

Guidance for Determining Boundaries of Fine Particle Attainment and Nonattainment Areas

FACT SHEET

TODAY'S ACTION

- In another step to ensure that Americans breathe cleaner air, the Environmental Protection Agency (EPA) has issued guidance for states and tribes to use in identifying areas that meet or do not meet EPA's national air quality standards for fine particles. EPA will consider the state and tribal recommendations as it designates areas as attainment or nonattainment for the fine particle standards.
- This non-binding guidance outlines how states should determine appropriate boundaries for the attainment and nonattainment areas. The term "nonattainment" means an area violates the fine particle standard or that it contributes to violations of the standard in a nearby area.
- Under the process outlined today, EPA plans to make final designations by December 15, 2004. States and tribes should submit their initial recommendations to EPA by February 15, 2004.
- States and tribes should make initial recommendations using air quality data from the years 2000-2002. However, EPA intends to base final designations (in December 2004) on data from 2001-2003, to reflect the most recent three years of data.
- EPA's national air quality standards for fine particles, also known as "PM 2.5 standards," are levels allowed in the outdoor air for particulate matter 2.5 microns in diameter or smaller. EPA issued the PM 2.5 standards in 1997 to protect human health and the environment. Studies have linked increased exposure to PM_{2.5} to increases in premature death as well as a range of serious respiratory and cardiovascular effects.
- Today's guidance encourages states and tribes to base attainment and nonattainment area boundaries on the boundaries of metropolitan areas. Surrounding counties contributing to fine particle pollution in those metropolitan areas also should be included in the nonattainment areas.
- EPA is encouraging states and tribes to use metropolitan area boundaries in an effort to ensure that they consider population density, traffic and commuting patterns, commercial development and area growth when recommending areas for attainment and nonattainment designation. States and tribes will be able to suggest modifications to these boundaries by providing additional information on these and other factors.
- Today's guidance also recommends that states and tribes consider using common boundaries for areas to be classified as nonattainment for both the PM 2.5 and 8-hour ozone standards. Common boundaries will help states and tribes facilitate future planning and implementation activities.

WHAT A NONATTAINMENT DESIGNATION MEANS

- The Clean Air Act requires state and local governments to take steps to reduce fine particle pollution in nonattainment areas. State and local governments must detail these steps in plans demonstrating how they will meet the fine particle standards. Those plans are known as state implementation plans, or SIPs. States and tribes must submit their SIPs to EPA within three years after the Agency makes final designations (by December 2007).
- Attaining the standards in nonattainment areas will require a combination of local emission reductions and regional reductions, such as those that would be achieved under the President's Clear Skies proposal. (For more information on Clear Skies, go to <http://www.epa.gov/clearskies>).
- Nonattainment areas also are subject to a measure known as "transportation conformity," which requires local transportation and air quality officials to coordinate planning to ensure that transportation projects, such as road construction, do not affect an area's ability to reach its clean air goals. Transportation conformity requirements become effective one year after an area is designated as nonattainment.
- Once designated, nonattainment areas also are subject to new source review requirements. New Source Review is a permitting program for industrial facilities to ensure that new and modified sources of pollution do not impede progress toward cleaner air.

HOW THE DESIGNATIONS PROCESS WILL WORK

- States will have until February 15, 2004, to recommend to EPA areas that should be designated as attainment and nonattainment. EPA will review and consider those recommendations, and respond to states and tribes by late summer of 2004. In that response, the Agency will notify states and tribes of any modifications EPA wishes to make to state or tribal recommendations.
- States will have an opportunity to comment on any modifications EPA makes to their recommendations. New air quality data (for the year 2003) will become available in mid-2004. EPA expects to take the 2001-2003 data into consideration when making the final designations (by December 15, 2004.)
- Tribes that have their own air quality programs may submit recommendations for designations; however, they are not required to do so. Because air quality data is lacking in some tribal areas, EPA will work with tribes to determine the appropriate designations. EPA will address all state and tribal lands during the designations process.

BACKGROUND

- ▶ In 1997, EPA issued two standards for fine particles: an annual standard, at 15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$); and a 24-hour PM standard, at $65 \mu\text{g}/\text{m}^3$.

- ▶ Two laws require EPA to designate areas as attainment or nonattainment for the fine particle standards. Those laws are the Clean Air Act and the Transportation Equity Act for the 21st Century (known as TEA-21).
- ▶ TEA-21 requires states to submit recommendations for PM_{2.5} designations to EPA within one year of the time that three years of complete monitoring data become available. Many areas did not collect a complete year of monitoring data in 1999. As a result, state and tribal recommendations for nonattainment areas should be based on 2000 - 2002 data.

Fine Particles

- Particulate matter is a complex mixture of extremely small particles and liquid droplets. Particles smaller than 2.5 microns in diameter are known as “fine particles.”
- Fine particles can be emitted directly or formed secondarily in the atmosphere. Particles emitted directly (also known as primary emissions) come from sources such as diesel engines, wood burning activities, and other industrial and commercial combustion processes.
- “Secondary” particles are those that are formed by reactions of gases in the atmosphere. For example, sulfur dioxide gas from combustion of coal in power plants and industrial boilers reacts with other gases in the atmosphere to form sulfate particles. Similarly, nitrogen oxide gas from combustion sources such as automobiles and industrial facilities forms nitrate particles in the atmosphere.
- Other secondary particles include organic carbon particles, which can be formed when certain volatile organic compounds react with other gases in the atmosphere. Sources of organic particles include burning activities, motor vehicle emissions, and other combustion activities.

Fine Particles and Health

- Many health studies have correlated increased exposure to PM_{2.5} with increases in premature death as well as a range of serious respiratory and cardiovascular effects.
 - ▶ Respiratory effects include aggravation of lung diseases such as asthma and bronchitis. Other symptoms include coughing, chest discomfort, wheezing and shortness of breath.
 - ▶ Cardiovascular symptoms include chest pain, palpitations, shortness of breath, heartbeat irregularities and heart attacks.
- Attainment of the PM_{2.5} national air quality standards could avoid tens of thousands of premature deaths each year. Attainment of the standards could also prevent tens of thousands of hospital admissions, millions of work absences, and millions of respiratory illnesses in children annually.

FOR MORE INFORMATION

- Today’s guidance can be obtained from EPA’s PM_{2.5} implementation web site at:

http://www.epa.gov/ttn/naaqs/pm/pm25_guide.html or on the Policy and Guidance web site at <http://www.epa.gov/ttn/oarpg>.

- For more information about today's guidance, call Tom Rosendahl (919-541-5314) or Rich Damberg (919-541-5592) at the Office of Air Quality Planning & Standards.