

# EPA PM NAAQS Review “Urban Visibility-Based Secondary Standard?”

Overview by Marc Pitchford for the  
IMPROVE Steering Committee  
Meeting, October 27 to 29, 2008

# History of PM National Ambient Air Quality Standards

Final Rule	Indicator	Ave. Time	Level	Form
1971	TSP - Total Suspended Particles ( $\leq 25\text{-}45 \mu\text{g}/\text{m}^3$ )	24-hour	260 $\mu\text{g}/\text{m}^3$ (primary) 150 $\mu\text{g}/\text{m}^3$ (secondary)	Not to be exceeded more than once per year
		Annual	75 $\mu\text{g}/\text{m}^3$ (primary)	Annual average
1987	PM <sub>10</sub>	24-hour	150 $\mu\text{g}/\text{m}^3$ *	Not to be exceeded more than once per year
		Annual	50 $\mu\text{g}/\text{m}^3$	Annual average
1997	PM <sub>2.5</sub>	24-hour	65 $\mu\text{g}/\text{m}^3$	98 <sup>th</sup> percentile
		Annual	15 $\mu\text{g}/\text{m}^3$	Annual arithmetic mean, ave. over 3 years
	PM <sub>10</sub>	24-hour	150 $\mu\text{g}/\text{m}^3$	Initially promulgated 99 <sup>th</sup> percentile form; when 1997 standards were vacated, form of 1987 standards remained in place (not to be exceeded more than once per year on ave. over a three year period)
		Annual	50 $\mu\text{g}/\text{m}^3$	Annual arithmetic mean, ave. over 3 years
2006	PM <sub>2.5</sub>	24-hour	35 $\mu\text{g}/\text{m}^3$	98 <sup>th</sup> percentile, ave. over 3 years
		Annual	15 $\mu\text{g}/\text{m}^3$	Annual arithmetic mean, ave. over 3 years
	PM <sub>10</sub>	24-hour	150 $\mu\text{g}/\text{m}^3$	Not to be exceeded more than once per year on ave. over a 3 year period

\* When not specified, primary and secondary standards are identical.

## *2006 Primary Standards*

- Fine particle primary standard
  - PM<sub>2.5</sub> mass-based indicator retained
  - Level of 24-hour standard tightened to 35 µg/m<sup>3</sup>; 98<sup>th</sup> percentile form retained
  - Level of annual standard retained at 15 µg/m<sup>3</sup>; form of standard revised
- Coarse particle primary standard
  - PM<sub>10</sub> mass-based indicator retained (had proposed a PM<sub>10-2.5</sub> urban only standard)
  - Retained level and form of 24-hour standard; revoked annual standard

# *2006 Secondary Standards*

- Revised to be identical to primary standards
- Focused on visibility impairment
  - Proposed, but did not finalize, sub-daily PM<sub>2.5</sub> secondary standard to address visibility-related effects primarily in urban areas
  - Recognized limitations in available studies of public preference with regard to acceptable levels of urban visibility impairment
  - Concluded revising level of PM<sub>2.5</sub> 24-hour standard to 35 µg/m<sup>3</sup> (identical to revised primary standard) would improve visual air quality in many urban areas
- Also considered other welfare effects (qualitatively)
  - ecosystems,
  - climate change,
  - materials damage and soiling

# *Schedule for the Current Review*

Major Milestones		Projected Completion Date	Projected CASAC Review Date
Workshops to Discuss Key Policy-Relevant Issues		July 2007 (complete)	
Integrated Review Plan	Draft Final	October 2007 (complete) January 2008	November 30, 2007 (complete)
Integrated Science Assessment	First Draft Second Draft Final	August 2008 March 2009 September 2009	October 2008 May 2009
Risk/Exposure Assessment	Plan First Draft Second Draft Final	September 2008 April 2009 November 2009 March 2010	October 2008 May 2009 January 2010
Policy Assessment/Rulemaking	ANPR Proposed Final	June 2010 January 2011 October 2011	August 2010

\*Indicates that a single CASAC meeting will address both documents

## *Scope of Assessment for Review of Secondary Standards*

### **Issue:**

- Should the assessment continue to focus on urban visibility?

### **Planned approach:**

- Quantitative assessments:
  - Visibility impairment as it relates to fine particles
  - Expand the characterization of public perceptions of visibility impairment in urban areas
- Qualitative assessments
  - climate,
  - effects on vegetation and ecosystems,
  - and materials damage

# Current Status

- Integrated Science Assessment, Visibility Effects Chapter 7
  - features information developed by the RPO process and IMPROVE network
  - draft chapter is available
- Urban Visibility Preference/Valuation Workshop (10/6 to 10/8/08)
  - goal is to help plan a new round of urban visibility focus group and survey studies that EPA may fund
  - summary report will be available soon
- Other activities & issues
  - WinHaze modifications to improve sky color and cloud appearance as sensitive indicators of visibility impairment for urban scenes
  - Review/optimization of IMPROVE algorithm to estimate light extinction from PM speciation data will begin soon
  - EPA could choose a non-PM mass indicator for a proposed secondary standard (e.g. light extinction)