EPA RETAINS AIR QUALITY STANDARDS FOR PARTICLE POLLUTION (PARTICULATE MATTER): FACT SHEET

SUMMARY

- On December 7, 2020, the U.S. Environmental Protection Agency (EPA) announced a final action to retain the nation's current air quality standards for particulate matter, or "PM."
- The decision comes after careful review and consideration of the most recent available scientific evidence and technical information, input from the Clean Air Scientific Advisory Committee and Agency's experts, and consideration of more than 60,000 public comments on the proposal.
- Particle pollution includes fine particles ($PM_{2.5}$), which are 2.5 micrometers in diameter and smaller, and coarse particles, which have diameters between 2.5 and 10 micrometers. Fine particles 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. Coarse particles include road dust that is kicked up by traffic, some agricultural operations, construction and demolition operations, industrial processes and biomass burning.
- As a result of Clean Air Act programs and efforts by state, local and tribal governments, as well as technological improvements, average 24-hour $PM_{2.5}$ concentrations in the U.S. fell by 44 percent between 2000 and 2019 while average 24-hour PM_{10} concentrations fell by 46 percent during the same period.

THE STANDARDS

- The Clean Air Act requires EPA to set two types of National Ambient Air Quality Standards for particle pollution: primary standards, to protect public health, and secondary standards, to protect public welfare. The law requires that primary standards be "requisite to protect public health with an adequate margin of safety," including the health of sensitive groups of people. For PM, scientific evidence suggests that people with heart or lung disease, children and older adults, and nonwhite populations are at particular risk.
- Secondary standards must be "requisite to protect the public welfare" from both known and anticipated adverse effects. Particle pollution causes haze in cities and some of the country's most treasured national parks. In addition, particles such as nitrates and sulfates contribute to acid rain formation which erodes buildings, historical monuments, and paint on cars. Particle pollution also can affect the climate by absorbing or reflecting sunlight, contributing to cloud formation and influencing rainfall patterns.
- The law requires EPA to review national air quality standards every five years to determine whether they should be retained or revised.
- Ecological effects associated with PM are being addressed in the separate review of the secondary NAAQS for oxides of nitrogen, oxides of sulfur and PM.
- EPA reviewed thousands of studies as part of this review of the standards, including hundreds of new studies published since EPA completed the last review in 2012. The new evidence includes many new epidemiologic, controlled human exposure, and animal toxicology studies.

Primary (Health) Standards for Fine Particles:

- EPA established both an annual and a 24-hour standard for fine particles ($PM_{2.5}$) in prior reviews. These standards work together to protect the public from harmful health effects from both long- and short-term fine particle exposures.
    - ***Annual standard***: The annual fine particle standard is designed to protect against health effects associated with both long- and short- term exposure to $PM_{2.5}$. **EPA is retaining the current annual standard with its level of 12.0 micrograms per cubic meter (µg/m³).** An area meets this standard if the three-year average of its annual average $PM_{2.5}$ concentration is less than or equal to the level of the standard. The annual standard has been in place since 2012.
    - ***24-hour standard*:** The 24-hour primary standard is designed to provide supplemental health protection against short-term fine particle exposures, particularly in areas with high peak $PM_{2.5}$ concentrations. **EPA is retaining the existing 24-hour standard, with its level of 35 µg/m³**. An area meets the 24-hour standard if the 98th percentile of 24-hour $PM_{2.5}$ concentrations in one year, averaged over three years, is less than or equal to 35 µg/m³. The current 24-hour standard was issued in 2006.

Primary (Health) Standard for Coarse Particles

- **EPA is retaining the existing 24-hour primary standard for coarse particles (PM_{10}), with its level of 150 µg/m³**. An area meets the 24-hour PM_{10} standard if it does not exceed the 150 µg/m³ level more than once per year on average over a three-year period. The existing PM_{10} particle standard has been in place since 1987.

Secondary (Welfare) Standards for Particle Pollution:

- EPA's current secondary standards for particle pollution are identical to the primary standards for $PM_{2.5}$ and PM_{10}, except for the secondary annual $PM_{2.5}$ standard which has a level of 15.0 µg/m³.

BACKGROUND

- EPA has regulated particle pollution since 1971. The agency has revised the standards four times -- in 1987, 1997, 2006 and 2012 – to ensure they continue to protect public health and welfare. A table of historical PM standards is available at http://www.epa.gov/ttn/naaqs/standards/pm/s_pm_history.html

FOR MORE INFORMATION:

- For more information on particle pollution and to read the final action, visit https://www.epa.gov/pm-pollution
- For technical documents related to this review of the standards, visit https://www.epa.gov/naaqs/particulate-matter-pm-air-quality-standards