

DRAFT

Technical Analysis Protocol
for the Spokane PM₁₀ Nonattainment Area
PM₁₀ Limited Maintenance Plan and
Redesignation Request

June 30, 2004

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1.0 Background - This Technical Analysis Protocol (TAP) establishes a plan for developing a PM₁₀ Limited Maintenance Plan (LMP) for the Spokane PM₁₀ nonattainment area (NAA). The TAP and the LMP are developed in cooperation between the Spokane County Air Pollution Control Authority (SCAPCA), the Spokane Regional Transportation Council (SRTC), and the Washington State Department of Ecology. The three agencies are developing a PM₁₀ LMP and a redesignation request for the Spokane area. E.H. Pechan is retained by SCAPCA to assist in this effort.

This TAP contains a description of the technical approach, a review of the status of the area in meeting Clean Air Act (CAA) requirements, and a schedule for the plan development process.

Monitoring data shows that the Spokane NAA attained the PM₁₀ National Ambient Air Quality Standards (NAAQS) in 1997. Moreover, the data show (Appendix A) Spokane qualifies for EPA's LMP option. EPA concurred that Spokane qualified for the LMP option on January 20, 2004.¹

1.1 Air Quality Status - The Spokane area was designated nonattainment for PM₁₀ and classified as moderate by operation of law upon enactment of the CAA Amendments of 1990, based on violations of the federal ambient air quality standards for PM₁₀, in the late 1980's. Ecology submitted the most recent PM₁₀ SIP for the Spokane area on December 9, 1994 which was approved by EPA on January 27, 1997.

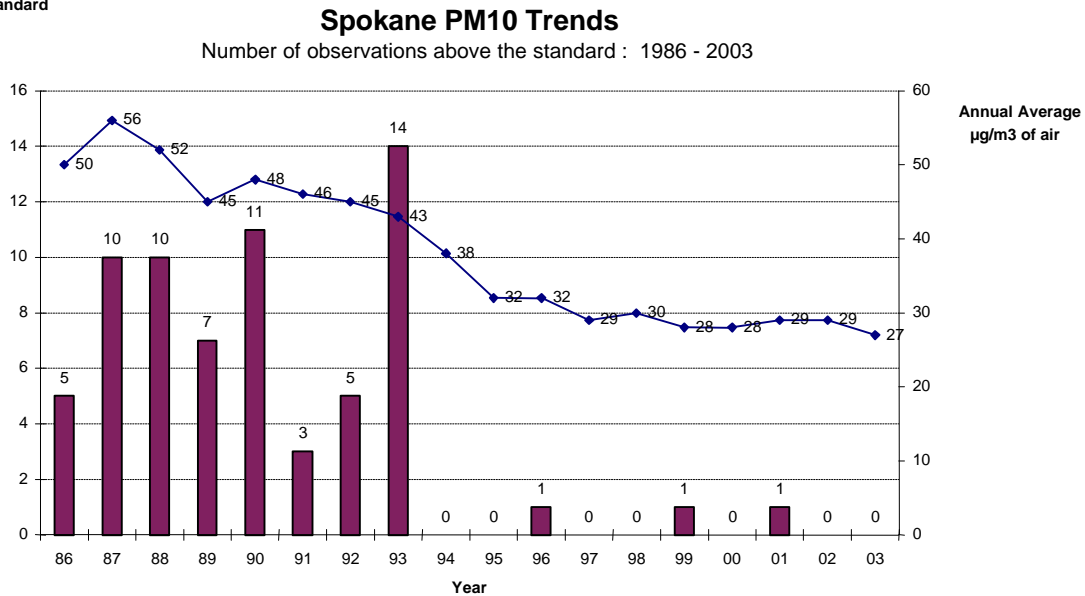
On September 24, 2001 (66 FR 48808) EPA determined that the Spokane NAA attained the 24-hour NAAQS for PM₁₀ by the attainment date of December 31, 1997, as required by the CAA. Figure 1 shows both the 24-hour and annual PM₁₀ trends in the Spokane area. The data shows a decline in annual average PM₁₀ values until about the mid 1990's at which time they begin to level off and remain fairly steady around 29µg/m³. More importantly, from 1993 to 1994 a significant downward turn occurs in the number observations above the 24-hour standard. This improvement in air quality coincides with implementation of the controls measures relied upon for attaining the standard. The control measures are summarized in Section 1.4. .

Spokane recorded three exceedances of the standard in the last 10 years. Each was attributable to windblown dust and documented as a natural event in accordance with EPA's Natural Events Policy (NEP). As such, the data is not used to determine the attainment status of the Spokane area. The last exceedance of the 24-hour standard not attributed to windblown dust was recorded in 1993.

1.2 PM₁₀ Monitoring History - A PM₁₀ monitoring network was established in the Spokane area in October, 1985. Monitoring sites have been located in nine different locations throughout the area since that time. The monitoring network was developed and has since been maintained in accordance with federal siting and design criteria set forth in 40 CFR 58, Appendices D and E and in consultation with EPA, Region 10.

¹ E-mail correspondence from Steve Body (EPA) to Ron Edgar (SCAPCA), January 20, 2004.

Figure 1 of Observations above the Standard



Note: 1. More than one exceedance during a single year at any one site is a violation of the Federal Particulate Standard of 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air
2. The PM10 Standard is a 24 hour average of midnight to midnight.

1.3 Planning Area - The PM_{10} LMP is designed to apply to the area within the geographic boundary of the Spokane PM_{10} NAA which encompasses most of the urbanized area of Spokane County. The NAA area is defined on the south by a line from Universal Transmercator (UTM), Zone 11, coordinate 489000mE, 5271000mN west to 458000mE, 5271000mN, thence north along a line to coordinate 458000mE, 5288000mN, thence east to 463000mE, 5288000mN, thence north to 463000mE, 5292000mN, thence east to 481000mE, 5292000mN, thence south to 481000mE, 5288000mN, thence east to 489000mE, 5288000mN, thence south to the beginning coordinate 489000mE, 5271000mN.

1.4 PM_{10} Control Strategies - The 1994 annual emission inventory indicated that the largest sources of PM_{10} were: unpaved roads (43%), paved roads (20%), residential wood combustion (18%) and industrial (14%). Accordingly, Ecology worked in cooperation with the SCAPCA to develop and implement a control strategy sufficient for attaining and maintaining the PM_{10} NAAQS. The Spokane PM_{10} attainment plan more fully describes the following permanent and enforceable control measures on which the plan relies.

All controls relied on to demonstrate attainment will remain in place through the LMP period.

1.4.1 RACT - The Washington Clean Air Act subjects existing industrial sources to implement RACT (RCW 70.94.154). Additional authority for requiring RACT is found in RCW 70.94.331(9). Various sections of Chapter 173-400 Washington Administrative Code (WAC), General Regulations for Air Pollution Sources set forth provisions for implementing RACT. These include but are not limited to Chapter 173-400-030 (65), -040, -070, -114(2)(a), and -171.

Two major (>100 tpy) stationary source facilities are located within the NAA, the Kaiser aluminum facilities at Trentwood and Mead. These sources were not evaluated specifically for RACT by either Ecology or SCAPCA since analysis of the 24-hour PM₁₀ problem concluded that industrial sources are not a major contributor. The 1994 attainment plan showed attainment is demonstrated for the PM₁₀ sources using allowable emissions from these facilities. Therefore a RACT determination was not necessary and the SIP revision did not include any additional emissions reductions from any stationary sources (61 FR 36001).

1.4.2 RACM - Ecology conducted a RACM analysis in order to identify appropriate control measures for the following significant sources of PM₁₀ in the Spokane nonattainment area: unpaved road and parking lot emission, paved road emissions and emissions from residential wood combustion. The permanent and enforceable control measures resulting from the analysis are shown in Table 1 and are included in Washington’s SIP.

Table 1 – Spokane NAA RACM

Control Measure	Jurisdiction	Authority
Reduce particulate matter by paving unpaved streets	City of Spokane	Res. #90-93
Reduce particulate matter by paving unpaved streets	Spokane County	Res. #90-1219
Reduce fugitive dust from paved roads through sweeping/sanding mitigation program	City of Spokane	Res. #93-43
Reduce particulate matter from paved roads through requirement that governmental entities submit sweeping and sanding plans	SCAPCA	Reg. 1, Sec. 6.14
Reduce residential wood smoke through curtailment program	Washington state	RCW 70.94 and WAC 173-433
Reduce residential wood smoke through implementation of a wood smoke control zone	SCAPCA	Res.’s #88-03, #90-08, #94-02 and #94-18
Reduce fugitive dust from unpaved roads through requirement that governmental entities submit emission reduction and control plans	SCAPCA	Res. #94-17

1.4.3 Kaiser Aluminum – Trentwood Facility - SCAPCA issued regulatory orders for the Kaiser Trentwood facility under WAC 173-400-091 “Voluntary Limits on Emissions”. SCAPCA orders #96-03, #96-04, #96-05 and #96-06 (April 24, 1996) lower the potential to emit and # 91-01 (December 12, 1991) establishes an alternate opacity limit. These orders were adopted into the SIP on January 27, 1997 (62 FR 3800).

SCAPCA submitted revisions for regulatory orders #96-03, #96-05 and #96-06 in 2002 that further limit emissions. Final action by EPA on the revisions is necessary for LMP plan approval.

1.4.4 Best Available Control Measures (BACM) – As presented in Section 1.1, air quality in the Spokane area is occasionally impacted by windblown dust. Under EPA’s NEP, ambient PM₁₀ concentrations raised by unusually high winds are treated as uncontrollable natural events when the dust originates from nonanthropogenic sources, or when the dust originates from contributing anthropogenic sources controlled with BACM. Ecology’s Columbia Plateau Windblown Dust Natural Events Action Plan (NEAP) defines BACM as U.S. Department of Agriculture

Conservation Title Programs – supplemented by incentive-based application of wind erosion conservation practices, also referred to as best management practices (BMPs).

BACM has been applied to agricultural fields in the Spokane NAA and in surrounding counties.

2.0 Risk of a Future Violation - The LMP option is specifically designed to more readily redesignate areas that “...are at little risk...” of violating the PM₁₀ standard. Qualifying for the LMP option shows the Spokane NAA is at little risk of future violations of the PM₁₀ standard.

2.1 Impacts from Outside the NAA – Windblown dust natural events impacted air quality in the Spokane area enough to cause three exceedances of the 24-hour standard, in the last 10 years. Such dust storms may include windblown dust from sources beyond the NAA. As mentioned above, Ecology’s NEAP determined that contributing anthropogenic sources implement BACM in the Spokane NAA and in surround counties.

2.2 Reliance on Unproven PM₁₀ Control Measures - Spokane relied on the control measures summarized in Section 1.4. The RACM measures selected were chosen from a list developed by EPA. EPA approved RACT and RACM for the Spokane area on January 27, 1997.

2.3 Strength of Past Contingency Measures – Four of the five contingency measures identified in the attainment plan have been implemented: 1) Unpaved Road Control Regulation, 2) Parking Lot Paving, 3) Early Implementation of Paved Road Controls, and 4) Trackout Regulation. The strength of these contingency measures is documented in the attainment plan.

3.0 SIP Requirements, Summary of Previous SIP Submittals and Measured Attainment - In accordance with the CAA Amendments, Ecology submitted a SIP revision for Spokane to EPA on November 15, 1991. Ecology submitted an addendum to the November SIP revision on January 31, 1992. Ecology submitted another SIP revision for the Spokane PM₁₀ NAA on December 9, 1994. The 1994 revision demonstrated attainment of the standard by 1994 under stagnant, winter conditions and contained additional control measures, a more detailed technical analysis of the problem, and other improvements to the November 15, 1991 submittal.

Since the 1994 plan did not deal with exceedances caused by windblown dust, Ecology requested that EPA grant a temporary attainment date waiver to provide time to evaluate further the Spokane NAA and to determine the significance of the anthropogenic and nonanthropogenic sources impacting the area. EPA granted the temporary waiver and stated that, either when the evaluation was complete or the temporary waiver expired, EPA would decide whether the area was eligible for a permanent waiver under section 188(f) of the CAA or whether the area had attained the standards by the extended attainment date (62 FR 3802).

On September 24, 2001 (66 FR 48808) EPA determined that the Spokane nonattainment area attained the 24-hour, PM₁₀ NAAQS by the extended attainment date of December 31, 1997.

3.1 Adequacy of Monitoring Network – Ecology annually conducts a review of Washington’s Ambient Air Monitoring Network. These reviews are submitted to EPA, Region 10, for approval.

EPA, Region 10 reviewed the Washington 2003 Ambient Air Monitoring Network and approved the Washington 2004 Ambient Air Monitoring Network, on April 12, 2004.

3.2 Permanent and Enforceable Emission Reductions - The Spokane PM₁₀ Attainment Plan control measures are listed in Section 1.4. These permanent and enforceable measures, the last of which were adopted in 1993 and 1994, resulted in emissions reductions sufficient for attaining the PM₁₀ standard in Spokane.

3.3 Section 110 and Part D requirements – The CAA Amendments stipulate that in order for the Administrator to redesignate an area to attainment the State containing such an area must meet all applicable requirements set forth in Section 110 and Part D. While the attainment plan itself satisfies most of these requirements, three additional requirements must be addressed. They include New Source Review (NSR), a PM₁₀ milestone report and transportation conformity.

EPA approved Washington's NSR regulations on August 20, 1993.

EPA approved the reasonable further progress requirement for all significant sources of PM₁₀ in the Spokane NAA except windblown dust (62 FR 3800). The area is not required to meet (RFP) for windblown dust sources since a temporary waiver was granted.

Transportation conformity is addressed under WAC 173-420 (Washington State Clean Air Conformity Act, February 22, 1993). However, WAC 173-420 has not been adopted into the SIP. Washington State is also required to follow federal rules (40 CFR Part 93) regarding transportation conformity. EPA has determined that since the state is required to follow federal rules a state need not have approved conformity rules for an area to be redesignated to attainment.

4.0 PM₁₀ Limited Maintenance Plan - A Spokane PM₁₀ LMP and redesignation request will be prepared and submitted to EPA for adoption into the SIP. In accordance with EPA guidance and CAA requirements, provisions that are to be included in the plan are summarized, as follows.

4.1 Emission Inventory – The LMP will include a new, current, accurate and comprehensive emission inventory for the NAA. The new emission inventory is expected to confirm our understanding of PM₁₀ emissions in the NAA and assure controls are sufficient for maintaining the standard through the maintenance plan period.

Calendar year 2002 is the base year for the inventory. Inventories will be developed for both annual and winter day emissions; October through February is used to define typical winter day emissions. Neither an intermediate year nor a projected inventory will be included as they are not required for a LMP.

The Inventory Preparation and Quality Assurance Plan (IPP) will be submitted as a single document. The IPP will define the inventory structure, the methods for estimating PM₁₀ emissions for various point, area and mobile sources, level of detail, inventory adjustment factors, growth projections, and quality control procedures for the inventory.

4.2 Maintenance Demonstration – SCAPCA and Ecology demonstrated that the Spokane NAA satisfied EPA’s LMP policy criteria. The LMP qualification is based, in part, on a statistical analysis that shows a high probability to maintain the PM₁₀ NAAQS in the future. Having qualified for the LMP option, future maintenance of the NAAQS is presumed to be satisfied.

4.3 Monitoring Network – The LMP plan provides for continued operation of an EPA-approved PM₁₀ monitoring network, in accordance with 40 CFR, part 58 and LMP guidance.

4.4 Verification of Continued Attainment – SCAPCA will annually recalculate the design value, as required by the LMP policy, to verify the area still qualifies for a LMP. Monitor data for the most recent five years and VMT growth factors will be used and reported to EPA, Region 10. If the area fails to qualify for the LMP policy, SCAPCA will implement the LMP contingency measure. If the area fails a second time to qualify for the LMP, a full maintenance plan will be prepared.

4.5 Control Measures – Since Spokane qualifies for a LMP, existing control measures are presumed to be sufficient to maintain the standard for a 10-year period. Therefore, no additional control measures are expected in the LMP.

4.6 Contingency Measures - Contingency measures will be included in the LMP to satisfy Section 175A of the Act. Contingency provisions will promptly address any violation of the NAAQS after redesignation of the area to attainment. SCAPCA will convene a contingency measure development group to identify the measures to be adopted and provide a schedule and procedure for adoption and implementation of the measures, if they are needed. SCAPCA anticipates that a violation of the standard will trigger implementation of the contingency measure.

4.7 Motor Vehicle Emission Budget – Under a LMP, regional transportation conformity is presumed due to the limited potential for mobile source emission growth in the NAA during the LMP period. For this reason, regional emission analysis on the metropolitan transportation plan and transportation improvement program will no longer be necessary. No motor vehicle emission budget is established by the LMP.

5.0 Project Schedule - SCHEDULE OF MILESTONES AND DUE DATES

Milestone	Date: (week of)
SIP Development Plan to EPA	June 21, 2004
EPA response	July 12, 2004
Draft TAP to EPA	July 1, 2004
EPA response	July 12, 2004
Draft IPP to EPA	July 1, 2004
EPA response	July 19, 2004
Draft Emission Inventory to EPA	July 19, 2004
EPA response	August 9, 2004
Draft LMP to EPA	August 30, 2004
EPA response	September 13, 2004
Local and SIP adoption hearings advertised	October 4, 2004
Local adoption/ Ecology SIP hearing	November 8, 2004
Plan submittal to EPA	November 15, 2004

