears in the Indiana Register on the 1st of the month. 30-day comment period.
- Month 6. Prepare response to comments from 2nd Notice. Modify draft rule language if necessary and prepare draft rule for preliminary adoption.
- Month 7. Prepare board packet documents and submit for review. Board packet mailout will occur around the 20th of the month.
- Month 8. Present rule to board to consider for preliminary adoption. Hold public hearing. If possible, prepare response to comments from 1st public hearing. If rule is preliminarily adopted, prepare rule for submittal to LSA.
- Month 9. Submit Proposed Rule to LSA on the 10th of the month for publication on the 1st of the following month.
- Month 10. Proposed rule appears in the Indiana Register and a 2nd public hearing is set.
- Month 11. Refine proposed rule language.
- Month 12. Prepare board packet documents, update as needed, submit for review. Board packet mailout will occur around the 20th of the month.
- Month 13. Present rule to board to consider for final adoption. Hold public hearing. If rule is final adopted, start preparation of promulgation packet.
- Month 14. Submit promulgation packet to Attorney General's Office for review (45 days), followed by 15-30 day review by Governor's Office, and 3 days for filing with the Secretary of State.
- Month 15.
- Month 16.
- Month 17. Following signing by Secretary of State, final rule is forwarded to LSA for publication in Indiana Register. Rule is final and effective 30 days after filing with the Secretary of State.

OVERVIEW OF CURRENT IDEM OAQ-EPA REGION V COORDINATION

OAQ and Region 5 regulatory development staff hold regularly-scheduled conference calls. Agenda items include: rule issues/questions and program updates; status of SIP submittals; review of rules in development at the state level; identification of rules that will be submitted to Region 5 with a request for delegation of authority; identification of upcoming SIP submittals; identification of action items and staff person responsible for addressing them; and determination of the date and time for the next call. These monthly calls can be used to establish specific due dates for pending SIP actions.

DETAILED REVIEW SCHEDULE

The following table provides examples of State rulemakings to be submitted to EPA that contain different degrees of complexity, possibly requiring time beyond the minimum statutory requirements. Indiana's rulemaking process, internal reviews and constraints are described in detail.

The EPA SIP review times in the following table are the longest times that should be required for EPA to comment on a new or substantially revised draft or final SIP revision. These review times include the time required to consult with, and receive comments by, Region 5's Office of Regional Counsel and Enforcement staff as well as the Office of Air Quality Planning and Standards and Office of General Counsel as necessary. All EPA comments will be coordinated by Region 5 Air Programs Branch staff and will be conveyed to IDEM by email unless other arrangements are agreed to on a case-by-case basis. These review periods are intended to allow a comprehensive review of the draft rules and identification of any major approvability issues so that changes can be made by Indiana without causing significant delays in the process. These review times do not include the time during which EPA is waiting for additional documentation from IDEM. While EPA should be able to meet the following schedule in most cases, there could be some situations such as a controversial or extremely complex proposed SIP action, missing technical support needed to approve a SIP, or if EPA gets inundated with an inordinately large number of SIP requests a revised schedule may need to be worked out with IDEM. Also, the following is EPA's schedule after receiving a final action that has been published in the Indiana Register:

- Publish Proposal - 3 months if Headquarters review is not required, 4 months if Headquarters review is required.
- Publish Final - 12 months after receipt of final SIP submittal.

Paul Dubenetzky (Date)
Assistant Commissioner
Office of Air Quality
IN Department of Environmental
Management

Stephen Rothblatt (Date)
Director
Air and Radiation Division
United States Environmental Protection
Agency, Region V

SIP CATEGORY	STATE TIMELINE	EPA REVIEW TIME
1. STATE RULEMAKING		
A. Site-specific Rule ¹	17 months	2 Months
B. General Rules (e.g., PM or VOC rules resulting from designations) ²	13 months	4 Months
C. NOx SIP Call, Phase 2 ³	23 months	3 months
D. CAIR, CAMR ⁴	23 months	6 months
RULE DEVELOPMENT PROCESS	STATE TIMELINE	EPA REVIEW TIME

¹ *A non-controversial site-specific rule new rule or rule amendment that will not result in an increase in emissions will take, at a minimum, 17 months from rule initiation to having a final and effective rule.*

² *A non-controversial new rule or rule amendment that is initiated with a section 7 notice will take approximately 13 months from rule initiation to having a final and effective rule. A rule that can be initiated with a section 8 notice will take approximately 12 months from rule initiation to having a final and effective rule.*

³ *A new rule or rule amendment that will require modeling, possibly a 3rd comment period, and a detailed fiscal impact analysis that will be reviewed by LSA will take at a minimum 23 months from rule initiation to having a final and effective rule.*

⁴ *A new rule or rule amendment(s) that will require modeling, possibly a 3rd comment period, and a detailed fiscal impact analysis that will be reviewed by LSA will take at a minimum 23 months from rule initiation to having a final and effective rule.*

<p>Initiate rule development.</p> <ul style="list-style-type: none"> - Rulewriter receives assignment and is assigned a team by the Branch Chief and Section Chief. - Identify issues: technical/legal/procedural. - Determine if modeling will be needed. <p>-----</p> <p>1. Deliverable:</p> <ul style="list-style-type: none"> - Request to initiate rulemaking; - First Notice, Section 7 Notice or Section 8 Notice to OAQ Section Chief for review following review by members of rule team. <p>2. Responsible: OAQ rulewriter.</p> <p>3. OAQ Review (timeframe - minimum of 3 weeks prior to the 10th of a given month):</p> <ul style="list-style-type: none"> - Section Chief - Office of Legal Counsel - Branch Chief - Assistant Commissioner - Commissioner approves request to initiate rulemaking. 	<p>30 days (minimum)</p>	
<p>1st Notice of 30 Day Public Comment Period/Section 7/Section 8 Notice.</p> <p>Forward the 1st notice of comment period/Section 7/Section 8 Notice to LSA on the 10th of the month for publication on the 1st day of the following month. The Section 7 and Section 8 processes provide for an abbreviated rulemaking schedule.</p> <p>Responsibility: Rule Section Chief.</p>	<p>Formal 30 day written comment period.</p>	

<p><i>Forward to EPA the 1st/Section 7/Section Notice that has been submitted to LSA on the 10th of a given month within 5 working days of the LSA submittal. Responsibility: OAQ Rules Section Administrative Assistant.</i></p>		<p>EPA staff is assigned, the subject matter of the proposed SIP revision is established and agreed upon. EPA provides (appropriate for the subject and level of specificity of the 1st Notice) criteria for approval of the SIP submittal as well as other appropriate policy/guidance to the IDEM Rules Section Chief in writing within 45 days from date the 1st/Section 7/Section 8 Notice is submitted to EPA.</p>
<p><i>Review/provide an update concerning LSA/SIP Submittals at monthly OAQ/Region V rules call. Responsibility: OAQ Rules Section Chief EPA: Assign EPA member of rule team. Jointly establish and commit to review criteria and timeframe.</i></p>		<p>At monthly call, establish specific review times for each pending rulemaking action. EPA provides an update on the review status of each rule under review. Schedules are adjusted as necessary.</p>
<p>Preparation of draft rule language for Second Notice Responsibility: OAQ rulewriter The OAQ rulewriter is responsible for providing to each member of the rule team a draft of the second notice that includes draft rule language. Issues are to be addressed, to the extent possible, prior to the Second Notice starting the review and approval process in OAQ. The rules team includes the assigned EPA reviewer.</p>		<p>EPA reviews the draft rule language in light of the of the guidance provided at the 1st Notice stage and provides, in writing, to the OAQ rulewriter updated guidance, if appropriate, prior to the 2nd Notice starting the review and approval process in OAQ. EPA and OAQ will specifically identify the portion(s) of the rule that is subject to review and approval by EPA.</p>

<p>2nd Notice of 30 Day Public Comment Period on draft rule.</p> <p>The 2nd notice contains:</p> <ul style="list-style-type: none"> - Draft rule; - Response to comments received in response to the 1st notice of comment period; - Notice of a formal 30 day period in which to provide comment on the draft rule language; - Notice of 1st public hearing. <p>-----</p> <ol style="list-style-type: none"> 1. Deliverable: Second Notice to OAQ Section Chief for review following review by members of rule team. The rules team includes the assigned EPA rule reviewer. 2. Responsible: OAQ rulewriter. 3. OAQ Review (timeframe - minimum of 3 weeks prior to the 10th of a given month): <ul style="list-style-type: none"> - Section Chief - Office of Legal Counsel - Branch Chief - Assistant Commissioner - Commissioner approves 2nd notice for submittal to LSA. 	<p>Formal 30 day written comment period following publication in the Indiana Register.</p>	
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<p><i>Forward the 2nd Notice that was submitted to LSA on the 10th of a given month for publication on the 1st of the following month to EPA within 5 working days of the LSA submittal.</i></p> <p><i>Responsibility: OAQ Rules Section Administrative Assistant.</i></p>		<p>EPA will comment on 2nd notice according to schedule at beginning of table (e.g., 2-months for site-specific rule, 4-months for general rule) and assure that draft rule language will be consistent with the agreed upon SIP approveability criteria and guidance if EPA's comments are incorporated. EPA review includes review by Office of Regional Counsel, other EPA Offices, and technical staff, as necessary. EPA comments will be made by e-mail unless other arrangements are made.</p>
<p><i>Review/provide an update on SIP Submittals at monthly OAQ/Region V rules call.</i></p> <p><i>Responsibility: OAQ Rules Section Chief.</i></p> <p><i>EPA: Update review status based on review criteria and timeframe commitments.</i></p>		<p>EPA provides review status of pending actions and issues are identified as review progresses. Schedules are adjusted as necessary</p>
<p>First Public Hearing Preparation.</p> <p>30 day advance notice of public hearing in newspaper (SIP requirement).</p> <p>Responsibility: OAQ Rules Section Chief</p> <p>-----</p>		

<p>Post/mail Board Packet not later than 2 weeks prior to the board meeting. This includes a mailing to EPA Responsibility: Rules Section Administrative Assistant.</p> <p>-----</p> <p>1. Deliverable:</p> <ul style="list-style-type: none"> - Draft rule language; - Response to comments from 2nd comment period; or - Section 7 Notice; or - Section 8 Notice; - Fact sheet; - Any materials being incorporated by reference to section chief for review following review by members of rule team. <p>2. Responsible: OAQ rulewriter.</p> <p>3. OAQ Review (timeframe - minimum of 3 weeks prior to board packet mailout):</p> <ul style="list-style-type: none"> - Section Chief - Office of Legal Counsel - Branch Chief - Assistant Commissioner - Commissioner approves board packet documents. 		
<p>First Public Hearing followed by Air Board action (preliminary adoption). Preliminary Adoption of draft rule by the Air Board. Submit required documents to LSA following Air Board action (submittal on the 10th of the month for publication on the 1st of the following month).</p>		

<p><i>Forward to EPA the Proposed Rule that has been submitted to LSA on the 10th of a given month within 5 working days of the LSA submittal.</i></p> <p><i>1. Responsibility: OAQ Rules Section Administrative Assistant.</i></p>		<p>EPA comments on preliminary adopted rule according to schedule at beginning of table (e.g., 2-months for site-specific rule, 4-months for general rule) if preliminary adopted rule has been significantly revised (control requirements or enforceability provisions have been changed) since 2nd notice. EPA will comment within 21 day comment period for non-significant changes and, to the extent possible, for significant changes.</p>
<p><i>Review/provide an update on SIP Submittals at monthly OAQ/Region V rules call.</i></p> <p><i>Responsibility: OAQ Rules Section Chief.</i></p> <p><i>EPA: Update review status based on review criteria and timeframe commitments.</i></p>		<p>EPA provides review status of pending actions and issues are identified as review progresses. Schedules are adjusted as necessary.</p>
<p>Proposed Rule Publishes in Indiana Register</p> <p>Includes:</p> <ul style="list-style-type: none"> - Proposed rule; - LSA fiscal impact analysis, if required; - Response to comments from second comment period; - Response to comments from 1st public hearing; - Notice of 3rd 21-day written comment period if rule that was preliminarily adopted is substantively different from draft rule; - Notice of 2nd public hearing. 		

<p><i>Review/provide an update on upcoming SIP Submittals at monthly OAQ/Region V rules call. Responsibility: OAQ Rules Section Chief</i></p> <p><i>Review/provide an update on SIP Submittals at monthly OAQ/Region V rules call. Responsibility: OAQ Rules Section Chief.</i></p> <p><i>EPA: Coordinate final review with rulewriter and, based on review criteria, assure that all SIP approveability issues have been addressed.</i></p>		<p>EPA provides review status of pending actions and issues are identified as review progresses. Schedules are adjusted as necessary. Also, confirm whether all SIP approveability issues have been addressed prior to final adoption.</p>
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<p>Second Public Hearing followed by Air Board action (final adoption) Preparation. 30 day advance notice of public hearing in newspaper (SIP requirement). Responsibility: OAQ Rules Section Chief.</p> <p>-----</p> <p>Posting/ mailing of Board Packet not later than 2 weeks prior to the board meeting. This includes forwarding the Board Packet to EPA. Responsibility: Rules Section Administrative Assistant.</p> <p>-----</p> <p>1. Deliverable: - Proposed rule as preliminarily adopted or preliminarily adopted with IDEM’s suggested changes included; - Fact sheet; - LSA fiscal impact analysis, if required; - Any materials being incorporated by reference.</p> <p>2. Responsible: OAQ rulewriter.</p> <p>3. OAQ Review (timeframe - minimum of 3 weeks prior to board packet mailout): - Section Chief - Office of Legal Counsel - Branch Chief - Assistant Commissioner - Commissioner approves board packet rules documents.</p>		
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<p>Second Public Hearing and Air Board action (final adoption). Board final adopts amendments or new rules.</p>		
<p>Promulgation. Prepare promulgation packet. Responsibility: Rules Section Administrative Assistant under the direction of the rule writer. ----- Review promulgation packet: - Office of Legal Counsel Forward promulgation packet to Attorney General's Office. - Review by Attorney General - Approval by the Governor - Filing with the Secretary of State.</p>	<p>45 days 15 days, may req add 15 days 3 days for review</p>	
<p>If a parallel processing request is to be forwarded to Region V, prepare SIP cover letter, prepare SIP submittal (the final rule and signature page will be lacking), mail SIP submittal. Responsibility: Rule writer working with the administrative assistant.</p>		
<p>Rule Effective: 30 days after filing with the Secretary of State.</p>		
<p>Final Rule Publication.</p>	<p>1st of the month.</p>	

<p>SIP Submittal (rule as published in the Indiana Register is required part of SIP submittal). Prepare SIP cover letter for Commissioner's signature and prepare SIP submittal. If a parallel processing request has been forwarded to EPA, prepare a supplemental submittal that includes the final rule as it prints in the Indiana Register and the signature page. Responsibility: Rule writer</p>		
<p>Notice of Proposed Rulemaking</p>		<p>1. NPR is published by EPA within 3-months, or 4-months if HQ review is required</p>
<p>Notice of Final Rulemaking</p>		<p>2. 12 months after receipt of final SIP submittal</p>
<p>2. NON-RULE SIP SUBMITTALS</p>	<p>State Timeline</p>	<p>EPA Review Time</p>
<p>A. Commissioner's Order</p>		<p>Same as 1. and 2. above.</p>
<p>B. Redesignation</p>	<p>6 months (approx)</p>	
<p>Quality assure monitoring data</p>	<p>30-45 days (from close of ozone season (Sept. 30))</p>	
<p>Preliminary draft of petition/maintenance plan</p>	<p>45-60 days (from initial assignment)</p>	

EPA preliminary review and comment		45 - 60 days
Refined draft based on internal and external comment	30 days (from receipt of comment)	
Initiation of public comment period on draft (upon completion of refined draft)	45 days	
Public hearing regarding draft petition/maintenance plan	30 days (from initiation of public comment period)	EPA provides comments during comment period.
Submit final documents to EPA	30 days (from close of comment period)	
Notice of proposed action		90-120 days
Notice of final action		Within 18 months of submittal of final redesignation submittal.
C. Attainment Demonstration	3 years following designation	
Photochemical modeling (ongoing during process)	30 months	
Consideration of control options	18 months	
Select control strategy	3 months	
Rulemaking for required controls	18 months	
EPA preliminary review and comment		45 - 120 days

Refined draft based on internal and external comment	30 days (from receipt of comment)	
Initiation of public comment period on draft SIP submittal	45 days	
Public hearing regarding draft SIP submittal	30 days (from initiation of public comment period)	EPA provides comments during comment period.
Submittal of final documents to EPA	30 days (from close of comment period)	
Notice of proposed action		90-120 days
Notice of final action		Within one year of submittal of final plan.
D. Rate of Further Progress Plans	18 months	
Consideration of control options	18 months	
Select required controls	3 months	
Rulemaking for required controls	18 months	
EPA preliminary review and comment		45-120 days
Initiation of public comment period on draft	45 days	
Public hearing regarding draft	30 days (from initiation of public comment period)	

Submit final documents to EPA	30 days (from close of comment period)	
Notice of proposed action		90-120 days
Notice of final action		Within 1 year of submittal of plan