The National Ambient Air Quality Standards

OVERVIEW OF EPA'S REVISIONS TO THE AIR QUALITY STANDARDS FOR PARTICLE POLLUTION (PARTICULATE MATTER)

- On Dec. 14, 2012, the U.S. Environmental Protection Agency (EPA) took important steps to protect the health of Americans from fine particle pollution by strengthening the annual health National Ambient Air Quality Standard (NAAQS) for fine particles to 12.0 micrograms per cubic meter ($\mu g/m^3$) and retaining the 24-hour fine particle standard of 35 $\mu g/m^3$. The agency also retained the existing standards for coarse particle pollution (PM_{10}).

- An extensive body of scientific evidence shows that long- and short-term exposures to fine particle pollution, also known as fine particulate matter ($PM_{2.5}$), can cause premature death and harmful effects on the cardiovascular system, including increased hospital admissions and emergency department visits for heart attacks and strokes. Scientific evidence also links PM to harmful respiratory effects, including asthma attacks.

- People most at risk from particle pollution exposure include people with heart or lung disease (including asthma), older adults, children and people of lower socioeconomic status. Research indicates that pregnant women, newborns and people with certain health conditions, such as obesity or diabetes, also may be more susceptible to PM-related effects.

- Particle pollution also causes haze in cities and some of our nation's most treasured national parks.

- Fine particles are 2.5 micrometers in diameter and smaller. They can be emitted directly from a variety of sources, including vehicles, smokestacks and fires. They also form when gases emitted by power plants, industrial processes, and gasoline and diesel engines react in the atmosphere. Sources of inhalable coarse particles, which have diameters between 2.5 and 10 micrometers, include road dust that is kicked up by traffic, some agricultural operations, construction and demolition operations, industrial processes and biomass burning.

- Emission reductions from EPA and states rules already on the books will help 99 percent of counties with monitors meet the revised $PM_{2.5}$ standards without additional emission reductions. These rules include clean diesel rules for vehicles and fuels, and rules to reduce pollution from power plants, locomotives, marine vessels and power plants, among others.

- EPA estimates that meeting the annual primary fine particle standard of 12.0 $\mu g/m^3$ will provide health benefits worth an estimated $4 billion to $9.1 billion per year in 2020 -- a return of $12 to $171 for every dollar invested in pollution reduction. Estimated annual costs of implementing the standard are $53 million to $350 million.

- For fine particles, EPA is:
    - **Strengthening the annual health standard** (primary standard) for $PM_{2.5}$ by setting the standard at 12.0 µg/m^3. The existing annual standard, 15.0 µg/m^3, was set in 1997.
    - **Retaining the existing 24-hour health standard** (primary standard) for $PM_{2.5}$, at 35 µg/m^3. EPA issued the 24-hour standard in 2006.
        - **Retaining the existing secondary standards** for $PM_{2.5}$ to address PM-related effects such as visibility impairment, ecological effects, damage to materials and climate impacts. This includes an annual standard of 15.0 µg/m^3 and a 24-hour standard of 35 µg/m^3. The agency is relying on the existing secondary 24-hour $PM_{2.5}$ standard to protect against visibility impairment, and is not finalizing the separate standard to protect visibility the EPA proposed in June 2012.

        - EPA had proposed to set a separate secondary 24-hour standard to provide protection against PM-related visibility effects; however, after considering public comment on the proposal and further analyzing recent air quality monitoring data, the agency has concluded that the current secondary 24-hour $PM_{2.5}$ standard of 35µg/m^3 will provide visibility protection that is equal to, or greater than, 30 deciviews, the target level of protection the agency is setting today. (A deciview is a yardstick for measuring visibility.)

- **For coarse particles, EPA is retaining the existing 24-hour PM_{10} standards for health and environmental effects (primary and secondary standards).** These standards, set at a level of 150 µg/m^3, have been in place since 1987.

- EPA examined thousands of studies as part of this review of the standards, including hundreds of new studies published since EPA completed the last review of the standards in 2006. The new evidence includes more than 300 new epidemiological studies, many of which report adverse health effects even in areas that meet the current $PM_{2.5}$ standards. EPA also considered analyses by agency experts, along with advice from the Clean Air Scientific Advisory Committee and public comments.

- As part of EPA's commitment to a transparent, open government, the agency sought and received broad public input in setting this standard that provides critical health protection to tens of millions of Americans. EPA held two public hearings on the proposed standards, and received more than 230,000 written comments.

- The Clean Air Act requires EPA to review the particle pollution standards every five years. The revisions, which are a result of that review, also respond to a court remand of portions of the agency's 2006 decision on the $PM_{2.5}$ standards.

More details about today's action:

- Today's rule also addresses several issues related to implementation of the revised standards. Among them:
    - To ensure a smooth transition to the revised standards, EPA will grandfather pending preconstruction permitting applications if either:
        - The permitting agency has deemed the application complete. This must occur by Dec. 14, 2012.
        - The public notice for a draft permit or preliminary determination has been published prior to the date the revised PM standards become effective (60 days after publication in the Federal Register).
    - The agency is making updates and improvements to the nation's $PM_{2.5}$ monitoring network that include relocating a small number of monitors to measure fine particles near heavily traveled roads in areas with populations of 1 million or more. These relocations will be phased in over two years (2015-2017) and will not require additional monitors.
    - In addition, EPA is updating the Air Quality Index (AQI) for $PM_{2.5}$ to be consistent with the final health standards.
- EPA anticipates making initial attainment/nonattainment designations by December 2014, with those designations likely becoming effective in early 2015.
- States would have until 2020 (five years after designations are effective) to meet the revised annual $PM_{2.5}$ health standard. Most states are familiar with this process and can build off work they are already doing to reduce pollution to help them meet the standards.
    - A state may request a possible extension to 2025, depending on the severity of an area's fine particle pollution problems and the availability of pollution controls.
- By law, EPA cannot consider costs in setting or revising national ambient air quality standards. However, to inform the public, EPA analyzes the benefits and costs of implementing the standards as required by Executive Orders 12866 and 13563 and guidance from the White House Office of Management and Budget.

FOR MORE INFORMATION

- To read the final standards and additional summaries, visit http://www.epa.gov/airquality/particlepollution/actions.html