

JANUARY 2005 DRAFT STAFF PAPER FOR PARTICULATE MATTER

FACT SHEET

OVERVIEW

- On January 31, 2005, the Environmental Protection Agency (EPA) released its second draft staff assessment of the policy implications of the latest scientific and technical information about particulate matter, also called “PM” or “particle pollution.”
- The draft document, known as a “staff paper,” is part of EPA’s regular review of its National Ambient Air Quality Standards for particulate matter. The assessment, conclusions, and recommendations are provisional staff judgments that are subject to revision following scientific peer and public review. As such, they do not represent Agency decisions on these important issues.
- The second draft staff paper includes the provisional staff judgment that the latest scientific, health and technical information about PM does not support relaxing EPA’s current health-based standards for fine particles, also known as PM_{2.5}.
- The second draft staff paper also recommends changing its health-based standards for coarse particles to avoid “double regulating” fine particles. This decision reflects the latest science about particulate matter and is consistent with a 1999 court decision.
- In addition to health protective standards, the Agency sets “secondary” standards to protect against ecological and other “welfare” effects of air pollution. The second draft staff paper recommends revising the secondary standards for PM_{2.5} to provide increased and more targeted protection primarily in urban areas from visibility impairment related to fine particles.
- The draft is based on the Agency’s “criteria document” for particulate matter which was issued in final form in October 2004. The criteria document, prepared by EPA’s Office of Research & Development, is a compilation and evaluation of the latest scientific knowledge useful in assessing the health and welfare effects of particulate matter pollution.
- The second draft staff paper will be reviewed by the scientific community, industry, public interest groups, the general public, and the Clean Air Scientific Advisory Committee.
- EPA will not base any regulatory decisions on this draft. When final, the staff paper will be transmitted to EPA’s Administrator, who is charged by law with deciding whether the particulate matter standards should be changed. The final staff paper will include recommended options for the Administrator to consider in making that decision.

- Under a consent agreement with nine environmental groups, the Administrator must issue a proposal regarding the particulate matter standards by December 20, 2005, and a final rule by September 27, 2006. That rule may, or may not, include revisions to the standards.

KEY ELEMENTS OF THE January 2005 DRAFT

- The draft staff paper addresses both fine particles (those 2.5 micrometers in diameter and smaller) and thoracic or “inhalable” portion of coarse particles (those between 2.5 and 10 micrometers in diameter). Particle standards are expressed in “micrograms per cubic meter air,” which is a measure of particles found in the air.
- The draft staff paper also addresses both primary and secondary standards. *Primary standards* are designed to protect public health with an adequate margin of safety; *secondary standards* are designed to protect against “welfare effects” including ecological damage, visibility impairment (haze), and damage to materials. The staff paper includes the following provisional staff judgments and conclusions about the existing particulate matter standards for fine (PM_{2.5}) and coarse particles:

- ▶ PM_{2.5} should continue to be used as the indicator for fine particles.
- ▶ The scientific evidence clearly supports standards that provide at least the level of protection as the current standards. The staff concludes that evidence provides strong support for giving consideration to revising the current PM_{2.5} standards to provide increased public health protection. Staff provides two alternative approaches to establishing more protective suites of daily and annual PM_{2.5} standards.

Staff recommends consideration of an annual PM_{2.5} standard at the current level of 15 µg/m³ together with a revised 24-hour PM_{2.5} standard in the range of 35 to 25 µg/m³; or

Alternatively, staff also recommends consideration of a revised annual PM_{2.5} standard, within the range of 14 to 12 µg/m³, together with a revised 24-hour PM_{2.5} standard to provide supplemental protection against episodic localized or seasonal peaks, in the range of 40 to 35 µg/m³.

- ▶ The scientific evidence also supports continuing separate standards for coarse particles, but the current indicator for coarse particle standards (PM₁₀) should be revised to exclude fine particles. The recommended thoracic coarse particle indicator includes particles larger than 2.5 micrometers but smaller than 10 micrometers, expressed as PM_{10-2.5}.

- ▶ The scientific and technical evidence supports a 24-hour standard for thoracic coarse particles, but also may support setting an annual standard.
- ▶ For a 24-hour PM_{10-2.5} standard, staff recommends considering a level that is about as protective as the current daily PM₁₀ standard, with a level in the range of approximately 65 to 85 µg/m³. Staff also believes there is some support for consideration of a PM_{10-2.5} standard level down to approximately 30 µg/m³ to 35 µg/m³.
- ▶ For secondary standards, staff recommends that consideration be given to revising the current suite of secondary PM_{2.5} standards to provide increased and more targeted protection primarily in urban areas from visibility impairment related to fine particles.
- ▶ Staff recommends consideration of a 4- to 8-hour PM_{2.5} standard within the range of 30 to 20 µg/m³. Staff also recommends consideration of a percentile-based form for such a standard, focusing on a range at or somewhat above the 90th percentile of the annual distribution of daily short-term PM_{2.5} concentrations, averaged over 3 years.

NEXT STEPS

- The Clean Air Scientific Advisory Committee will review this second draft of the staff paper at a meeting to be held in April 2005.
- Under terms of a consent decree, EPA will issue a proposal regarding the particulate matter standards review by December 20, 2005; and a final notice by September 27, 2006.

ADDITIONAL INFORMATION

- This document is available under “Staff Papers” at http://www.epa.gov/ttn/naaqs/standards/pm/s_pm_index.html
- You may submit comments electronically, by mail, by facsimile or through hand delivery/courier. Please reference Docket Number OAR-2001-0017 on comments. All comments on the second draft Staff Paper should be submitted by March 31, 2005. You may also offer comments at the April CASAC meeting.

ABOUT AIR QUALITY STANDARD REVIEWS

- The Clean Air Act requires EPA to set national air quality standards for particulate matter and five other pollutants considered harmful to public health and the environment (the other pollutants are ozone, nitrogen oxides, carbon monoxide, sulfur dioxide and lead).

- The law also requires EPA to periodically review the standards to ensure that they provide adequate health and environmental protection, and to update those standards as necessary.
- Such a review is a lengthy undertaking. First, EPA's Office of Research and Development develops a "criteria document" a compilation and evaluation of the latest scientific knowledge useful in assessing the health and welfare effects of the air pollutant. In developing this document, EPA must consider the advice of the Clean Air Scientific Advisory Committee (CASAC).
- Based on the criteria document, EPA also develops a "staff paper" that helps translate the science into terms that can be used for making policy decisions. The staff paper, prepared by staff in EPA's Office of Air Quality Planning & Standards, includes recommendations to the EPA Administrator about any revisions to the standards needed to ensure that they protect public health with an adequate margin of safety, and that they protect the environment and the public welfare.
- Before either the criteria document or staff paper can be used as the basis for any policy decisions, they undergo rigorous review by the scientific community, industry, public interest groups, the general public and CASAC.
- Based on the scientific assessments in the criteria document and on the information and recommendations in the staff paper, the EPA Administrator determines whether it is appropriate to propose revisions to the standards.

BACKGROUND ON THE 1997 REVISIONS TO PARTICULATE MATTER STANDARDS

- The nation's air quality standards for particulate matter were first established in 1971 and were not significantly revised until 1987, when EPA changed the indicator of the standards to regulate inhalable particles smaller than, or equal to, 10 micrometers in diameter (that's about 1/4 the size of a single grain of table salt).
- Ten years later, after a lengthy review, EPA revised the PM standards, setting separate standards for fine particles (PM_{2.5}) based on their link to serious health problems ranging from increased symptoms, hospital admissions and emergency room visits for people with heart and lung disease, to premature death in people with heart or lung disease.
- The 1997 standards also retained but slightly revised standards for PM₁₀ which were intended to regulate "inhalable coarse particles" that ranged from 2.5 to 10 micrometers in diameter. PM₁₀ measurements, however, contain both fine and coarse particles.
- A number of groups, including the American Trucking Association, sued EPA over the

revised standards for particulate matter and the Agency's revised ozone standards. In May 1999, a panel of the U.S. Court of Appeals for the D.C. Circuit, in a split decision, held that the Clean Air Act – as applied in setting the new public health air quality standards for ozone and particulate matter – was unconstitutional as an improper delegation of legislative authority to EPA.

- The Court of Appeals left the ozone and fine particle standards in place but ruled that EPA could not enforce them. However, the Court vacated the revisions to the PM₁₀ standards, concluding that PM₁₀ is not a good way to measure coarse particles because it includes fine particles.
- EPA appealed the Court's decision on the constitutional issues to the U.S. Supreme Court. In a landmark decision February 2001, the Supreme Court upheld EPA's authority to set national air quality standards that protect millions of people from the harmful effects of air pollution.
- The Supreme Court also affirmed that the Clean Air Act does not allow EPA to consider cost when setting national ambient air quality standards, but requires EPA to set those air quality standards at levels necessary to protect the public health with an adequate margin of safety and to protect public welfare from adverse effects.
- EPA did not appeal the Court of Appeals decision on the coarse particle standards. The Agency is addressing those standards as part of its current PM standards review.
- In March 2002, following the Supreme Court decision on the constitutional issues, the Court of Appeals rejected all remaining challenges to the 1997 standards. Thus, EPA is now moving forward to implement those standards to protect public health and welfare in a timely manner.