



Air Monitoring for Fine Particle Pollution (PM_{2.5}) Fact Sheet

Summary

- On February 7, 2024, the U.S. Environmental Protection Agency (EPA) strengthened the National Ambient Air Quality Standards (NAAQS) for fine particle pollution (PM_{2.5}) by revising the level of the primary (health-based) annual PM_{2.5} standard to 9.0 micrograms per cubic meter (µg/m³). EPA is retaining the primary 24-hour PM_{2.5} standard, with its level of 35 µg/m³.
- EPA is also retaining the primary 24-hour PM₁₀ standard at a level of 150 µg/m³, which provides public health protection against exposures to coarse particles. The Administrator concludes that current evidence does not call into question the adequacy of that standard.
- In addition, EPA is not changing the current secondary (welfare-based) standards for both PM_{2.5} and PM₁₀ at this time. The Administrator concludes 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).

PM_{2.5} Monitoring

- As part of the revisions to the PM_{2.5} NAAQS, EPA is updating key air quality monitoring requirements for fine particles.
- To enhance protection of air quality in communities subject to disproportionate air pollution risk, EPA is modifying 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 air pollution sources of concern.
- PM_{2.5} monitors are required in each metropolitan statistical area (MSA) over 500,000 in population, as well as many lower population areas.
- EPA currently determines how many monitors, at minimum, are required in an area based on two factors: the population of the area, as well as the expected air quality status of the area relative to the NAAQS.
- According to current PM_{2.5} monitoring requirements:
 - At least one monitor must be located at the site of expected maximum PM_{2.5} concentration.
 - For MSAs with a population of 1 million or more people, one additional monitor must be located at a near-road site.

- For some locations, an additional third monitor is required in an area of poor air quality.
- In this rule, EPA is making this requirement more specific by requiring the monitor to be sited in an at-risk community, particularly where there are anticipated effects from sources of air pollution in the area.
- EPA is also finalizing revisions to data calculations and other ambient air monitoring requirements for PM to improve the quality of 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. These revisions include addressing updates in the following:
 - Data calculations
 - Approval of reference and equivalent methods
 - Quality assurance statistical calculations to account for lower concentration measurements
 - Support for improvements in PM methods
 - Probe and Monitoring Path Siting Criteria for NAAQS pollutants
- While EPA is not changing requirements associated with the number of minimally required monitors, the decision to strengthen the primary (health-based) annual PM_{2.5} NAAQS does lead to a small (~1%) increase in the number of minimally required monitors under the existing requirements.
 - There are currently almost 1,000 monitoring stations in the PM_{2.5} monitoring network across the country.
- The initial attainment and nonattainment designations likely will not include data from any newly sited monitors. Three years of data are required for designations.
- The PM_{2.5} monitoring requirements were last updated as a part of the 2012 review of the PM NAAQS. In the 2012 review, the near-road PM_{2.5} monitoring requirement was added.
- EPA is not making changes to monitoring requirements for the PM₁₀ monitoring network.

Upcoming Updates to PM_{2.5} Monitoring Data

- Ensuring that regulatory decisions are based on dependable and accurate air quality data is critical. Better air quality data will allow regulatory air agencies to assist communities in reducing exposures and will also help inform future PM NAAQS reviews.
- EPA's gold standard monitoring method for PM_{2.5}—known as the Federal Reference Method (FRM)—is comprised of filters that must routinely be carefully prepared and installed then removed and evaluated by trained personnel. PM_{2.5} monitoring began in

1999 with all sites utilizing FRMs. By 2008, additional methods, known as Federal Equivalent Methods (FEM)—began to be approved by EPA.

- Because they do not include filters, automated continuous FEMs are an advanced PM monitoring technology that provides more data with fewer staff visits to monitoring sites. For this reason, FEMs have grown in popularity with many states. During the COVID-19 pandemic, continuous PM FEMs allowed an uninterrupted flow of critical PM_{2.5} data to states and EPA.
- Following the advice of the CASAC that “The FEM bias needs to be addressed to make the FRMs and FEMs more comparable.”, EPA plans to address the data bias issue associated with the Teledyne T640/T640X PM_{2.5} FEM monitors, which are widely used across the network. EPA intends to issue a Notice of Availability in early 2024 outlining a plan to address this specific issue.

For More Information

- For more information on particle pollution and to read the final action, visit [PM Pollution](#).