

PM₁₀ Redesignation Request and Maintenance Plan Fact Sheet

On December 13, 2000, the Regional Air Quality Council (RAQC) approved the "PM₁₀ Redesignation Request and Maintenance Plan for the Denver Metropolitan Area." The plan was submitted to the state Air Quality Control Commission (AQCC) on December 14, 2000 with a request for a public hearing. The plan provides for maintenance of the standard through 2015 and asks the U.S. Environmental Protection Agency (EPA) to redesignate the Denver metropolitan nonattainment area to attainment status for the 24-hour PM₁₀ National Ambient Air Quality Standard (NAAQS).

PM₁₀ refers to particulate matter that is 10 microns in diameter or smaller. The particles, consisting of solid or semi-solid material suspended in the atmosphere, are created from re-entrained road dust, automobile and diesel engine exhaust, soot, and sulfates and nitrates (from combustion sources). When inhaled deeply into the respiratory system, PM₁₀ can affect lung and heart function, alter immune system defenses and even contribute to premature death. PM₁₀ affects visibility and may, over time, degrade the natural and built environment.

Designation History

The Denver metropolitan area has been designated a nonattainment area for PM₁₀ since 1987. The current PM₁₀ standard allows for a maximum annual average of 50 micrograms per cubic meter (ug/m³) and a 24-hour average of 150 ug/m³. The 24-hour PM₁₀ standard may not be exceeded more than three times over any three year period or a violation occurs. The Denver metropolitan area has not violated the 24-hour PM₁₀ standard since 1993 and is now eligible for redesignation to attainment. There has never been a violation of the PM₁₀ annual average standard.

Redesignation Requirements

The State of Colorado must meet several requirements for the Denver metro area to be redesignated as an attainment area for PM₁₀, including:

Attainment of the PM₁₀ standard – Data collected from the region's network of eleven monitoring stations demonstrates that the Denver metro area had only one exceedance of the 24-hour standard between 1994 and 1999. As a result, the region has met the PM₁₀ 24-hour standard.

Approval of the PM₁₀ nonattainment SIP Element – The EPA approved a comprehensive PM₁₀ nonattainment State Implementation Plan (SIP) Element for Denver on April 17, 1997. The SIP demonstrated how the region would attain the standard by 1995 and maintain it through 1998.

Improvement in air quality due to permanent and enforceable emission reductions – The Denver metro area has met the national PM₁₀ standard during a period of strong growth in the region, including an 8% growth in vehicle miles traveled (VMT) between 1995 and 2000. The permanent and enforceable measures that have brought the region into attainment include a mix of street sanding controls, woodburning restrictions, the state's vehicle inspection/maintenance program and various industrial source regulations.

Demonstration of specific requirements of the Clean Air Act (CAA) – All of the administrative requirements of Section 110 and Part D of the CAA have been met, including general, PM₁₀-specific and transportation conformity provisions.

Maintenance Plan Components

The "PM₁₀ Redesignation Request and Maintenance Plan for the Denver Metropolitan Area" estimates through dispersion modeling the effect of 2005, 2010 and 2015 emissions to demonstrate continued maintenance of the standard during this time period. The maintenance plan is a requirement for redesignation and must show maintenance of the NAAQS for at least 10 years after EPA approval and redesignation. The 2005, 2010 and 2015 regional emission inventories for primary PM₁₀ and PM₁₀ precursors are below the level necessary to demonstrate continued maintenance of the PM₁₀ standard.

The maintenance plan describes existing or committed control measures that the region will use to keep the Denver metro area in attainment of the standard. The plan takes credit for the following federally enforceable control measures:

Federal fuels and tailpipe standards and regulations – This measure includes federal regulation of motor vehicles, small engines, diesels and non-road mobile sources. It also includes EPA’s regulations adopted in February 2000 for Tier II/gasoline sulfur standards. It does not include EPA’s final rule for diesel vehicles and fuels, which was signed by EPA Administrator Carol Browner on December 21, 2000 – after this maintenance plan was approved by the RAQC.

Woodburning – The maintenance plan continues the AQCC’s Regulation 4, which governs the use of wood stoves, conventional fireplaces and woodburning on high pollution days. It also continues local woodburning ordinances, which the EPA incorporated by reference in the region’s PM₁₀ SIP as part of its 1997 approval of that document.

Street Sanding – This measure includes revisions to the current state-only provisions of the AQCC’s Regulation 16 on street sanding and sweeping requirements. The AQCC is expected to adopt these revisions in conjunction with this maintenance plan. The revisions call for a 30% emissions reduction region-wide (20% in the foothills) from street sanding activities beginning October 1, 2004. These requirements currently are being met in the region. The revisions also will require a 50% emissions reduction in the central Denver area beginning October 1, 2009. The conformity commitments made by CDOT and Denver for this area exceed these requirements.

Automobile Inspection/Maintenance – The maintenance plan takes credit for amendments made to the AQCC Regulation 11 governing the state vehicle inspection/maintenance program. The amendments, adopted as part of the Denver area redesignation request and maintenance plan for carbon monoxide, establish current and future cutpoints for nitrogen oxide (NO_x) emissions and implement a remote sensing clean screen program to augment the current inspection program.

Stationary Sources – The PM₁₀ maintenance plan takes credit for several AQCC regulations that already govern emissions from stationary sources. In addition, the plan takes credit for applicable permits established under the state’s

EPA-approved permit program that limit emissions from individual sources.

Because the region can demonstrate continued maintenance of the NAAQS with the above measures alone, the maintenance plan removes two control measures from the SIP: the diesel inspection/maintenance program and the oxygenated gasoline program. Both programs reduce PM₁₀ by very small amounts and do not contribute significantly to maintenance of the standard. The plan also removes from the SIP several individual stationary source permits that are already federally enforceable without being incorporated into the SIP.

As required by the Clean Air Act, the maintenance plan contains contingency measures that the Denver metropolitan area could enact should the region ever violate the PM₁₀ standard after redesignation to attainment status. These include:

- Reinstating any or all of the control measures that were relaxed or removed from the SIP as part of the maintenance plan;
- Further managing re-entrained road dust by increasing street sweeping requirements, expanding the mandatory use of alternative de-icers, establishing more stringent street sand specifications, and/or improving road paving requirements;
- Expanding woodburning restrictions;
- Re-establishing new source review permitting requirements for stationary sources;
- Requiring the use of Reasonably Available Control Technologies for NO_x emissions;
- Establishing transportation control measures to reduce VMT;
- Improving the diesel inspection/maintenance program;
- Establish a heavy-duty, on road diesel engine retrofit program; and/or
- Implementing other appropriate, cost-effective measures.

The “PM₁₀ Redesignation Request and Maintenance Plan for the Denver Metropolitan Area” is available online at www.raqc.org. For more information, please contact Ken Lloyd or Jerry Dilley at 303-629-5450.

