

FACT SHEET: NOTICE OF PROPOSED RULEMAKING FOR THE EPA RECONSIDERATION OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS FOR PARTICULATE MATTER

PRIMARY AND SECONDARY STANDARDS FOR FINE PARTICLE POLLUTION (PM_{2.5}) AND COARSE PARTICLE POLLUTION (PM₁₀)

ACTION:

- On January 6, 2023, the U.S. Environmental Protection Agency (EPA) announced a notice of proposed rulemaking to strengthen the nation's national ambient air quality standards (NAAQS) for fine particle pollution, also known as fine particulate matter, or PM_{2.5}.
- Scientific evidence shows that long- and short-term exposures to PM_{2.5} can harm people's health, leading to heart attacks, asthma attacks, and premature death. Large segments of the U.S. population, including children and older adults, people with heart or lung conditions, and minority populations, are at risk of adverse health effects from PM_{2.5}.
- EPA sets two types of NAAQS: health-based standards, called "primary standards," and standards to protect public welfare, called "secondary standards."
- In this action:
 - **EPA is proposing to revise the level of the primary (health-based) annual PM_{2.5} standard from 12.0 micrograms per cubic meter (µg/m³) to a level within the range of 9.0 to 10.0 µg/m³, based on scientific evidence that shows the current standard does not protect public health with an adequate margin of safety, as required by the Clean Air Act (CAA).**
 - While proposing to revise the primary annual standard, EPA is soliciting comment on revising the level as low as 8.0 µg/m³ and up to 11.0 µg/m³.
 - **EPA is proposing to retain the primary 24-hour PM_{2.5} standard at the level of 35 µg/m³. The Administrator proposes to conclude that the scientific evidence does**

EPA's Commitment to Environmental Justice

- PM_{2.5} is a pollutant of great concern to already overburdened and vulnerable communities of color and indigenous and low-income communities throughout the United States.
- Many communities with environmental justice concerns face cumulative impacts from an array of environmental and other threats to their health.
- EPA conducted an at-risk analysis showing that in general, more stringent PM standards are expected to mitigate both PM_{2.5} exposure and mortality risk disparities in people from various demographic groups, including those in vulnerable and overburdened communities.
- Along with proposing to strengthen the primary annual PM_{2.5} standard, EPA is proposing to modify the PM_{2.5} monitoring network design criteria to include an environmental justice factor that accounts for proximity of populations at increased risk of PM_{2.5}-related health effects to sources of air pollution.

not clearly call into question the adequacy of the current standard.

- While proposing to retain the primary 24-hour $PM_{2.5}$ standard, EPA is soliciting comment on revising the level as low as $25 \mu\text{g}/\text{m}^3$.
- EPA is proposing to retain the primary (health-based) 24-hour PM_{10} standard, which provides public health protection against exposures to coarse particles. The Administrator proposes to conclude that the current evidence does not call into question the adequacy of that standard.
- EPA is proposing to retain the current secondary (welfare-based) standards for both $PM_{2.5}$ and PM_{10} . The Administrator proposes to conclude that the available evidence and information do not call into question the adequacy of protection provided by the current secondary PM standards for non-ecological effects (i.e., visibility, climate, and materials effects) at this time. Ecological effects of PM are being reviewed in the separate, on-going review of the secondary NAAQS for oxides of nitrogen, oxides of sulfur, and PM.
 - While proposing to retain the standard, EPA is soliciting comment on revising the level of the secondary 24-hour $PM_{2.5}$ standard as low as $25 \mu\text{g}/\text{m}^3$.
- The Clean Air Act directs EPA to set the primary NAAQS at a level that protects public health, including the health of sensitive or at-risk groups, with an adequate margin of safety. EPA expressly considers the available information regarding health effects among at-risk populations, including information available for how this pollutant impacts minority populations and low socioeconomic status populations, in decisions on the primary NAAQS.
- In developing this proposed rule, EPA considered the thousands of studies in the 2019 PM Integrated Science Assessment (ISA) and the Supplement to the 2019 PM ISA, both of which were made available for public comment and expert review. The studies support a causal relationship between long- and short-term exposures to $PM_{2.5}$ and cardiovascular effects, respiratory effects, nervous system effects, and cancer. New epidemiologic studies support associations between exposure and adverse health effects at levels below the current annual $PM_{2.5}$ standard level.
- EPA also considered the recommendations of the chartered Clean Air Scientific Advisory Committee (CASAC), who provided consensus advice on the need to revise the level of the primary annual $PM_{2.5}$ standard to a level below the current standard to provide additional protection from $PM_{2.5}$ -related health effects.
- By law, EPA cannot consider costs in setting or revising NAAQS. 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.
 - The proposed revised PM standards could result in significant public health benefits valued at as much as \$17 billion in 2032 for an annual standard level of $10 \mu\text{g}/\text{m}^3$ and as much as \$43 billion in 2032 for an annual standard level of $9 \mu\text{g}/\text{m}^3$.

- The proposed revised standards could result in as many as 4,200 avoided premature deaths and 270,000 avoided lost workdays in 2032.
- EPA is also proposing revisions to other key aspects related to the PM NAAQS, including revisions to the Air Quality Index (AQI) and monitoring requirements for the PM NAAQS, with a focus on communities with environmental justice concerns.
 - To enhance protection of air quality, especially in overburdened and vulnerable communities with environmental justice concerns subject to disproportionate air pollution risk, EPA is proposing to modify the PM_{2.5} monitoring network design criteria to include an environmental justice factor. This factor will account for proximity of populations at increased risk of PM_{2.5}-related health effects to sources of air pollution.
 - EPA is also proposing other changes to improve the quality of monitoring data used in regulatory decision making and to better characterize air quality in communities that are at increased risk of PM_{2.5} exposure and health risk.
 - EPA is proposing changes to the Air Quality Index (AQI) to reflect the proposed changes to the primary annual PM_{2.5} standard and reflect recent science on PM_{2.5} and health.
- Improving air quality is a partnership between the federal government, states, and tribes. EPA would work closely with state, local, and tribal air agencies to implement the revised primary annual PM_{2.5} standard, if finalized. In addition, EPA and the states have multiple existing and planned pollution control programs that are expected to continue driving down PM levels across the country, including programs that address the power sector, industrial sources and transportation. If this rule is finalized in its proposed form, these programs will make progress towards achieving the revised annual PM_{2.5} standard in some areas of the country.
- EPA expects to issue a final decision on the PM standards next year. In accordance with the CAA, the Agency will determine which areas of the country meet the standards, i.e., make initial attainment/nonattainment designations, no later than 2 years after new standards are issued. EPA will work closely with states throughout the designations process and there will be opportunity for public comment.
- States must develop and submit attainment plans no later than 18 months after EPA finalizes nonattainment designations. These plans must provide for attainment as expeditiously as practicable but no later than the end of the 6th calendar year after nonattainment designations.

BACKGROUND

- 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.

- 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, the annual and 24-hour PM_{2.5} standards work together to protect the public from harmful health effects from both long- and short-term fine particle exposures. Scientific evidence suggests that people with heart or lung disease, children and older adults, and minority and low socioeconomic status populations are at particular risk of PM-related adverse health effects.
 - Secondary standards must be “requisite to protect the public welfare” from both known and anticipated effects. For this reconsideration, EPA is considering adverse PM-related visibility, climate and materials impacts. 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.
- EPA is considering other welfare effects of PM – such as ecological effects related to deposition of nitrogen- and sulfur-containing compounds in vulnerable ecosystems – in the separate, on-going review of the secondary NAAQS for oxides of nitrogen, oxides of sulfur and PM.
- The Clean Air Act requires EPA to review National Ambient Air Quality Standards every five years to determine whether they should be retained or revised. The PM NAAQS were last revised in 2012.
- The current primary (health-based) and secondary (welfare-based) standards for PM_{2.5} and PM₁₀ are as follows:

Current Standards – Last Revised in the 2008 Revision						
Indicator	Averaging Time	Primary/Secondary	Level	Metric	Revised in 2008	Revised in 2012
PM _{2.5}	Annual	Primary	12.0 µg/m ³	Annual arithmetic mean, averaged over 3 years	Revised level from 15 to 12 µg/m ³	Retained
		Secondary	15.0 µg/m ³		Retained	Retained
	24-hour	Primary and Secondary	35 µg/m ³	98th percentile, averaged over 3 years	Retained	Retained

PM ₁₀	24-hour	Primary and Secondary	150 µg/m ³	Not to be exceeded more than once per year on average over a 3-year period	Retained	Retained
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FOR MORE INFORMATION:

- EPA will accept public comment for 60 days after the proposal is published in the Federal Register. EPA will also conduct a virtual public hearing over several days for this proposed rulemaking, with the hearing beginning at 11:00 am Eastern Time and concluding at 7:00 pm ET each day.
 - EPA will begin pre-registering speakers for the hearing upon publication of the announcement of the public hearings in the Federal Register. Additional information will also be made available at <https://www.epa.gov/national-ambient-air-quality-standards-naaqs-pm>.

- 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](http://www.epa.gov/ttn/naaqs/standards/pm/s_pm_history.html) is available at http://www.epa.gov/ttn/naaqs/standards/pm/s_pm_history.html

- For more information on particle pollution and to read the proposed 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>

- More details on the public hearing, including how to register, are available at <https://www.epa.gov/pm-pollution/national-ambient-air-quality-standards-naaqs-pm>.