

EPA Designates Seven Michigan Counties As PM_{2.5} Nonattainment Areas



On December 17, 2004, the U.S. Environmental Protection Agency (EPA) designated seven Southeast Michigan counties as nonattainment for the criteria pollutant PM_{2.5} (particulate matter less than 2.5 micrometers [μm] in diameter). The counties were Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne (See Figure to the left). A nonattainment designation means either that the area does not meet the National Ambient Air Quality Standard (NAAQS) for that pollutant or the area contributes to another area's nonattainment. The annual PM_{2.5} NAAQS is met at a monitoring site if data averaged over a three-year period has an annual mean of 15.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) or below.

PM is one of the six criteria pollutants monitored by the Department of Environmental Quality's (DEQ's) Air Quality Division (AQD) and is the term used for a mixture of solid particles and liquid droplets found in the air. PM is categorized according to the size and health impact of the particles, e.g., PM₁₀ are coarse particles less than 10 μm in diameter (about one-seventh the diameter of a human hair) and PM_{2.5} are much smaller fine particles equal to or less than 2.5 μm in diameter. Exposure to PM affects breathing, the defenses of the lungs, and aggravates existing respiratory and cardiovascular disease.

Only monitors in Wayne and Monroe counties had a three-year annual mean above the NAAQS with PM_{2.5} concentrations highest in the industrialized area of Detroit. The Wayne County monitors in suburban locations, along with all the surrounding counties (with the exception of Luna Pier in Monroe) are attaining (or below) the NAAQS. The DEQ contends that the most effective local controls would be in those counties with the violating monitors (Wayne and Monroe County), thereby addressing local impacts from those sources suspected of contributing to the area's nonattainment.

The final PM_{2.5} designations were effective on April 5, 2005. EPA's designation notice allowed States to submit quality-assured 2004 monitoring data and a 2002-2004 three-year annual mean by February 2005. If these data and supporting rationale show an area should instead be designated attainment, EPA can change the designation.

Question: What should be done about the PM_{2.5} problem in the Detroit area?