




WASHINGTON STATE
DEPARTMENT OF
E C O L O G Y

**A Plan for Maintaining
Particulate Matter (PM10) National Ambient
Air Quality Standards in the Spokane
Moderate Nonattainment Area**

A Washington State Implementation Plan Revision

Public Review Draft

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Acronyms and Abbreviations

AIRS	Aerometric Information Retrieval System
BACM	Best Available Control Measures
CAA	Clean Air Act
CERR	Consolidated Emissions Reporting Rule
DV	design value
Ecology	Washington State Department of Ecology
EGAS	Economic Growth Analysis System
EPA	U.S. Environmental Protection Agency
FAA	Federal Aviation Administration
IPP/QAP	Inventory Preparation Plan and Quality Assurance Plan
LMP	Limited Maintenance Plan
LPG	liquefied petroleum gas
LTO	landing and take off
MOS	Margin of Safety
NAA	nonattainment area
NAAQS	National Ambient Air Quality Standards
NAMS	National Ambient Monitoring Sites
NEAP	Natural Events Action Plan
NEP	Natural Events Policy
NSR	New Source Review
Pechan	E.H. Pechan & Associates, Inc.
PEI	Periodic Emissions Inventory
PPD	planning period daily
RACM	Reasonable Available Control Measures
RACT	Reasonable Available Control Technology
RFP	reasonable further progress
RWC	residential wood combustion
SCAPCA	Spokane County Air Pollution Control Authority
SIP	State Implementation Plan
SLAMS	State and Local Ambient Monitoring Sites
SRTC	Spokane Regional Transportation Council
TAP	Technical Analysis Protocol
VMT	vehicle miles traveled
WSDOT	Washington State Department of Transportation

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SUMMARY

The Federal Clean Air Act (FCAA) states that an area can be redesignated to attainment if specific criteria are met. Section 107(d)(3)(E) of the FCAA details the criteria, one of which is a fully approved maintenance plan for the nonattainment area (NAA). In August 2001, the U.S. Environmental Protection Agency (EPA) issued the *Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas* that allows states to submit a maintenance plan that is more streamlined than would ordinarily be required. The Limited Maintenance Plan (LMP) Option is specifically designed to more readily redesignate areas that are at little risk of violating the PM₁₀ National Ambient Air Quality Standard (NAAQS).

Monitoring data shows that the Spokane NAA attained the PM₁₀ standard in 1994; both the average and peak PM₁₀ levels have declined substantially from those that resulted in nonattainment. Moreover, the data show that PM₁₀ concentrations have improved such that Spokane qualifies for EPA's LMP option. A LMP presumes that the current PM₁₀ levels and the potential for future growth in mobile source emissions provide minimal risk of violating the NAAQS. Under a LMP, regional transportation conformity regional analysis is assumed; no motor vehicle emissions budget is established.

EPA approved the Spokane NAA PM₁₀ attainment plan (62 FR 3800, January 27, 1997) that attributed PM₁₀ emissions predominately to unpaved (43%) and paved roads (20%). The attainment demonstration was largely based on implementing control measures that reduced PM₁₀ emissions generated from these sources. These controls continue to remain effective at reducing these PM₁₀ emissions.

This LMP formally requests that EPA redesignate the Spokane PM₁₀ NAA to attainment. It demonstrates that the Spokane NAA meets the FCAA requirement for attainment and that air quality improvements resulted from permanent and enforceable emission reductions.

The attainment emission inventory for the LMP was developed for C.Y. 2002. The continued use of the existing federal, state and local regulatory and voluntary control strategies provide adequate assurance of maintaining the NAAQS for 10 years following EPA approval and redesignation to attainment. The plan includes air quality contingency measures that may be implemented, as needed.

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I. Introduction

The Spokane area is designated nonattainment for particulate matter air pollution equal to or less than 10 microns in size (PM₁₀). This means that, in the past, the area did not meet federal health-based standards for PM₁₀. As the area has been meeting the standards it can now be redesignated to attainment by the federal Environmental Protection Agency (EPA).

The Washington State Department of Ecology (Ecology) and the Spokane County Air Pollution Control Authority (SCAPCA) have prepared this plan, called a Limited Maintenance Plan, for PM₁₀. This plan demonstrates that the Spokane area meets federal Clean Air Act requirements for PM₁₀. It also summarizes the progress of the area in attaining the PM₁₀ standard, demonstrates that the Spokane area qualifies for EPA's Limited Maintenance Plan option, and includes a maintenance plan to assure continued attainment for ten years after the redesignation.

The plan includes a formal request to EPA to redesignate the Spokane, Washington PM₁₀ nonattainment area to attainment for the federal, health-based, PM₁₀ National Ambient Air Quality Standard.

II. Demonstration of Attainment of the NAAQS

On July 1, 1987, the EPA revised Title 40, Part 50, Code of Federal Regulations (40 CFR 50), which changed the particulate matter National Ambient Air Quality Standards (NAAQS) from total suspended particulate to particulate matter ten or less microns in size (PM₁₀). The standard was changed to better protect public health and the environment. The primary and secondary NAAQS for PM₁₀ are for 24-hour and annual concentrations, as follows:

24-Hour Standard

The NAAQS for PM₁₀ is 150 µg/m³ for a 24-hour average concentration. The standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is less than or equal to one, as determined in accordance with 40 CFR 50, Appendix L.

Annual Standard

The annual NAAQS for PM₁₀ is 50 µg/m³ for an annual arithmetic mean. The standard is attained when the expected annual arithmetic mean concentration is less than or equal to 50 µg/m³, as determined in accordance with 40 CFR 50, Appendix L.

The Spokane, Washington, area was designated nonattainment for PM₁₀ and classified as moderate by operation of law upon enactment of the Clean Air Act (CAA) Amendments of 1990 (56 FR 56694, November 6, 1991). The nonattainment classification was based on violations of the 24-hour standard that occurred in the late 1980's.

This section discusses how EPA determines whether or not an area, such as Spokane, has attained the NAAQS. Moreover, it describes how EPA determined the Spokane NAA attained the standard by the attainment date required by the CAA.

A. Monitored Attainment

EPA determines whether an area's air quality is meeting the PM₁₀ NAAQS based upon monitored data gathered in accordance with federal siting and design criteria set forth in 40 CFR Part 58. Ecology has continuously operated a PM₁₀ monitoring network in the Spokane area since 1985 that meet these criteria.

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.

The Spokane PM₁₀ monitor located at Crown Zellebach (CZ), since 1990, is the design monitor for the Spokane area and qualifies both as a State and Local Air Monitoring Station (SLAMS) and a National Air Monitoring Station (NAMS). PM₁₀ data for the CZ monitor may be found in EPA's Aerometric Information Retrieval System (AIRS). Data entered into the AIRS has been determined to meet federal monitoring requirements and may be used in determining an area's attainment status.

Attainment of the annual PM₁₀ standard is achieved when the annual arithmetic mean PM₁₀ concentration over a three-year period (for example 1995, 1996, and 1997 for areas with a December 31, 1997, attainment date) is equal to or less than 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Attainment of the 24-hour standard is determined by calculating the expected number of days in a year with PM₁₀ concentrations greater than 150 $\mu\text{g}/\text{m}^3$. The 24-hour standard is attained when the expected number of days with levels above 150 $\mu\text{g}/\text{m}^3$ (averaged over a three-year period) is less than or equal to one. Three consecutive years of air quality data are generally required to show attainment of the annual and 24-hour standards for PM₁₀.

For an area with an attainment date of December 31, 1997, such as Spokane, data reported for calendar years 1995, 1996 and 1997 are considered. The air quality data in AIRS for the Spokane monitors show there were no violations of the annual PM₁₀ standard for the three years 1995 – 1997. A review of data for subsequent years, through 2003, confirms there have been no violations of the annual standard. Thus, Spokane attained the annual PM₁₀ standard by the December 31, 1997, attainment date and continues to attain the standard.

Regarding the 24-hour standard, a review of the data for the three years 1995-1997 shows there was one exceedance of the 24-hour standard, recorded on August 30, 1996. Ecology flagged the exceedance as caused by high winds, under EPA's Natural Events Policy (NEP). EPA concurred with that determination and therefore excluded the data from the attainment assessment (66 FR 48808, September 24, 2001). As a result, the expected number of days over the 24-hour standard when averaged over the three year period is 0.0. Thus, Spokane attained the 24-hour PM₁₀ standard by the December 31, 1997, attainment date.

Similarly, a review of the data for the three years 1998-2000 shows there was one exceedance of the 24-hour standard, recorded on September 25, 1999. Ecology also flagged this exceedance as caused by high winds and EPA concurred with that determination (66 FR 48808, September 24, 2001). As a result, the expected number of days over the 24-hour standard when averaged over the

three year 1998-2000 period is 0.0. Thus, Spokane attained the 24-hour PM₁₀ standard by the December 31, 1997, attainment date and continues to attain the standard.

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

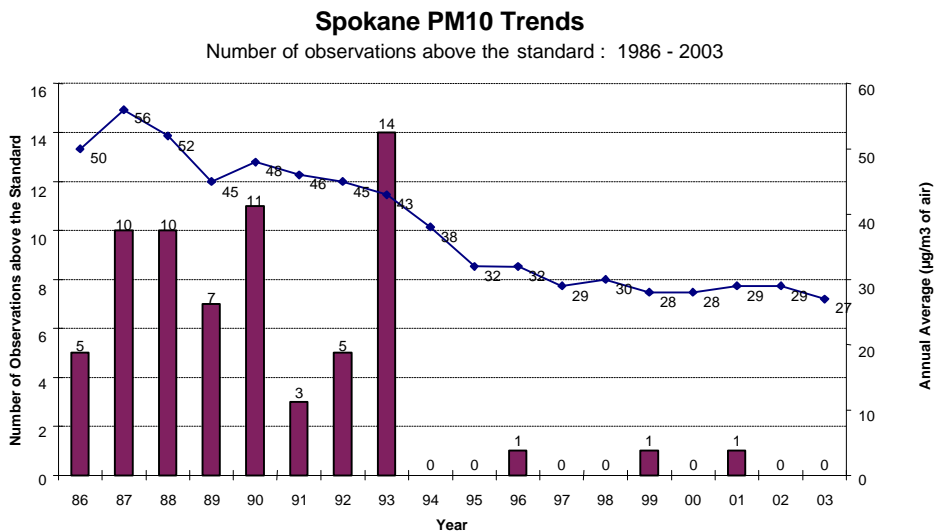
B. Other Attainment Documentation

This section provides an overview of PM₁₀ monitoring in the Spokane NAA including a summary of historical 24-hour and annual average PM₁₀ concentrations.

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 29 μg/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 III.

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 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.

Figure 1



- 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 (µg/m³) of air
 2. The PM₁₀ Standard is a 24 hour average of midnight to midnight.

III. Summary of Fully Approved Moderate Area Attainment Plan

The Clean Air Act requires each state to develop air pollution regulations and control strategies to meet the PM₁₀ standard and the other federal health-based standards. These regulations and strategies constitute the State Implementation Plan (SIP). The Clean Air Act requires that the SIP be submitted to EPA for review and approval.

Areas meeting the requirements of section 107(d)(4)(B) of the Clean Air Act were designated nonattainment for PM₁₀ by operation of law and classified as “moderate” upon enactment of the 1990 Clean Air Act Amendments. The Spokane PM₁₀ nonattainment area was one of these initial moderate PM₁₀ nonattainment areas. As such, the state was required to prepare a plan to attain the standard as a revision to the SIP. Such plans must provide an inventory of the sources and amounts of pollutant emissions, project the inventory to the attainment year, apply a control strategy, and demonstrate that the control strategy is adequate to bring the area into attainment. Contingency measures must be implemented if the area fails to attain the standard by the attainment date.

A full listing of the components of a moderate PM₁₀ attainment plan is as follows:

- a comprehensive, accurate, current inventory of actual PM₁₀ emissions from all sources as of 1990
- provisions for implementation of Reasonably Available Control Measures (RACM) and Reasonably Available Control Technology (RACT)
- a demonstration that the plan provides for attainment of the PM₁₀ standard by the attainment date of December 31, 1994
- contingency measures to be implemented if the area fails to meet the PM₁₀ standard by the attainment date
- quantitative milestones which are to be achieved every three years and which demonstrate reasonable further progress (RFP) toward attainment by December 31, 1994
- New Source Review rules for permitting major new sources and major modifications to existing sources
- commitment to demonstrate that the control measures have been implemented and the milestone has been met

Table 1 summarizes moderate area attainment plan requirements, the dates of submittals to EPA, and the approval status.

A. Plan Approval

In accordance with the CAA, Ecology submitted a SIP revision for the area to EPA on November 15, 1991. The attainment plan applies to the area displayed in Figure 2. The NAA 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.

The SIP revision used rollback modeling to demonstrate attainment of the standard; however, EPA subsequently requested that dispersion modeling be used. Ecology submitted an addendum to the November SIP revision that contained a regulatory order on January 31, 1992. On December 9, 1994 Ecology submitted the Spokane PM₁₀ Attainment Plan for the Spokane PM₁₀ nonattainment area.

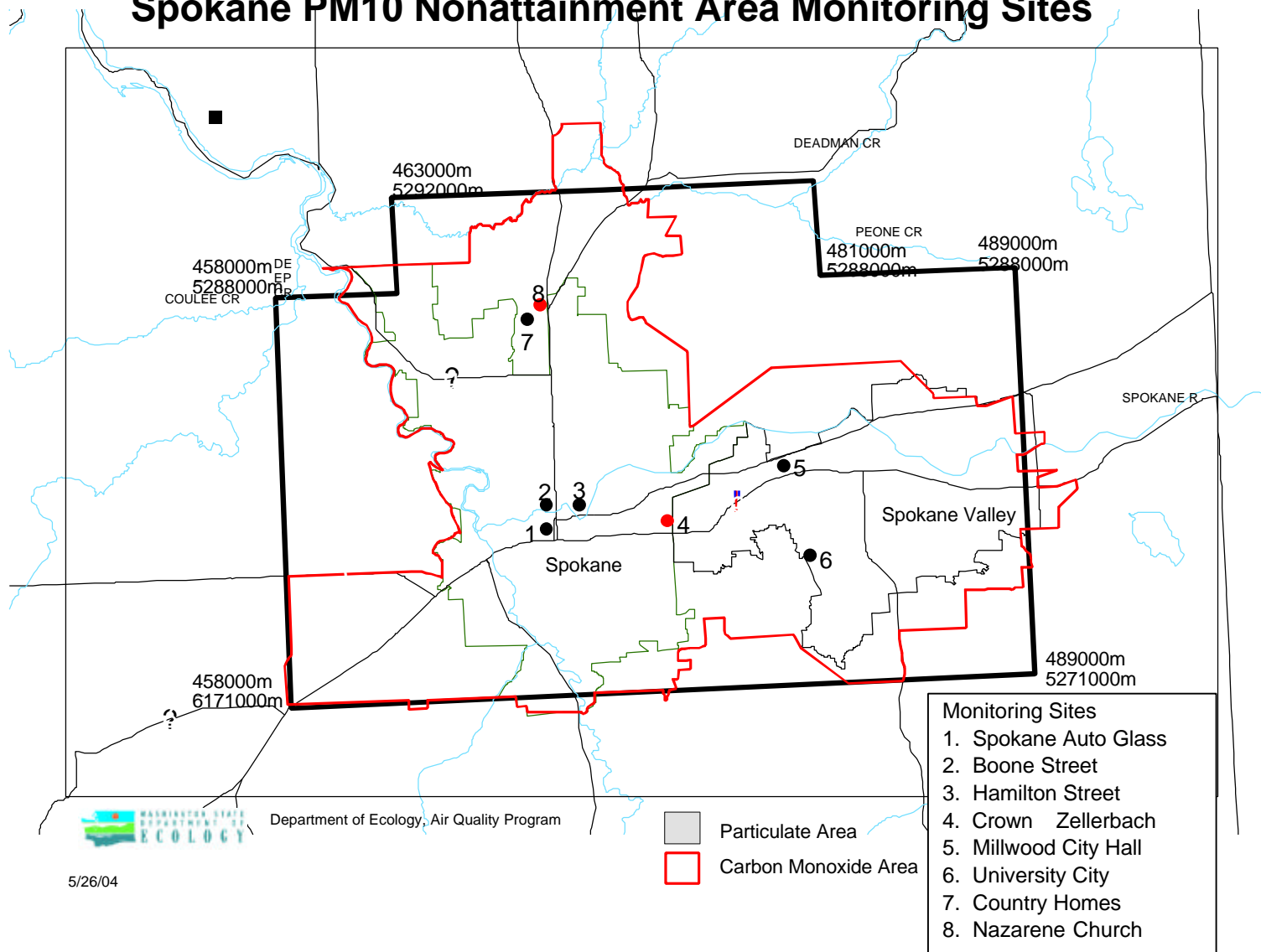
The 1994 attainment plan contained additional control measures, a more detailed technical analysis of the problem, and other improvements to the November 15, 1991 submittal. In addition to dispersion modeling to demonstrate attainment of the standard under stagnant, winter conditions, the attainment plan detailed an inventory of emissions in the area. The emission inventory revealed that the largest sources of PM₁₀ were: unpaved roads (43%), paved roads (20%), residential wood combustion (18%) and industrial sources (14%). Accordingly, Ecology worked with the SCAPCA to develop and implement a control strategy sufficient for attaining and maintaining the PM₁₀ NAAQS. Part C of this section describes the permanent and enforceable control measures on which the plan relied to demonstrate attainment.

Table 1 - Attainment Plan Requirements and Approval Status

Requirement	Submittal Date	Federal Register Action
Emission inventories <ul style="list-style-type: none"> • 1990 base year • 1994 projected & 1997 maintenance 	November 15, 1991 December 09, 1994	Approved (62 FR 3800, January 27, 1997) Confirmed (64 FR 17545, April 12, 1999)
RACM, Agricultural Windblown Dust (FSA soil conservation requirements, e.g., farm plans and the CRP)	November 15, 1991 Additional information: <ul style="list-style-type: none"> • May 18, 1993 • June 23, 1994 	Approved (62 FR 3800, January 27, 1997)
RACM, Paved and Unpaved Roads (paving and dust control treatments)	December 09, 1994	Approved (62 FR 3800, January 27, 1997) Updated (64 FR 17545, April 12, 1999)
RACM, Residential Wood Combustion (wood stove curtailment)	December 09, 1994	Approved (62 FR 3800, January 27, 1997)
RACT (existing controls)	December 09, 1994	Approved (62 FR 3800, January 27, 1997)
Attainment Demonstration	December 09, 1994	Approved (62 FR 3800, January 27, 1997)
Contingency Measures – <ul style="list-style-type: none"> • unpaved roads/parking lots • paved roads • residential wood combustion see Section IV discussion for details	December 09, 1994	Approved (62 FR 3800, January 27, 1997)
Quantitative Milestones which demonstrates reasonable further progress (RFP) toward attainment by December 31, 1994	December 09, 1994	Approved (62 FR 3800, January 27, 1997)
New Source Review	January 22, 1993 Revised March 8, 1994	Approved (60 FR 28726, June 2, 1995)
PM ₁₀ Precursors: Exclusion from Requirements	December 09, 1994	Approved (62 FR 3800, January 27, 1997)

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Spokane PM10 Nonattainment Area Monitoring Sites



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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 of windblown dust 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 3800, January 27, 1997).

EPA approved the Spokane PM₁₀ Attainment Plan on January 27, 1997 (62 FR 3800, January 27, 1997). On September 24, 2001 (66 FR 48808, September 24, 2001) EPA determined that the Spokane nonattainment area attained the 24-hour, PM₁₀ NAAQS by the extended attainment date.

B. Approval of 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 including those 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), transportation conformity and a PM₁₀ milestone report which demonstrates reasonable further progress toward attainment by December 31, 1994.

EPA approved Washington's NSR regulations on August 20, 1993 and EPA approved the reasonable further progress requirement for all significant sources of PM₁₀ in the Spokane NAA except windblown dust (62 FR 3800, January 27, 1997). 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). 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. The State of Washington does not have EPA-approved conformity rules.

C. Permanent and Enforceable Emission Reductions

1. Reasonably Available Control Measures (RACM)

As discussed above, the 1994 attainment emission inventory indicated that the largest sources of PM₁₀ in the nonattainment areas were: unpaved roads, paved roads, residential wood combustion, and industrial. In order to control the sources most significantly contributing to PM₁₀ emissions, Ecology and SCAPCA conducted a RACM analysis to identify appropriate control measures. The control measures resulting from the analysis are shown in Table 3.

Emission sources in the nonattainment area have been implementing RACM, the last of which were adopted in 1993 and 1994, for at least ten years. The control measures were adopted into SIP thus they are both permanent and federally enforceable. As well, it can be expected that conditions

over the past ten years have been sufficiently variable that the monitored reductions in PM₁₀ emissions are not attributable to temporary economic turndown or unusually favorable meteorology.

Table 2 – Spokane Nonattainment Area Reasonable Available Control Measures

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

2. Reasonably Available Control Technology

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, July 9, 1996).

The Washington Clean Air Act provides for 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.

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 as SIP revisions and approved by EPA on January 27, 1997 (62 FR 3800, January 27, 1997). SCAPCA submitted revisions for regulatory orders #96-03, #96-05 and #96-06 in 2002 that further limit emissions.

3. Additional Controls

Best Available Control Measures (BACM)

As presented in Section I 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). Moreover, Ecology's Columbia Plateau Windblown Dust NEAP determined that BACM has been applied to agricultural fields in the Spokane NAA and in surrounding counties.

IV. Air Quality Maintenance Plan

In August 2001, EPA issued the *Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas* that allows states to submit a maintenance plan that is more streamlined than would ordinarily be permitted. The LMP option is specifically designed to more readily redesignate areas that are at little risk of violating the PM₁₀ standard.

A LMP presumes that the current PM₁₀ levels and the potential for future growth in mobile source emissions provide minimal risk of violating the NAAQS. For this reason, under a LMP regional transportation conformity regional analysis is assumed; no motor vehicle emissions budget is established.

Monitoring data shows that the Spokane NAA attained the PM₁₀ NAAQS in 1997; both the average and peak PM₁₀ levels have declined substantially from those that resulted in nonattainment. Moreover, the data show that PM₁₀ concentrations have improved such that the Spokane NAA qualifies for EPA's LMP option. The analysis pertaining to the LMP qualification, summarized here, is found in Appendix XX.

1. Policy: "The area should be attaining the NAAQS and the average PM₁₀ design value for the area, based on the most recent 5 years of air quality data at all monitors in the area, should be at or below 40 µg/m³ for the annual and 98 µg/m³ for the 24-hr PM₁₀ NAAQS with no violations at any monitor in the nonattainment area."

Spokane:

- Spokane is attaining the standard.
- The annual design value based on 1998-2002 is 25 µg/m³.
- The 24-hour design value based on 1998-2002 is 94 µg/m³.
- There have been no violations of the 24-hour PM₁₀ NAAQS since 1993.

2. Policy: "If an area cannot meet this test it may still be able to qualify for the LMP option if the average design values of the site are less than their respective site-specific [critical design value] CDV."

Spokane:

➤ Since Spokane meets the requirement for a design value at or below $98 \mu\text{g}/\text{m}^3$ with a 5-year design value of $94 \mu\text{g}/\text{m}^3$, it does not need to satisfy this second qualification. Nevertheless, Spokane does meet the qualification as Spokane's design value of $94 \mu\text{g}/\text{m}^3$ is less than the critical design value of $113 \mu\text{g}/\text{m}^3$.

3. Policy: "The area should expect only limited growth in on-road motor vehicle PM_{10} emissions (including fugitive dust) and should have passed a motor vehicle regional emissions analysis test."

Spokane:

➤ When adjusted for future on-road mobile emissions, Spokane passes a motor vehicle regional emissions analysis test with a design value of $97 \mu\text{g}/\text{m}^3$. This is less than the $98 \mu\text{g}/\text{m}^3$ used as the margin of safety in the LMP guidance.

The motor vehicle regional analysis for the Spokane NAA was performed using the methods described in Attachment B of the LMP option for Moderate PM_{10} Nonattainment Areas memorandum. The equation set forth in this guidance is:

$$DV + (\text{VMT}_{\text{pi}} * DV_{\text{mv}}) = \text{MOS}$$

Ecology and SCAPCA recognized, however, that the small amount of vehicle miles traveled (VMT) on unpaved roads contributes disproportionately to the emission inventory. Moreover, while paved road VMT increases between 2000 and 2010, unpaved road VMT decreases. For this reason, Ecology and SCAPCA determined to distinctly and accurately account for paved and unpaved roads in the above equation in the following manner:

$$DV + (\text{VMT}_{\text{pi-paved}} * DV_{\text{mv-paved}}) + (\text{VMT}_{\text{pi-unpaved}} * DV_{\text{mv-unpaved}}) = \text{MOS}$$

When adjusted for future on-road mobile emissions, the motor vehicle regional emissions analysis set forth in the attachment shows a design value of $97 \mu\text{g}/\text{m}^3$. Being less than the $98 \mu\text{g}/\text{m}^3$ used as the margin of safety in the LMP guidance, Spokane therefore qualifies for the LMP approach.

The annual average for the period of the analysis 1998-2002, according to the latest complete data, is $25 \mu\text{g}/\text{m}^3$ which meets the policy guidance of $< 40 \mu\text{g}/\text{m}^3$ for the annual design value. The design value for the 24-hour PM_{10} NAAQS is $97 \mu\text{g}/\text{m}^3$, which meets the LMP policy guidance of $< 98 \mu\text{g}/\text{m}^3$ for the 24-hour design value.

EPA concurred that Spokane qualified for the LMP option on January 20, 2004.¹

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

A. Attainment Emission Inventory

A 2002 annual and planning period daily (PPD) emission inventory was prepared for PM₁₀ emissions in the Spokane nonattainment area. Table 3 presents a summary of 2002 PM₁₀ emissions for Spokane County and the Spokane PM₁₀ NAA.

The general approach to developing the emission estimates was to start with an annual Spokane County emission estimate. The annual emission estimates were then temporally allocated to PPD estimates using available information on seasonal/monthly source activity and weekly source activity (i.e., weekday versus weekend day). The county-level emission estimates were allocated to the NAA using available spatial information (e.g., point locations, geographic information system shape files).

The 2002 PM₁₀ emission inventory reflects zero emissions from Kaiser Mead because the plant last operated in 2000. The facility has since been sold to Commercial Development Corporation (CDC). CDC does not intend to resume full plant operation; rather, they are in the process of developing all but the carbon plant portion of the facility. CDC is interested in selling the carbon plant in the future and it may at some point become operational.

Significant contributors to PPD emissions in the PM₁₀ NAA include fugitive dust from unpaved roads (46 %) and residential wood combustion (29%). The next highest contributors are fugitive dust from construction (6%), paved roads (3%), and emissions from land clearing debris burning (3%). All other source categories each contribute 2% or less to the NAA PPD emissions.

Details on the sources of data, methods used to estimate county-level emissions, methods used to temporally and spatially allocate emissions to the NAA are found in Appendix X. More details on the methods used to estimate emissions from the on-road sector are provided in the write-up from SRTC, which is provided as Appendix X.

B. Control Measures Necessary to Maintain the NAAQS

Spokane relied on the RACM measures summarized previously to attain the standard. They continue to be implemented and have proven effective at reducing PM₁₀ emissions in the Spokane NAA.

In accordance with the EPA's LMP policy, all controls relied on to demonstrate attainment will remain in place through the maintenance plan period. The RACM measures selected were chosen from a list of proven controls developed by the EPA. EPA approved Spokane's control measures on January 27, 1997 (62 FR 3800, January 27, 1997). No additional LMP control measures are necessary to maintain the NAAQS.

Table 3 – 2002 PM₁₀ Emission Inventory

Source Sector	2002 Spokane County			2002 PM ₁₀ NAA	
	Annual (tons)	PPD (tons)	Data Source ¹	Annual (tons)	PPD (tons)
AREA SOURCES					
Stationary Source Fuel Combustion					
Non-Residential	77.0	0.25	Pechan	67.8	0.22
Residential Non-Wood	43.6	0.18	Pechan	34.23	0.14
Residential Wood	2,685	10.6	CERR Submittal	2,107	8.9
Waste Disposal, Treatment and Recovery					
Land Clearing Debris					
Burning	324	0.89	2002 NEI V1	291	0.80
Residential Open Burning					
Yard Waste	37.3	0.11	CERR Submittal	29.3	0.09
Household Waste	263	0.77	CERR Submittal	206	0.60
Fugitive Dust ²					
Agricultural Tillage	3,985	13.1	CERR Submittal	14.3	0.05
Paved Roads	446	1.12	Pechan	331	0.83
Unpaved Roads	8,489	21.3	Pechan	5,637	14.1
Construction	647	2.5	Pechan	479	1.8
Other Area Sources					
Wildfires	47.6	0.13	2002 NEI V1	0.000	0.000
Prescribed Burning	187	0.60	CERR Submittal	0.000	0.000
Slash Burning	6.3	0.02	Pechan	6.3	0.02
Structure Fires	4.8	0.01	2002 NEI V1	3.8	0.01
Firefighting Training	0.21	0.001	Pechan	0.21	0.001
Agricultural Field Burning	0.95	0.000	Pechan	0.03	0.000
Mining and Quarrying	174	0.48	2002 NEI V1	174	0.48
Commercial Cooking	155.4	0.43	2002 NEI V1	141.8	0.39
NON-ROAD MOBILE SOURCES					
Aircraft	16.2	0.04	Pechan	16.2	0.04
Locomotives	182	0.50	CERR Submittal	65.9	0.18
NONROAD model sources	296	0.52	Pechan	128	0.29
ON-ROAD MOBILE SOURCES	274	0.75	SRTC	202	0.56
POINT SOURCES					
Controlled Emissions	183	0.66	Ecology	55.8	0.15
Uncontrolled Process					
Fugitives	32.8	0.09	Ecology	32.4	0.09
Other	57.1	0.21	Ecology	26.2	0.21
Totals	18,612	55.1		10,059	30.0

Note: totals may not add exactly due to rounding.

¹ Pechan = Estimate developed by Pechan; CERR Submittal = 2002 Consolidate Emissions Reporting Rule submittal from Ecology to EPA; 2002 NEI V1 = EPA's 2002 National Emissions Inventory, Version 1; SRTC = Spokane Regional Transportation Council.

² These estimates have not been adjusted to account for the amount of PM₁₀ that is actually transported from the source.

C. Maintenance Demonstration

In order to qualify for the LMP option, an area must satisfy the criteria summarized previously. In part, criteria for the LMP qualification are based on a statistical analysis such that, when satisfied, demonstration of maintenance is established. The LMP criteria and Ecology's analysis showing that the Spokane NAA qualifies for the LMP option are found in Appendix B. Having qualified for the LMP option, maintenance of the standard is presumed to be satisfied.

D. Monitoring Network

1. Monitoring Network

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 Part 58, Appendices D and E and in consultation with EPA, Region 10.

Ecology and SCAPCA commit to maintaining a monitoring network through the LMP period. The network will be maintained in accordance with federal siting and design criteria set forth in 40 CFR Part 58.

E. Verification of Continued Attainment

The monitoring network will be used to verify continued maintenance of the standard through the maintenance plan period.

Starting fall, 2005, Ecology and SCAPCA, will annually recalculate the design value using the most recent five year monitor data in order to verify the area continues to qualify for the LMP option. The result will be reported to the EPA.

In the event the area does not continue to qualify for the LMP option, SCAPCA will implement one or more of the LMP contingency measures, described below. If the area fails a second time to qualify for the LMP option, a full maintenance plan will be prepared as required by the LMP policy.

F. Contingency Plan

Section 175A of the CAA states that a maintenance plan must include contingency measures in order to promptly correct any violation of the standard which occurs after the redesignation of the area to attainment. Normally, the implementation of contingency provisions is triggered by a violation of the NAAQS but the state may choose to establish other triggers, such as an exceedance of the NAAQS, in order to prevent a violation.

The contingency measures do not have to be fully adopted at the time of redesignation. However, the State is expected to ensure that the contingency measures chosen can be readily adopted once they are triggered.

This section identifies a process and a time-line to identify and evaluate appropriate contingency measures in the event of a quality assured violation of the PM₁₀ NAAQS. SCAPCA may, however, voluntarily initiate this or a similar local process to identify and evaluate appropriate contingency measures necessary to prevent such a violation.

1. Contingency Measures Assessment

Within 30 days following a violation of the PM₁₀ NAAQS, the SCAPCA, the SRTC and Ecology will convene an assessment team in order to identify appropriate measures needing to be implemented. Identified contingency measures may include but are not limited to those listed in part 2, below.

The assessment team will prepare and deliver a report containing its recommendation, within 120 days, for the SCAPCA board of directors and Ecology based on evaluation of the:

- monitor data before and during the event.
- weather conditions that may have caused and/or contributed to violation.
- normal and unusual emissions occurring prior to and during the event.
- effectiveness of existing controls in reducing the magnitude and/or duration of the event(s).
- appropriateness of modifying and/or implementing one or more LMP contingency measures
- possible changes to the LMP, monitoring network, and/or public information strategies.

Local actions resulting from the assessment team's recommendations will be at the discretion of the SCAPCA board of directors. The board may adopt and implement additional contingency measures, as needed.

2. LMP Contingency Measures

The following LMP contingency measures are either already in effect or may automatically become effective, in the event of a violation of the NAAQS, subject to the assessment described above. One applies to unpaved roads and parking lot emissions and one applies to residential wood combustion emissions.

Unpaved Road Control Regulation: This measure, adopted in by SCAPCA in 1994 as section 6.15 of Regulation I, controls particulate matter emissions from unpaved surfaces. The measure requires, among other things, that the City of Spokane, Spokane County, and the Town of Millwood submit emission reduction contingency plans for the control of dust emissions from unpaved roads, to SCAPCA for approval. These contingency plans will be reviewed and updated in the event of a NAAQS violation, if determined appropriate.

Ban on Uncertified Stoves: Article VIII of SCAPCA's Regulation I, contains provisions for Solid Fuel Burning Device Standards. As amended on January 6, 1994, it enables the authority to take further residential wood-smoke control actions if the area is not in attainment of the PM₁₀ standard because of wood-smoke emissions.

The provision prohibits the use of any solid fuel burning device not meeting state certification standards. Implementation of this provision as a contingency measure will provide a further reduction of wood-smoke emissions, should the assessment described above find necessary.

The assessment team will also consider recommending other contingency measures that may more appropriately address the most probable source contributing to the violation. The board may adopt and implement contingency measures other than those listed above, as needed.

G. Transportation Conformity

The Spokane Regional Transportation Council (SRTC) is the federally designated Metropolitan Planning Agency for Spokane County. As such, SRCT works with local, state and federal air quality and transportation agencies to ensure programs and projects conform to Clean Air Act requirements.

Under a limited maintenance plan, motor vehicle emissions from the planned highway and transit system are not limited and do not have to be less than a defined budget. Regional transportation conformity is presumed due to the limited potential for emission growth in the NAA during the LMP period. A regional emissions analysis and associated conformity requirements (40 CFR 93.118 and 93.119) are no longer necessary because there is no motor vehicle emission budget established in the SIP, and thus no way to receive a negative conformity decision.

However, since Spokane will still be a maintenance area after redesignation, transportation conformity determinations are still required for transportation plans, programs and projects. Therefore, SRTC will continue to work with the effected jurisdictions and interested parties to develop an evaluation criteria and process to meet transportation conformity requirements.