

# **Implementation of National Ambient Air Quality Standards**

Kimber Scavo

Group Leader

State and Local Programs Group

# Air Quality Planning

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- National Ambient Air Quality Standards (NAAQS)
- Designations
- State Implementation Plan (SIP)

# Air Quality Management (AQM)

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- A system that combines emissions data, AQ information, promulgation of rules, and regulations to meet the goals and requirements set forth in the CAA.
- The CAA prescribes a complicated set of requirements and responsibilities, based upon collaborative working relationships among EPA, state, tribal and local agencies.
- AQM components include:
  - Setting NAAQS,
  - Designing and implementing SIPs and control strategies to comply with the NAAQS; and
  - Assessing and measuring the progress of air quality.
- SIPs are the framework to provide for control strategies that achieve the NAAQS.



# NAAQS

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- **The Clean Air Act directs U.S. EPA to identify and set national standards for pollutants with adverse public health and environmental effects.**
- **The Clean Air Act also requires EPA to review each standard at least once every 5 years.**
- **US EPA established NAAQS for six criteria pollutants:**
  - **ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and particulate matter (PM)**

# Criteria Pollutant: NAAQS Process

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- **Agency review of latest available science (CAA §108)**
  - Evaluation and integration of latest peer-reviewed science
  - Policy assessment, based on science assessment, including air quality, exposure, and risk assessments
- **Establish independent scientific advisory committee, the Clean Air Scientific Advisory Committee (CASAC), to (CAA §109):**
  - Review air quality criteria
  - Recommend to the Administrator any new standards and revision of existing criteria and standards as may be appropriate
- **Peer and public reviews of science and policy**
  - Clean Air Scientific Advisory Committee reviews (CAA §109(d)(2))
  - Public reviews and comments

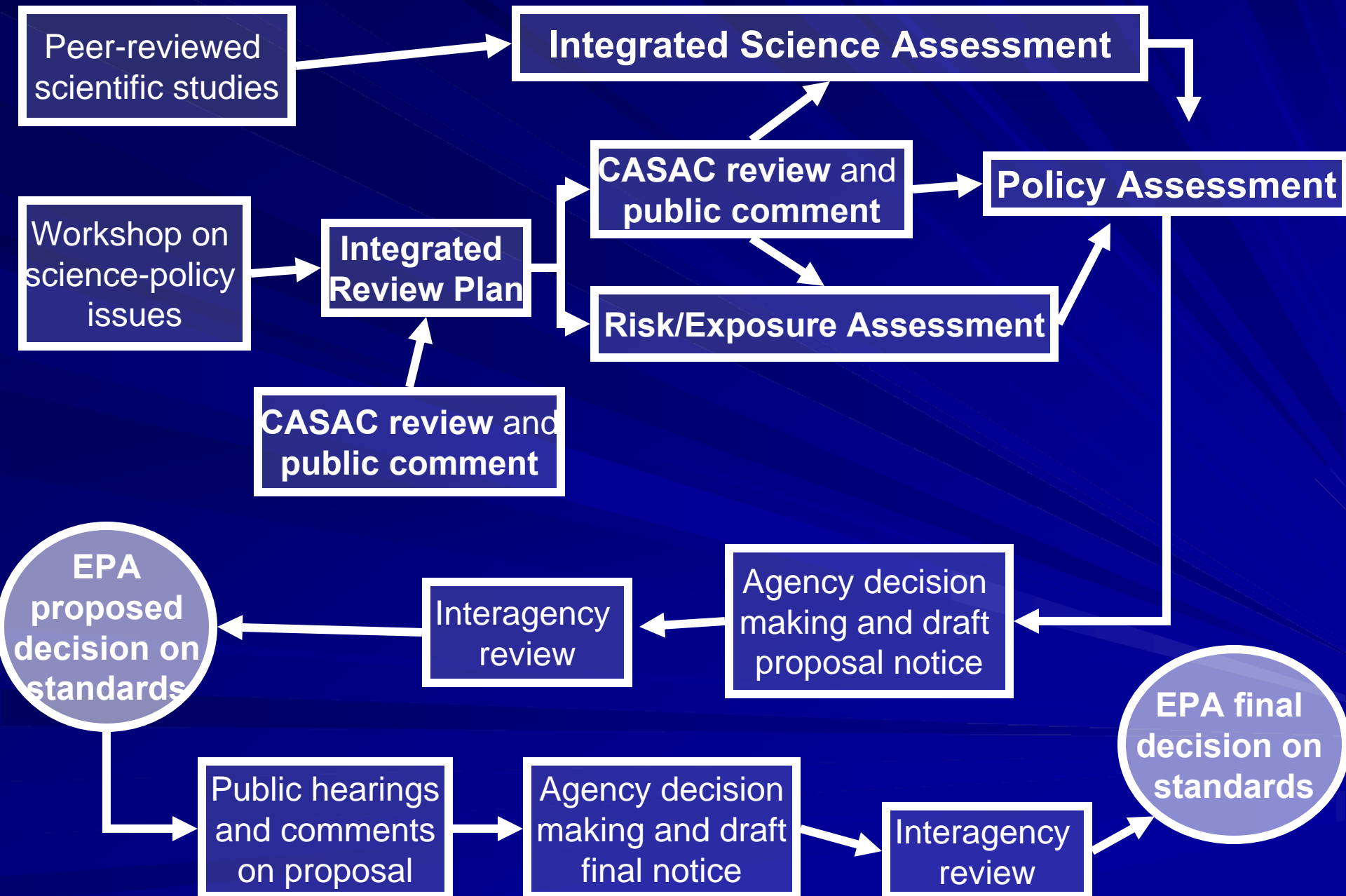
# Criteria Pollutant: NAAQS Process (cont'd)

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- **Health-based standards “requisite” to protect public health with an “adequate margin of safety” (CAA §109)**
  - Public health policy judgments required to protect sensitive groups, not most sensitive individual, from adverse effects
  - Standards not “risk free” and not based on cost
- **Welfare-based standards required to protect agricultural crops and ecosystems from adverse effects**
  - Secondary standards typically set the same as primary



# NAAQS Process





# Current NAAQS

	Primary Standards	Secondary Standards
<b>Carbon Monoxide</b>	9 ppm or 10 mg/m <sup>3</sup> (8 hr) 35 ppm or 40 mg/m <sup>3</sup> (1 hr)	None
<b>Lead</b>	0.15 µg/m <sup>3</sup> (3 mon avg.) 1.5 µg/m <sup>3</sup> (quarterly)	Same as primary
<b>Nitrogen Dioxide</b>	0.053 ppm or 100 µg/m <sup>3</sup> (annual)	Same as primary
<b>PM10</b> <b>PM2.5</b>	150 µg/m <sup>3</sup> (24 hr)  15.0 µg/m <sup>3</sup> (annual) 35 µg/m <sup>3</sup> (24 hr)	Same as primary
<b>Ozone</b>	0.075 ppm (8 hr) 0.08 ppm (8 hr) 0.12 ppm (1 hr) revoked	Same as primary
<b>Sulfur Dioxide</b>	0.03 ppm (annual) 0.14 ppm (24 hr)	0.5 ppm (3 hr)

# Projected NAAQS Review Schedules

	NO <sub>2</sub> Primary	SO <sub>2</sub> Primary	NO <sub>2</sub> / SO <sub>2</sub> Secondary	CO	PM *	Ozone *
Proposed rulemaking	Jun 2009	Nov 2009	Feb 2010	Oct 2010	Jan 2011	Jun 2012
Final rulemaking	Jan 2010	Jun 2010	Oct 2010	May 2011	Oct 2011	Mar 2013

\* Approximate dates. New accelerated schedules may be developed.

# Projected NAAQS Review & Implementation Schedules

NAAQS Pollutant	Projected Date for NAAQS Revision	Initial Designations	Attainment Demonstrations Due Date	Attainment Dates
NO2 Primary	Jan 2010	Jan 2012 <sup>^</sup>	2020 <sup>^</sup> (earliest)	2023 <sup>^</sup> (earliest)
SO2 Primary	Jun 2010	Jun 2012	Dec 2013	2017
NOx/SOx Secondary	Oct 2010	Oct 2012	Apr 2014	2017
CO	May 2011	May 2013	Nov 2014	2018
PM10 24-hr	1987	Nov 1990	1991	1994
PM2.5 - 1997	July 1997	Apr 2005	Apr 2008	Apr 2010/2015
PM2.5 - 2006	Dec 2006	Dec 2008+	Sept 2012+	2014/2019+
PM2.5 - 2011	Mar 2011*	Mar 2013	2015	2018/2023
Ozone - 1997	July 1997	June 2004	Jun 2007	2007-2024
Ozone - 2008*	Mar 2008	March 2010	2013	2013-2030
Lead	Oct 2008	Oct 2010/11#	July 2012/2013	2016/17

\* *reflects accelerated schedule*

+ *currently on hold*

<sup>^</sup> *new near-roadway monitoring network required that will delay schedule*

# *new source-oriented monitoring network may delay designations for many areas*

# EPA's Major Ozone Implementation Rules

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- 4/30/04 – “Final Rule to Implement the 8-Hour Ozone NAAQS-Phase 1” (69 FR 23951)
- 11/29/05 – “Final Rule to Implement the 8-Hour Ozone NAAQS-Phase 2” (70 FR 71612)
- 1/16/09 – “Proposed Rule to Implement the 1997 8-Hour Ozone NAAQS: Revision on Subpart 1 Area reclassification & Anti-Backsliding Provisions Under Former 1-Hour Ozone Standard” (74 FR 2934)

# **EPA's Lead, Particulate Matter, Sulfur Dioxide, Nitrogen Dioxide and Carbon Monoxide Implementation Rules**

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- **4/16/92 – “State Implementation Plans; General preamble for the Implementation of Title I of the Clean Air Act Amendments” (57 FR 13498) – For PM10, CO, NO2 and SO2**
- **4/25/07 – “Clean Air Fine Particle Implementation Rule” (72 FR 25086)**
- **12/12/08 – “National Ambient Air Quality Standards for Lead” (73 FR 66964)**

# Info for General Inquires

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## Designations

- [http://www.epa.gov/oar/oaqps/greenbk/caa-t1p.html#Sec.107\(d\)\(4\)\(A\)](http://www.epa.gov/oar/oaqps/greenbk/caa-t1p.html#Sec.107(d)(4)(A))
- <http://www.epa.gov/oar/oaqps/greenbk/index.html>
- <http://www.epa.gov/pmdesignations/>
- <http://www.epa.gov/ozonedesignations/>

## Regional Haze

- <http://www.epa.gov/visibility/>

# Info for General Inquires

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## Criteria Pollutants

- <http://epa.gov/air/criteria.html>
- <http://epa.gov/ttn/naaqs>

## Implementation Rules

- <http://epa.gov/air/lead/actions.html>
- [http://www.epa.gov/pmdesignations/1997standards/documents/Mar07/PM\\_rule\\_042507.pdf](http://www.epa.gov/pmdesignations/1997standards/documents/Mar07/PM_rule_042507.pdf)



**Call your own EPA Regional  
Office with specific questions  
on the designations process  
and NAAQS**

# Designations

Rhea Jones

Group Leader

Geographic Strategies Team

**What happens when an area  
does not meet (violates) the  
NAAQS?**

# CAA Section 107(d) Requirements

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- “— By such date as the Administrator may reasonably require, but not later than 1 year after promulgation of a new or revised national ambient air quality standard for any pollutant under section 109, the governor of each state shall submit to the Administrator, a list of all areas (or portions thereof) in the State, designating as —
  - (i) nonattainment...
  - (ii) attainment...
  - (iii) unclassifiable...”

# CAA Section 107(d) Requirements (cont'd)

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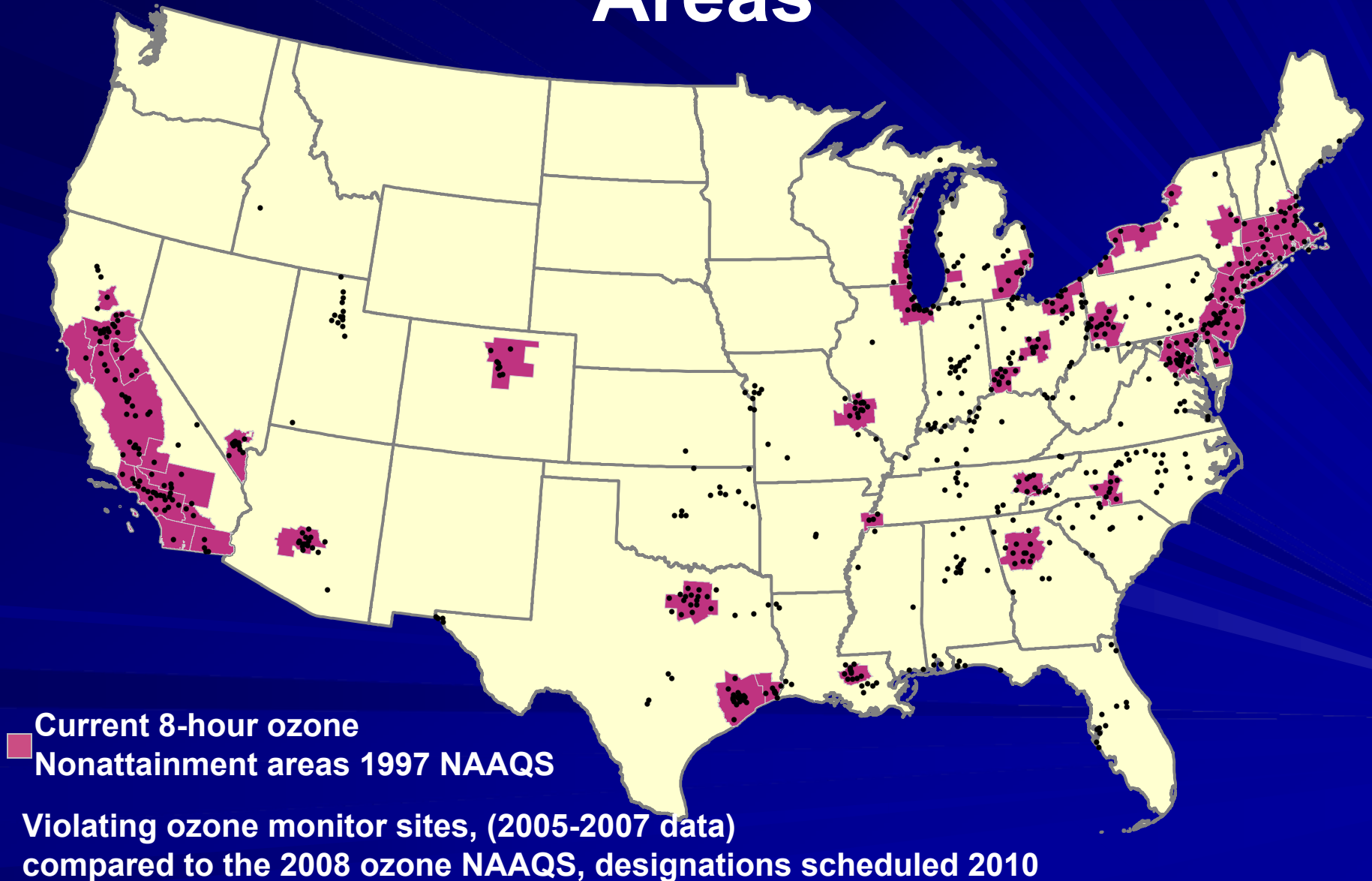
- EPA must notify States and Tribes of any modifications no later than 120 days prior to the final designations date.
- EPA is required to make final designations not later than 2 years after promulgation of the revised NAAQS; date may be extended for up to 1 year if the Administrator has “insufficient information to promulgate the designations”.

# What is a Nonattainment Area?

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- **Any area that does not meet (or contributes to ambient area quality in an nearby area that does not meet) the national primary and secondary ambient air quality standards for that pollutant.**

# 8-Hour Ozone Nonattainment Areas





# EPA's Designation Guidance

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- 3/28/00 memo – “Boundary Guidance on Air Quality Designations for the 8-hour Ozone NAAQS” (technical factors)
- 7/18/00 memo – “Guidance on 8-hour Ozone Designations for Indian tribes” (technical factors)
- 2/27/03 memo – “Extension for States and Tribes to Submit Recommendations, etc” (date to send recommendations)
- 4/1/03 memo – “Designations for the Fine Particle NAAQS” (technical factors and date to send recommendations)
- 6/8/07 memo – “Area Designations for the Revised 24-hour Fine Particle NAAQS” (technical factors and date to send recommendations)
- 9/12/08 – “National Ambient Air Quality Standards for Lead; Final Rule” (technical factors and date to send recommendations)
- 12/4/08 – “Area Designations for the Revised 8-hour Ozone NAAQS” (technical factors)

# Section 110(a)(2)(D) Requirements

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- **Transport of air pollution is regulated under CAA section 110(a)(2)(D)**
- **Each SIP must contain adequate provisions prohibiting any source from emitting any air pollutant in amounts which will:**
  - **Contribute significantly to nonattainment areas in other states;**
  - **Interfere with maintenance of a NAAQS in other states ;**
  - **Interfere with measures to prevent significant deterioration of air quality in other states; and**
  - **Interfere with measures to protect visibility in other states.**

# Regional Haze – Section 169A

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- **CAA Section 169A states:**
  - “Congress hereby declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution.”
- **Class I areas – national parks and wilderness areas, like the Grand Canyon**
  - Great Smoky Mountain National Park has some of worst visibility conditions in the country

# Great Smoky Mountains







# **Regional Haze – Section 169A (cont'd)**

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- **The 1999 Regional Haze Rule lays out the requirements to meet the national goal and requires that:**
  - **States submit plans to make progress to improve visibility and ultimately (by the year 2064) return visibility conditions in our national parks and wilderness areas to natural conditions – those conditions which existed before manmade air pollution**
  - **States consider applying retrofit controls on large, existing stationary sources including large power plants – this is called Best Available Retrofit Technology, or BART**

# Regional Haze Program Milestones

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- RH SIPs were due from all states on December 17<sup>th</sup> 2007
- Many states missed the deadline – they received a formal finding of failure to submit their SIPs
  - This finding turned on the 2-year FIP clock; EPA must issue the FIP by January 2011 unless that states submit a SIP and EPA approves it before then
- A comprehensive SIP revision is due every 10 years while an interim progress report is due from the state every 5 years demonstrating that the state is making reasonable progress towards attaining natural conditions by 2064