SIP Revision
for the
Spokane County, Washington
Second 10-Year Limited Maintenance Plan
for PM_{10}

Spokane Regional Clean Air Agency
Spokane, Washington

In conjunction with

Air Quality Program
Washington State Department of Ecology
Olympia, Washington

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Publication and Contact Information

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Acronyms and Abbreviations

$\mu g/m^3$	micrograms per cubic meter
ADT	Average Daily Traffic
ADVMT	Average Daily Vehicle Miles Traveled
AP42	EPA's compilation of Air Pollutant Emission Factors
AQI	Air Quality Index
AQS	Air Quality System
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CARB	California Air Resources Board
DOL	Washington State Department of Licensing
DQO	Data Quality Objectives
DV	Design Value
Ecology	Washington State Department of Ecology
EI	Emission Inventory
EPA	U.S. Environmental Protection Agency
FEM	Federal Equivalent Method
FRM	Federal Reference Method
FTA	Federal Transit Administration
g/hr	grams per hour
HPMS	U.S. Department of Transportation Highway Performance Monitoring System
I/M	Vehicle Inspection and Maintenance
IPP/QAP	Inventory Preparation Plan and Quality Assurance Plan
LMP	Limited Maintenance Plan
MOS	Margin of Safety
MOVES	EPA Motor Vehicle Emission Simulator
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NAMS	National Ambient Monitoring Site
NEAP	Columbia Plateau Windblown Dust Natural Events Action Plan
NEI	National Emission Inventory
OSPI	Washington State Office of the Superintendent of Public Instruction
PM_{10}	Particulate Matter, ten microns or less
$PM_{2.5}$	Particulate Matter, 2.5 microns or less
RACM	Reasonably Available Control Measures
RWC	Residential Wood Combustion
SCAPCA	Spokane County Air Pollution Control Authority[1]
SCMA	Spokane County Maintenance Area
SIP	State Implementation Plan

[1] In 2007 the Board of the Spokane County Air Pollution Control Authority (SCAPCA) changed their name to the Spokane Regional Clean Air Agency (SRCAA), Resolution #07-15

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SLAMS	State and Local Ambient Monitoring Site
SRCAA	Spokane Regional Clean Air Agency
SRTC	Spokane Regional Transportation Council
TEOM	Tapered Element Oscillating Microbalance
TSP	Total Suspend Particulate
VMT	Vehicle Miles Traveled
WRAP	Western Regional Air Partnership
WSDOT	Washington State Department of Transportation
WSU	Washington State University

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Abstract/Executive Summary

The cities of Spokane, Spokane Valley, Millwood and surrounding unincorporated areas in Spokane County, Washington meet the federal standard for Particulate Matter 10 microns and smaller (PM_{10}). This State Implementation Plan (SIP) explains how this area will continue to meet this standard through 2025.

Environmental Protection Agency (EPA) sets standards for particulate pollution because smaller particles such as soot, dust and unburned fuel can penetrate deeply into the lungs and cause health problems. The current 24-hour federal health standard for PM_{10}, set in 1987, is 150 micrograms per cubic meter of air ($\mu g/m^3$). To maintain compliance with the standard, monitored levels should not exceed this level in the area more than once a year averaged over a three year period.

The Spokane County Maintenance Area (SCMA or maintenance area) which includes the cities of Spokane, Spokane Valley, Millwood and surrounding unincorporated areas, violated the 24 hour standard in the 1980s. Windblown dust, re-entrained road dirt and sanding material, unpaved road dust and smoke from woodstoves and fireplaces all contributed to the violations of the standard. The Spokane Regional Clean Air Agency (SRCAA) operates federal reference method (FRM) and/or federal equivalent method (FEM) ambient air monitors in the SCMA to track compliance with the federal PM_{10} standard. Ambient monitoring has shown the SCMA in attainment since 1994. With completion of an approved attainment SIP and Limited Maintenance Plan (LMP) the SCMA was re-designated to attainment in 2005. SRCAA has enforcement authority for the SCMA.

The Clean Air Act (CAA) requires an area being re-designated to attainment have an EPA-approved maintenance plan that provides for the area's continued compliance with the PM_{10} standard for 10 years. A second 10-year plan must follow the first. This SIP Revision is for the Spokane County Washington, Second 10-year Limited Maintenance Plan for PM_{10}. This plan:

- Meets the requirement for a second 10-year plan,
- Covers the period through 2025, and
- Fulfills the final maintenance planning requirements of the CAA for the SCMA.

Since the maintenance area meets EPA criteria and shows little risk of re-violating the federal standards, this streamlined maintenance plan called a LMP has been developed. **The LMP relies on the same control measures that brought the area into attainment and supported the initial maintenance plan**. These measures include:

- Control of dust from paved and unpaved roadways
- Controls to prevent particulate matter from becoming airborne
- Curtailment of wood burning devices during impaired air quality
- Standards for new solid fuel burning devices
- Outdoor burning restrictions

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The underlying control measures and contingency measures from the attainment and maintenance plan are still in place, thus meeting the LMP guidance criteria. Any changes or potential revisions to these control measures will be addressed in separate submittals to the EPA as discussed in this document. SRCAA proposes that Ecology, as the Governor's designee for the SIP, submit this LMP to EPA and request EPA approve this LMP as a revision under the SIP.

Ecology will lead the public comment period to fulfill federal requirements for public comment and hearings. SRCAA will continue to monitor air quality in the SCMA and document the area's continued compliance with the 1987 PM_{10} Standard.

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1. Introduction

This State Implementation Plan (SIP) revision explains how the Spokane County Maintenance Area (SCMA) currently meets and will continue to meet the 1987 National Ambient Air Quality Standard (NAAQS) for particulate matter 10 microns or smaller (PM_{10}) through 2025. Spokane Regional Clean Air Agency[2] (SRCAA), the local clean air agency with jurisdiction over Spokane County, prepared this plan.

Particulate Matter Standards – The Environmental Protection Agency (EPA) set air quality standards for particulate matter to protect public health. Particulate matter pollution is a public health issue because smaller particles can penetrate deep into the lungs and cause health problems. Particulate matter comes from soot, dust and unburned fuel suspended in the air. EPA revised the particulate matter NAAQS from total suspended particulate (TSP) to PM_{10} on July 1, 1987, since smaller particles were determined to be more harmful. The primary or health-based 24-hour standard for PM_{10} was set at 150 $\mu g/m^3$, and cannot be exceeded more than once a year on average over three years. This standard remains in effect today. Ten years later on July 18, 1997, EPA set a 24-hour for fine particulate matter (particulate matter 2.5 microns or smaller or $PM_{2.5}$) at 65 $\mu g/m^3$. In 2006, the 24-hour standard was revised from 65 $\mu g/m^3$ to 35 $\mu g/m^3$.

Spokane County Maintenance Area Compliance History – Spokane County violated the 24-hour PM_{10} NAAQS multiple times a year from 1985 through 1993. There were three main causes of these exceedances of the NAAQS: windblown dust, re-suspended dust from traction sand and tracking of dirt from unpaved roads, and wood burning heating devices. These exceedances were recorded at multiple locations throughout the maintenance area. The primary location and highest values were at the PM_{10} monitor located at Freya St and Ferry Ave. (Spokane-Ferry St site) in the City of Spokane. When the 1990 Clean Air Act Amendments (CAAA) was passed, EPA designated the Spokane County Maintenance Area (SCMA) a nonattainment area, an area out of compliance with the PM_{10} standards.

Ecology and SRCAA prepared plans to fulfill the Clean Air Act (CAA) requirements. An attainment plan described how the area would comply with the standard; a maintenance plan described how the area would stay in compliance.

The three main sources of particulate matter continue to be windblown dust (dust storms), dust from roadways and smoke from wood stoves and fireplaces. Wood stoves and fireplace smoke is a wintertime issue. Control measures to limit wood burning during period of poor air quality were put into place and included in the attainment plan. These control measures and state requirements on new wood fueled burning devices have reduced smoke particulate.

Resuspended road dust is mainly a late winter and early spring problem. A control measure requiring cities, Spokane County and Washington State Department of Transportation to submit and follow plans to reduce use of sanding material, use cleaner sanding material and clean roadways within the maintenance area more frequently and in a more timely manner. There have been no further exceedances attributed to road dust since the implementation of road dust control plans.

[2] In 2007 the Board of the Spokane County Air Pollution Control Authority (SCAPCA) changed their name to the Spokane Regional Clean Air Agency (SRCAA), Resolution #07-15

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Frequency of windblown dust impacts has been down as soil conservation programs have led to increased use of no-till and minimal till farming practices. Additional road paving by city and county have controlled critical unpaved roads that were shown to impact PM_{10} levels.

The control measures and contingency measures from the attainment and maintenance plan are still in place. The area monitored attainment in the 1995-1997 years and EPA redesignated the area to attainment in 2005. The area continues to be in compliance with the PM_{10} NAAQS.

Plan Structure – This SIP revision includes the SCMA compliance history and describes the how the area met and will continue to meet the standards, as well as what will be done if the standard is exceeded. This plan also includes other EPA required elements, such as an emissions and monitoring review and public process requirements.

This document is organized as follows:

- Section 2 – SCMA and PM_{10} Standard Background – describes the area's compliance history and contains back ground information on the PM_{10} standard
- Section 3 – Limited Maintenance Plan (LMP) Option – describes the criteria an area must meet to qualify for this option and how the SCMA meets these criteria
- Section 4 – PM_{10} Monitoring History – provides a brief history of monitoring in the SCMA
- Section 5 – Emission Inventory – includes historical information on the most significant PM_{10} emission categories from the original maintenance plan and an updated inventory on these categories
- Section 6 – Control Measures – lists the measures and rules that were in place in the original maintenance plan, the current rules that maintain and enforce these measures and includes a request that EPA incorporate and include the updated rules in Washington State's SIP
- Section 7 – Contingency Measures – describes the provisions that are in place in rules and will be taken, if the PM_{10} standard is violated
- Section 8 – Commitment to Continue Monitoring – states that continued monitoring will be done
- Section 9 – Verification of Continued Attainment – describes how continued compliance will be confirmed
- Section 10 – Summary of Maintenance Plan Commitments – outlines commitments of this plan
- Section 11 – Completion of Required Plans – states that this document fulfills federal planning requirements

2. Background

Historical information on the SCMA, its compliance, and federal plan history are below.

Spokane County Maintenance Area – The SCMA is located in Washington State, east of the Cascade Mountains, 300 miles east of Seattle just west of the Idaho State boarder. Much of the SCMA is located in the drainage basin of the Spokane River with elevations ranging from around 1700 feet in the river valley near downtown Spokane to 2300 feet on the western boundary of the SCMA and 2200 feet on the eastern edge. The primary PM_{10} monitor, Spokane Augusta established in 2009, is located on the east side of the City of Spokane at an elevation of 1945 feet. Prior to 2009 Spokane Ferry St was the primary

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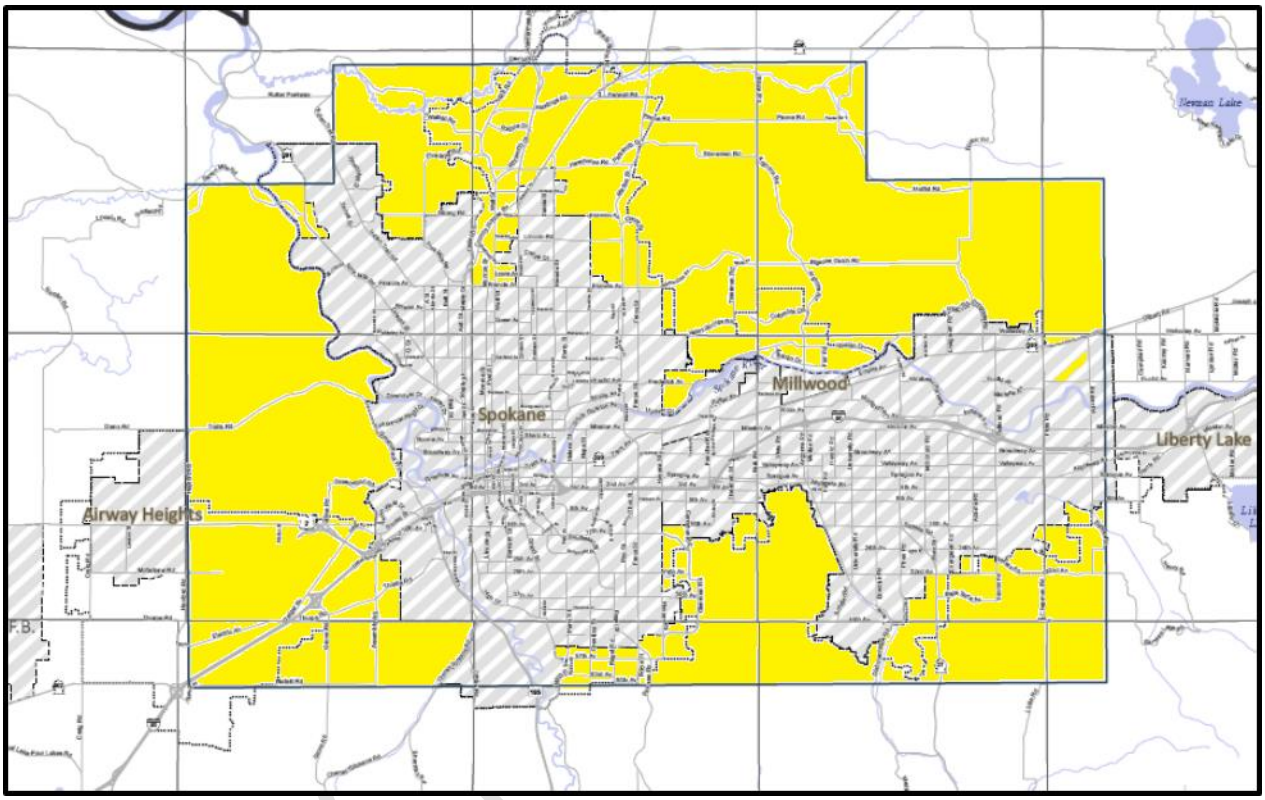
and design value monitor located approximately ½ mile south of the Augusta site along the same traffic corridor. The topography and location influence the meteorology throughout the SCMA. In general the climate is mild and arid in the summer, cold and moist in the winter. The predominant wind direction is from the south to southwest with most high wind speed condition coming out of this direction. High pressure over the region during winter months leads to strong temperature inversions in the river basin.

Figure 1. Spokane County Maintenance Area (SCMA)



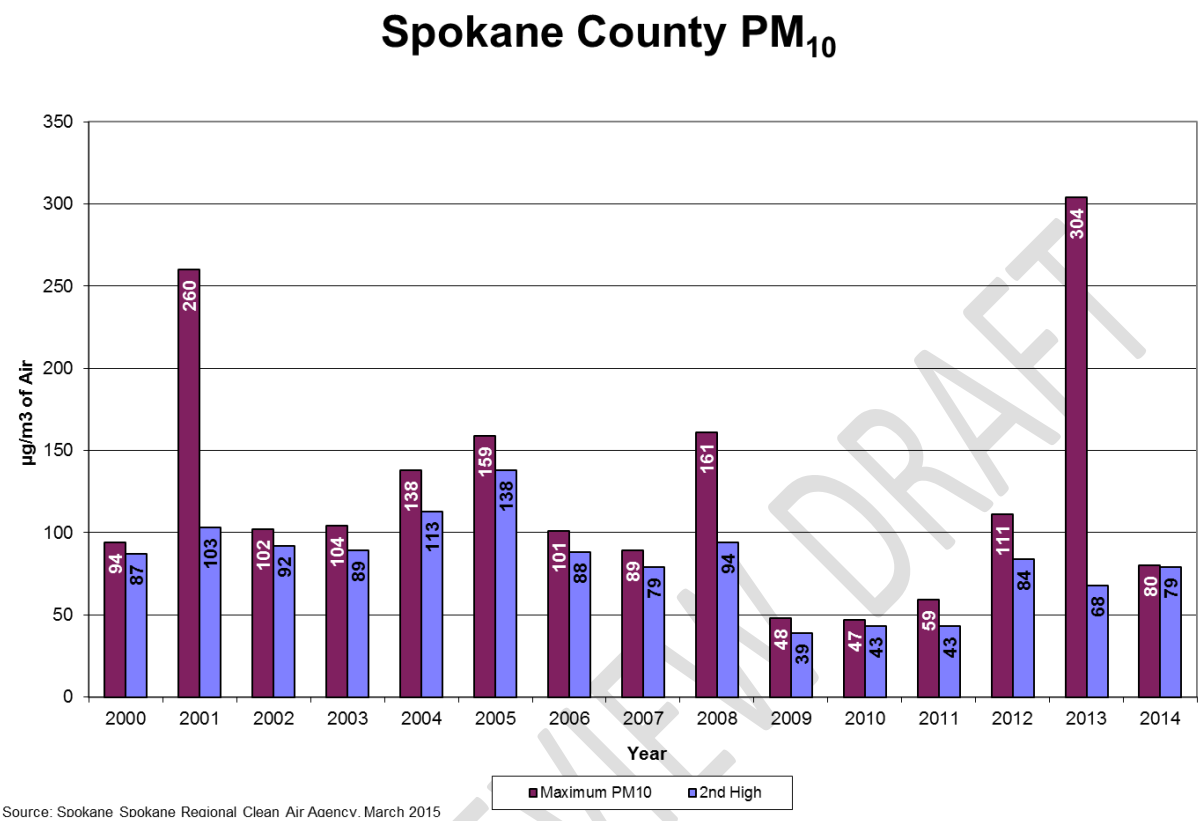
Spokane County Compliance History – The SCMA shown in Figure 1 was designated Group I for violating the 24-hour PM_{10} standard in 1987. The area was designated as a PM_{10} Non-Attainment Area (NAA), which was classified as Moderate, under the 1990 CAA Amendments. The Spokane NAA was determined by EPA to attain the PM_{10} 24-hour NAAQS by its extended attainment date of December 31, 1997. A PM_{10} attainment plan was submitted in 1994 and approved by EPA in 1997. The first PM_{10} Limited Maintenance Plan (LMP) and request for re-designation was submitted in 2004 and approved in 2005.[3]

Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the EPA revoked the annual PM_{10} standard in 2006.[4] Figure 2 on next page shows maximum concentration for each year, 2000 through 2014, and the second highest value for that year. Data for the chart comes from the EPA AirData site and includes data flagged as an exception event.

[3] (70 FR 38029) Federal Register/ Vol. 70, No. 126/ Friday, July 1, 2005/ Rules and Regulations *Approval and Promulgation of Air Quality Implementation Plans; Spokane PM_{10} Limited Maintenance Plan and Redesignation Request.* Direct final rule effective August 30, 2005

[4] (71 FR 61144) Federal Register/ Vol. 71, No. 200/ Tuesday, October 17, 2006/ Rules and Regulations *National Ambient Air Quality Standards for Particulate Matter.* Effective December 18, 2006

Figure 2. PM_{10} Maximum and Second Highest Values



Source: Spokane Spokane Regional Clean Air Agency, March 2015

The data for the year 2000 to through the first quarter of 2009 is from Ferry St, the remainder through 2014 is from Augusta Ave. The first maximum values for the years 2001, 2005, 2008 and 2013 were flagged as exceptional events.[5]

Plans Submitted – Ecology and SRCAA prepared attainment and the first of the two required maintenance plans to fulfill CAA requirements. An attainment plan describes how the area complies with the standard; a maintenance plan describes how the area stays in compliance. These plans are:

- Attainment Plan – A revised PM_{10} SIP was submitted November 15, 1991 that used rollback modeling to demonstrate attainment. EPA subsequently requested dispersion modeling to demonstrate attainment. On December 9, 1994 Ecology submitted the Spokane PM_{10} Attainment plan for the Spokane PM_{10} nonattainment area. EPA approved the plan on January 27, 1997 (62 FR 3800).
- Redesignation Request and Maintenance Plan – Ecology submitted the Limited Maintenance Plan (2005 LMP) and request for redesignation November 30, 2004, EPA approved the Plan and request which became effective August 30, 2005 (70 FR 38029).

[5] Data have been flagged, but unless there is regulatory significance, that is, the area is in danger of violating the standard, a demonstration would not be submitted. The values stay in the record until EPA approved a demonstration and places a concurrence flag on the data.

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This plan, the SIP Revision for the Spokane County, Washington Second 10-Year Limited Maintenance Plan for PM_{10}, is the last maintenance plan for this area. This maintenance plan revision ensures compliance through 2025 and fulfills the second 10-year planning requirements of CAA Section 175A (b).

3. Limited Maintenance Plan Option

Because the SCMA is a maintenance area, the CAA requires Ecology to adopt and submit a plan that demonstrates compliance with the NAAQS through 2025. EPA developed the Limited Maintenance Plan (LMP) option so areas with little risk of reviolating the PM10 standard could be easily redesignated from nonattainment to attainment (also called maintenance status). EPA also allows states to use this policy to prepare the required second 10-year maintenance plans, if the area meets the qualification criteria in the EPA Limited Maintenance Plan Option Guidance (LMP Guidance). This section describes the advantages of the LMP option and how the SCMA meets the qualification criteria.

Maintenance Demonstration – A maintenance plan normally contains an emissions or modeling demonstration that shows how the area will stay in compliance through the 10-year maintenance period. This demonstration normally requires a projected emissions inventory. However, an area meeting the LMP qualification criteria is at little risk of violating the standard because emissions are not expected to grow sufficiently to threaten maintenance of the standard. Therefore, when an area meets the criteria, the maintenance demonstration is presumed to be satisfied and there is no need to project emissions over the maintenance period.

Transportation Conformity – The transportation conformity rule (40 CFR Parts 51 and 93) applies to nonattainment and maintenance areas. It is not reasonable to expect that motor vehicle emissions would grow enough to threaten maintenance if an area expects only limited growth in traffic emissions and qualifies for the LMP option. Therefore, a regional emissions analysis in not required to determine whether the region's long-range transportation plan and short-term transportation improvement program conform to the maintenance plan. Other conformity requirements, such as consultation between agencies on air quality impacts of transportation projects, still apply.

LMP Qualification Criteria – To take advantage of the LMP option, an area must be attaining the NAAQS, cannot exceed the average 24-hour PM_{10} design value of 98 $\mu g/m^3$ based on the most recent 5 years of data and should expect only limited growth in on-road motor vehicle emissions. The SCMA meets these criteria as described below; supporting information can be found in Appendix A.

How the SCMA qualifies for the LMP option:

1. *The area must be attaining the NAAQS:* Spokane County attained the standard in 1997, was formally redisignated as in attainment in 2005, and has continued to be in compliance.

2. *The average 24-hour PM_{10} design value for the area based upon the most recent five years of data should not exceed 98 $\mu g/m^3$.* A design value is the statistic based on monitoring data that determines and area's compliance status. The LMP Guidance directs the design value be based on the most recent five years of data. The SCMA design value on Federal Reference Method (FRM) and Federal Equivalent Methods (FEM) 24-hour PM_{10} monitoring data from 2010 through 2015 is 80 µg/m3 using the "Tabular Estimation of PM_{10} Design Concentrations" Table 6-1 of the PM_{10} SIP Guidance. Since this value is below 98 $\mu g/m^3$, the value stipulated in the LMP Guidance, the SCMA meets this condition.

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3. *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 (i.e., passes the Motor Vehicle Regional Analysis Methodology found in Attachment B of the LMP Guidance.)* SCMA meets both these criteria. First, the Spokane Regional Transportation Council (SRTC) projects only limited growth in on-road motor vehicle PM_{10} emissions for the SCMA from 2015 through 2025. Second, the area passes the motor vehicle regional emissions analysis test.

As described above and in Appendix A. Limited Maintenance Plan Qualification, this area continues to attain the NAAQS, the design values are below the defined margin of safety and the growth in PM_{10} emissions from motor vehicles will not threaten compliance with the standard. Thus, the SCMA meets the LMP qualification criteria and qualifies for the LMP option.

The analysis has been provided to Ecology and EPA Region 10 office. EPA and Ecology mutually agreed to the LMP approach. SRCAA will calculate the 5-year design value estimate and provide it to Ecology annually by April 30th of each year. If the design value estimate is below 98 $\mu g/m^3$, Ecology will include a statement that the area continues to qualify for the LMP option in the annual monitoring network report.

4. Particulate Matter Monitoring

This section discussed the history of PM_{10} and to some extent $PM_{2.5}$ monitoring in the SCMA.

Particulate Matter Monitoring History – SRCAA conducts ambient monitoring in Spokane County. Starting in 1985 and in the early 90s there were as many as 9 PM_{10} FRM monitoring sites in Spokane County, one of them, the Crown Zellerbach site (3530 E. Ferry Ave., Spokane, WA), consistently showed the highest concentration of PM_{10}. That site was later renamed Spokane-Ferry St. Ferry St was used to determine the design value for the attainment SIP and the first 10-year maintenance plan. The Spokane-Augusta site (3104 E. Augusta Ave., Spokane, WA) replaced Ferry St. as the primary site for PM_{10} monitoring when the equipment was moved in 2009.

Today there are two locations where PM_{10} is monitored, Spokane-Augusta and Turnbull Slough, located on the Turnbull Wildlife Refuge southwest of the City of Spokane. The Augusta Ave. FEM is used for determining compliance with the NAAQS. Turnbull is a Special Purpose Monitor (SPM) operated by SRCAA to measure background PM_{10} levels and evaluate windblown dust events.

Types of Particulate Monitors – Spokane-Augusta monitors both PM_{10} and $PM_{2.5}$ using both Federal Reference Method (FRM) and Federal Equivalent Method (FEM). The manual FRM data is no longer reported to Ecology. SRCAA continues to operate, maintain and collect the FRM data for its own use. Data from the PM_{10} FEM is reported by Ecology to AQS. The following monitors have been used to measure particulate matter at the Ferry St. and Augusta Ave. sites;

- FRM
  - PM_{10} SA/GMW 1200 High Volume (HI-Vol) monitor
  - $PM_{2.5}$ R&P Partisol 2025 sequential monitor
- FEM
  - PM_{10} R&P 1400AB TEOM

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- $PM_{2.5}$ R&P 1400AB TEOM with 8500 FDMS unit and Very Sharp Cut Cyclone
- Met One BAM 1020 (The BAM is being evaluated as a replacement for the $PM_{2.5}$ TEOM)

SRCAA commits to maintaining a PM_{10} NAAQS compliance monitor through the LMP period. The monitor will be maintained and operated in accordance with federal siting and design criteria set forth in 40 CFR Part 58. Any changes to the monitor will be proposed under Ecology's annual network plan and subject to EPA approval.

5. Emission Inventory

This section presents the emissions inventory for this second 10-year LMP and briefly describes its development. The LMP Guidance requires the maintenance plan include an attainment inventory – that is, an inventory with emission levels consistent with attainment of the PM_{10} standard.

In the original maintenance plan and LMP SRCAA contracted with E.H. Pechan and Associates, Inc. to develop a very detailed emission inventory. For this 2nd LMP EPA agreed that SRCAA should develop the maintenance plan inventory from readily available information. Emission estimates are from Ecology's 2011 and EPA's triennial emission inventories. The National Emissions Inventory (NEI) is based on EPA and state inputs. Appendix C. Emission Inventory Documentation provides details.

Maintenance Plan Inventory – Washington State's 2011 Emissions Inventory (EI) is the most recent, complete, readily available emission inventory for Spokane County. Since neither Ecology nor SRCAA have local information on emissions for a number of categories, Ecology accepted the EPA estimates for the missing categories. (See Appendix C.)

Significant source categories – The most significant sources of PM_{10} listed from the original maintenance plan for the SCMA are Paved Roads, Unpaved Roads and Residential Wood Combustion. Three "Worst-Case" scenarios were looked at in the first 10-year maintenance plan; Levels for Unpaved Roads, Paved Roads and Residential Wood Combustion. Windblown dust was not included in the analysis. Windblown dust during high wind events is addressed under the Columbia Plateau Windblown Dust Natural Events Action Plan (NEAP)[6] and the Exceptional Events Rule Guidance[7]. There are no new major point sources in the SCMA and other activities and emissions estimates remain about the same as during the first 10-year plan.

Table 1. Comparison of First and Second LMP Emissions Inventory

Year	Spokane County		SCMA	
	Annual (tons)	Daily (tons)	Annual (tons)	Daily (tons)
2002	18,612	55.1	10, 059	30.0
2011	18,933	66.82	6,884	28.10

The detailed emission inventory for Spokane County and the SCMA is shown in Table 2.

[6] A link to Ecology's NEAP is at https://fortress.wa.gov/ecy/publications/SummaryPages/0302014.html
[7] Friday, May 10, 2013, EPA issued interim guidance to help state, local and tribal governments manage air quality data recorded during "exceptional events".

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Table 2. Annual and Daily PM_{10} Emissions 2011

Sources Sector	Spokane County		SCMA	
	Annual (tons)	Daily (tons)	Annual (tons)	Daily (tons)
Air Craft	14	0.03	14	0.03
Recreational boats	16	0.08	1	0.01
Construction	4,810	18.6	3,561	13.8
Commercial fuel use	36	0.12	32	0.11
Residential fuel use	7	0.03	5	0.03
Wildfires	14	0.03	0	0
Food and Kindred Products	173	2.59	158	2.37
Structure and Motor vehicle fires, cremation etc.	6	0.02	5	0.02
Nonroad Mobile	164	1.07	71	0.46
Agricultural and silvicultural burning	99	0.88	3	0.03
Residential outdoor burning	101	0.35	0	0
On road mobile	469	1.28	346	0.94
Point sources[8]	200	0.72	160	0.57
Paved roads	1051	2.64	780	1.96
Unpaved roads[9]	5624	15.42	567	1.56
Locomotives	42	0.12	15	0.04
Woodstoves	1,353	7.51	1,062	5.89
Agricultural tiling & harvesting	4,156	13.7	15	0.05
Totals	18,933	66.82	6,884	28.10

Sources considered negligible – Ecology and SRCAA have no local information on emissions for construction dust, cigarette smoke, or commercial charbroiling, but these are assumed to be minimal. Some of these values are included in the 2011 NEI, however the emission estimates have large uncertainties because it was not developed specifically for local areas, or for sub-county regions like the Spokane County Maintenance Area. Other sources are deemed insignificant, including outdoor burning, aircraft emissions, and wildfires.

Smoke from wildfires is considered negligible as no PM_{10} data has recently been flagged as being impacted by wild fires. Wildfires also would have a much more significant impact on $PM_{2.5}$ and the Spokane area continues to meet the $PM_{2.5}$ NAAQS. Outdoor burning is prohibited in the maintenance area, so emissions would be minimal.

Construction Dust in the inventory is data from EPA's 2011 NEI as accepted by Ecology into their 2011 EI. This data is not estimated by Ecology or SRCAA and is included as found in the NEI. The 2011 data includes construction dust in four categories: Industrial/Commercial/Institutional, Residential Construction, Mining/Quarrying, and Road Construction. Top-down inventories such as the NEI have inherent uncertainties because data is collected nationally and aggregated. The previous attainment plan and 2005 LMP SRCAA's consultant gathered local information to calculate construction dust that resulted in a much lower contribution than reported in the NEI. Construction dust was not identified as significant in either the attainment plan or the first LMP. SRCAA local regulation in place to control

[8] Air Operating Permit Billing Data 2012 (reports 2011 emissions), Spokane Regional Clean Air Agency, April Westby, March 2, 2015

[9] Spokane Regional Transportation Council updated unpaved road data, email from Anna Ragaza-Bourassa, March 11, 2015

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construction dust, Section 6.05[10], is listed under control measures for unpaved roads but also applies to construction activities.

Windblown dust from high wind events is not included as part of the Washington State EI.

6. Control Measures

There were three "Worst-case" scenarios discussed in the first 10-year LMP for Unpaved Roads, Paved Roads and Residential Wood Combustion. SRCAA and Ecology relied on Reasonably Available Control Measures (RACM) to return the area to compliance with the PM_{10} standard. Ecology and SRCAA have continued to implement the control measures established in the attainment plan and in the first 10-year LMP.

Control Measures for Unpaved Roads – The following resolutions and regulations were adopted to address dust from unpaved roads. SRCAA's regulation remains in effect and enforced. City and County paving projects identified in the attainment plan were completed prior to the approval of the first LMP.

- SRCAA Regulation Section 6.15 Standards for Control of Particulate Matter on Unpaved Roads[11]
- City of Spokane Resolution 90-93, October 8, 1990, Street Paving
- City of Spokane Resolution 91-42, June 17, 1991, Six Year Comprehensive Street Program
- Spokane County Resolution 90-1219, October 9, 1990, Street Paving
- Spokane County Resolution 04-0461, 2004, County Zoning Code, Chapter 14.802 Off-street Parking and Loading Standards (replaces Spokane County Resolution 90-0812 and Spokane County Zoning Code Ordinances 4.17.059 and 14.802.080, May 24, 1990, Paving of New Parking Lots)[12]

Control Measures for Paved Roads – The following regulations and resolutions were adopted to address the dust from paved roads.

- SRCAA Regulation Section 6.05 Particulate Matter & Preventing Particulate Matter from becoming Airborne
- SRCAA Regulation Section 6.14 Standards for Control of Particulate Matter on Paved Surfaces[13]
- City of Spokane Resolution 93-43, May 10 1993, Street Sweeping & Reduced Use of Sanding Materials

SRCAA Regulation Section 6.14 which was adopted in 1993 was amended October 7, 2004 Resolution 04-21; this is a change from the 1993 version listed by EPA. The changes are shown in Appendix D.

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[10] SRCAA Regulation Section 6.05 Particulate Matter & Preventing Particulate Matter from becoming Airborne. SRCAA notes that Section 6.05(A) is a nuisance provision outside the scope of regulating criteria pollutants under Clean Air Action section 110 and requests that the EPA correct the SIP to remove this provision.

[11] SCAPCA Resolution 07-15 Agency name change from SCAPCA to SRCAA

[12] E-mail from John Pederson, Planning Director, Spokane County 2/21/2015. This control measure was labeled as a contingency on Region 10 web page and called SCAPCA Zoning Code Ordinance 4.17.059 and 4.802.080, May 24, 1990, Paving of New Parking Lots. It is in the attainment plan as a control measure and was not included in the first LMP.

[13] SCAPCA Resolution 07-15 Agency name change from SCAPCA to SRCAA

After 10 years of trying to track multiple private companies, most were small and tended not to stay in business from year to year, and finding that the larger private companies did not use 250 tons of sanding material in a season Regulation 6.14 was amended to remove private sanding and sweeping companies from the requirements. It was decided that is was more effective to control particulate emissions from paved surfaces on private property using Regulation 6.05, Particulate Matter & Preventing Particulate Matter from becoming Airborne. As long as the sanding or sweeping is on private property, not a public roadway, SRCAA can require that the material be cleaned up if it becomes a problem or material is tracked onto a public roadway. Traffic speeds in parking lots and driveways do not cause much particulate matter to become airborne and are not considered a significant contributor to particulate levels. Tracking on to critical streets during the winter months is mitigated by the cities doing frequent sweeping of these roadways as required by Section 6.14.

The City of Spokane, Spokane County and the Washington Department of Transportation have submitted Sanding and Sweeping Plans as required by SRCAA Regulation Section 6.14. With its incorporation on March 31, 2003 the City of Spokane Valley submitted their plan in 2005 taking over the portion of the Spokane County Plan that is now within the City of Spokane Valley boundaries. Annual reports are on file with SRCAA.

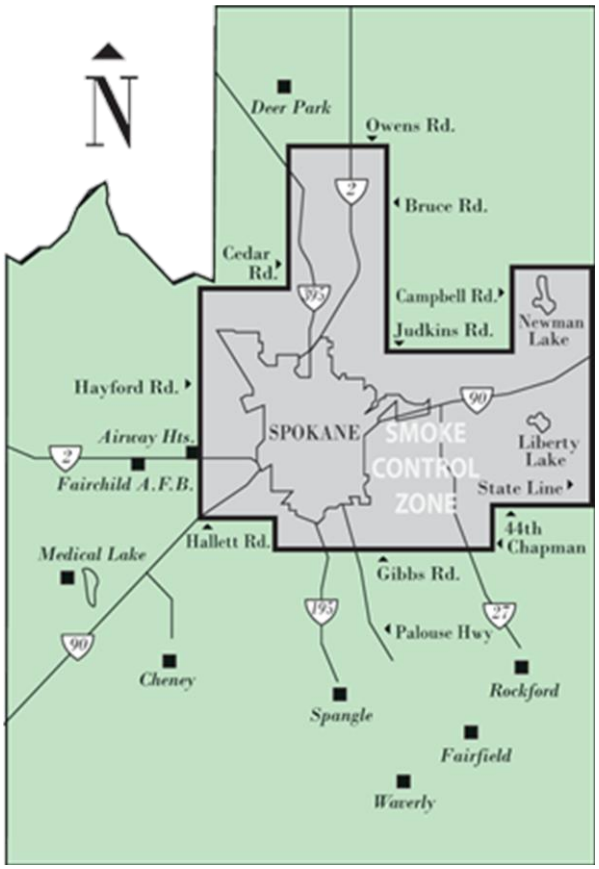

Figure 3. Smoke Control Zone

Control Measures for Residential Wood Combustion – The following regulations were adopted to address PM_{10} and $PM_{2.5}$ from Residential Wood Combustion, use of woodstoves and fireplaces.

- SRCAA Article VIII Solid Fuel Burning Device Standards[14]
- WAC 173-433 Solid Fuel Burning Device Standards

SRCAA has implemented a solid fuel burning device curtailment program for Spokane County, when PM pollution impairs air quality SRCAA restricts wood burning. When SRCAA calls burn bans for the area, woodstove use is restricted and outdoor burning is prohibited. The SRCAA outdoor burning rule is not included as a control measures as it has never been considered a significant contributor to "worst-case" residential wood combustion and no credit was taken in the attainment SIP.

Burn bans can be called in two stages and for either the "Smoke Control Zone" as shown in Figure 3 or the whole of Spokane County. The

[14] This rule has been amended to conform to the state WAC 173-433, SRCAA Resolution 14-08 July 10, 2014 and will be submitted to EPA as a SIP revision. Should there be any problem with its adoption into the SIP the previously approved rule is sufficient to assure compliance with the PM_{10} NAAQS.

Smoke Control Zone encompasses the entire SCMA and includes additional areas that extend farther into the drainage basins of the Spokane River, Little Spokane River and Latah Creek, all of which can impact the SCMA during stagnant weather conditions.

- A Stage 1 ban prohibits the use of all uncertified wood heating devices when pollution levels approach unhealthful levels. As defined in the WAC and SRCAA Article VIII a Stage 1 burn ban (first stage of impaired air quality) is declared if meteorological conditions are predicted to cause $PM_{2.5}$ levels to exceed 35 µg/m^3 in the next 48 hours, based on a 24 hour average.
- A Stage 2 burn ban (second stage of impaired air quality) is declared if meteorological conditions are not expected to change in the next 24 hours, $PM_{2.5}$ levels have reached 25 µg/m^3 and a Stage 1 ban has not been sufficient to reduce the increasing $PM_{2.5}$ trend. A Stage 2 ban may be declared without first declaring a Stage 1 ban if $PM_{2.5}$ levels are at or above 25 µg/m^3, meteorological conditions have cause a rapid rise in $PM_{2.5}$ levels and 35 µg/m^3 may be exceeded in the next 24 hours.

The Stage 1 and 2 burn bans are designed to maintain the $PM_{2.5}$ standard and are protective of the PM_{10} standard. $PM_{2.5}$ is monitored at our primary site at Augusta in addition to multiple locations throughout Spokane County and the SCMA.

Wind Blown Dust – The SCMA is covered by the Washington State Department of Ecology Columbia Plateau Windblown Dust Natural Events Action Plan (NEAP). Windblown dust events will be evaluated for qualification under the Exceptional Events Rule (EER). If appropriate, exceedances will be flagged for exclusion of data from EPA's AQS database to hold for future demonstration submittal. If values qualify for EER treatment, and they have regulatory significance, documentation will be submitted per EER requirements.

SRCAA Orders – In addition to Regulations and Resolutions the following agency Orders were issued and remain in place from the first 10-year LMP.

- SCAPCA[15] Order No. 91-01, December 12, 1991, Alternate Opacity Limit for Kaiser Aluminum
- SCAPCA Order No. 96-03, October 4, 2000, Limiting Potential to Emit, Kaiser Aluminum
- SCAPCA Order No. 96-04, April 24, 1996, Revised May 8, 1996, Limiting Potential to Emit, Kaiser Aluminum
- SCAPCA Order No. 96-05, October 4, 2000, Limiting Potential to Emit, Kaiser Aluminum
- SCAPCA Order No. 96-06, October 19, 2000, Limiting Potential to Emit, Kaiser Aluminum

These Orders have been included in the Kaiser Aluminum Title V Air Operating Permit as federally enforceable.

7. Contingency Measures

CAA Section 175(A) requires a maintenance plan to include contingency measures necessary to ensure prompt correction of any violation of the standard that may occur after redesignation.

[15] In 2007 the Board of the Spokane County Air Pollution Control Authority (SCAPCA) changed the Authority's name to the Spokane Regional Clean Air Agency (SRCAA), Resolution #07-15, May 3, 2007

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Contingency Measure for Paved Roads – SRCAA's Regulation 1, Section 6.14 C. 4 require review and modification of emission reduction and control plans for paved roads to provide sufficient reduction in PM_{10}. SRCAA will consider additional control measures for paved roads, including reinstating requirements on businesses and private sweeping and sanding contractors removed in 2004.

Contingency Measure for Unpaved Roads – SRCAA Regulation 1, Section 6.15 G., provides a procedure in the event that emissions from unpaved roads cause a violation of the PM_{10} standard. The applicable governmental entities shall modify their emission reduction plans to ensure compliance with the standard.

Contingency Measure for Residential Wood Combustion – SRCAA's Regulation 1, Article VIII, Section 8.09 provides a procedure for prohibition of the use of uncertified woodstoves in the Smoke Control Zone for the sole purpose of meeting CAA requirements for contingency measures.

Contingency Measure Trigger – The contingency measures will be triggered if a violation of the PM_{10} standard occurs in the SCMA based on FRM and/or FEM monitoring. A violation of the PM_{10} standard will be determined by the procedures outlined in 40 CFR Part 50, Appendix K – Interpretation of the NAAQS for Particulate Matter.

8. Commitment to Continued Monitoring

EPA considers continued monitoring especially important in a LMP area because there is no cap on emissions; LMPs do not require an emissions budget. Emissions in the SCMA are not expected to grow enough to threaten compliance with the standards as discussed in Section 3.

SRCAA commits to maintaining a PM_{10} NAAQS compliance monitor through the LMP period. The monitor will be maintained and operated in accordance with federal siting and design criteria set forth in 40 CFR Part 58 and Ecology's PM_{10} Standard Operating Procedures. Any changes to the monitor will be proposed under Ecology's annual network plan and subject to EPA approval.

9. Verification of Continued Attainment

SRCAA will calculate the SCMA PM_{10} 3 and 5 year design values annually and submit them to Ecology for inclusion in the annual monitoring network report by April 30th each year through 2025 to confirm the area continues to meet the PM_{10} NAAQS. A 3-year PM_{10} design value below 150 $\mu g/m^3$ or a 3-year average of 1 or fewer exceedances demonstrates continued compliance with the PM_{10} NAAQS[16]. A 5-year design values calculated in accordance with the LMP guidance of less than 98 $\mu g/m^3$ shows the area's continued qualification for the LMP option. Ecology will include a statement in the annual network report to inform EPA of continued attainment and LMP qualification for the SCMA.

10. Summary of Maintenance Plan Commitments

Commitments made in this maintenance plan are summarized in Table 3.

[16] Using the method in 40 CFR Part 50 Appendix K – Interpretation of the National Ambient Air Quality Standards for Particulate Matter *2.0 Attainment Determinations*

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Table 3. Second 10-Year LMP Commitments

Section	Commitment	Responsible Agency
3	Annual calculation of the SCMA PM_{10} 5-year design value through 2025 to show continued qualification for the LMP option. Report to Ecology.	SRCAA
3	Reporting to EPA on continued qualification of the SCMA for the LMP option in the annual monitoring network report.	Ecology
7	Implementation of the contingency measures if the SCMA violates the PM10 standards based on monitoring.	SRCAA
8	Continued Monitoring of PM_{10} in the SCMA through 2025.	SRCAA
9	Annual calculation of the SCMA PM_{10} 3-year design value through 2025 to assess compliance with the PM_{10} standard. Report to Ecology.	SRCAA
9	Reporting to EPA on continued PM_{10} Attainment of the SCMA in the annual monitoring network report.	Ecology

11. Required Plans Complete

The SCMA was redesignated to attainment for the 1987 24-hour PM_{10} standard in 2005. EPA approved the first 10-year maintenance plan in August of 2005. This second LMP ensures compliance through 2025 and fulfills the final requirement for maintenance plans specified by the CAA.

Summary of Control and Contingency Measures

Rules

SRCAA Section 6.05 Particulate Matter & Preventing Particulate Matter from becoming Airborne
SRCAA Section 6.14 Standards for Control of Particulate Matter on Paved Surfaces
SRCAA Section 6.15 Standards for Control of Particulate Matter on Unpaved Roads
SRCAA Article VIII Solid Fuel Burning Device Standards[17]
WAC 173-433 Solid Fuel Burning Device Standards

Resolutions & Orders

City of Spokane Resolution 90-93, October 8, 1990, Street Paving
City of Spokane Resolution 91-42, June 17, 1991, Six Year Comprehensive Street Program
City of Spokane Resolution 93-43, May 10, 1993, Street Sweeping & Reduced Use of Sanding Materials
Spokane County Resolution 90-1219, October 9, 1990, Street Paving
Spokane County Resolution 04-0461, 2004, County Zoning Code, Chapter 14.802 Off-street Parking and Loading Standards
SCAPCA Order No. 91-01, December 12, 1991, Alternate Opacity Limit for Kaiser Aluminum
SCAPCA Order No. 96-03, October 4, 2000, Limiting Potential to Emit, Kaiser Aluminum
SCAPCA Order No. 96-04, April 24, 1996, Limiting Potential to Emit, Kaiser Aluminum
SCAPCA Order No. 96-05, October 4, 2000, Limiting Potential to Emit, Kaiser Aluminum
SCAPCA Order No. 96-06, October 19, 2000, Limiting Potential to Emit, Kaiser Aluminum

[17] As amended 1/6/94 Resolution 94-02. The 2014 amendments, 7/10/2014 Resolution 14-08, is proposed as a separate SIP amendment.

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Contingency Measures
SRCAA Section 6.14 C.4., Standards for Control of Particulate Matter on Paved Surfaces
SRCAA Section 6.15 G., Standards for Control of Particulate Matter on Unpaved Roads
SRCAA Section 8.07 & Section 8.09, Ban on Uncertified Stoves

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Appendix A. Limited Maintenance Plan Qualification

Design Values

The SCMA design value based on FRM and FEM 24-hour PM10 Monitoring data from the Ferry St. and Augusta Ave. sites in Spokane, Washington. The LMP Guidance directs the design value be based on the most recent five years of data. The most recent five years of data is from 2010-2014 using a combination of FRM and FEM data from the Spokane-Augusta site.

SCMA Design Value

The PM10 SIP Development Guideline (SIP Guideline) allows determining the design value based on Table 4. Tabular Estimation of PM10 Design Values of observation ranges that designates the highest value to be used for the design concentration. The relevant values are shown in Table 5 below.

Table 4. Tabular Estimation of PM_{10} Design Values[18]

Number of Values	Data Point to be Used
1 - 347	Highest Value
348 - 695	Second Highest Value
696 - 1042	Third Highest Value
1043 - 1390	Fourth Highest Value

Table 5. Tabular Estimation of PM_{10} Look-Up Concentrations Using Table 6-1 of PM_{10} SIP Guidelines

Spokane Ferry St FRM and FEM data 2006-2009 Spokane Augusta Ave. FRM and FEM 2009-2014			
5-year Period	Number of Observations	Look-Up Concentration µg/m^3	Data Point Used for Concentration
2007-2011	901	89	Third Highest Value
2008-2012	779	94	Third Highest Value
2009-2113	819	84	Third Highest Value
2010-2014	1047	80	Fourth Highest Value

Since the value for 2010-2014 is below 98 µg/m^3, the value stipulated in the LMP guidance, the SCMA meets this condition.

Motor Vehicle Regional Analysis

To qualify for the PM_{10} LMP option, an area should expect only limited growth in on-road motor vehicle PM_{10} emissions. This means the area must pass the Motor Vehicle Regional Analysis, found in Attachment B of the LMP Guidance. The result of the analysis must be less than 98 µg/m^3, the margin of Safety (MOS) value for the 24-hour PM_{10} standard.

The following methodology was used to determine whether increased emissions from on-road mobile sources could, in the next 10 years, increase concentrations in the SCMA and threaten the assumption of maintenance that underlies the LMP Guidance.

$$DV + (VMT_{pi} \times DV_{mv}) < MOS$$

Where:

[18] PM-10 SIP Development Guidelines, publication EPA 450/2 86-001, Table 6-1, pp.6-5

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DV = The area's design value based on the most recent 5 years of data, µg/m3

VMT_{pi} = The projected percent increase in vehicle miles traveled (VMT) on paved roads over the next 10 years

VMT_{upi} = The projected percent increase in vehicle miles traveled (VMT) on unpaved roads over the next 10 years

DV_{mv} = Motor vehicle design value based on on-road mobile portion of the attainment year inventory, µg/m3

MOS = Margin of safety for 24-hour PM_{10} standard is 98 µg/m3

Step 1. Determine the 5-year design value (DV)

The design value for the 5-years of data (2010-2014) as shown above is 80 µg/m^3.

Step 2. Determine the percent increase in maintenance area average VMT over the next ten years (VMT_{pi})

The VMT data for the SCMA for 2011 and 2025 was supplied by the Spokane Regional Transportation Council (SRTC). The percent increase in VMT was calculated by taking the difference between 2015 and 2025 VMT per day and determining the % change. VMT on unpaved roads within the SCMA are not expected to increase and are given a value of 0 percent. This is the same assumption made and included in the first 10-year LMP, so the first calculation is done with the same assumptions. In addition the same calculations are done with the estimated increase on all roadways paved and unpaved. VMT values are:

Table 6. Modeled VMT Data[19]

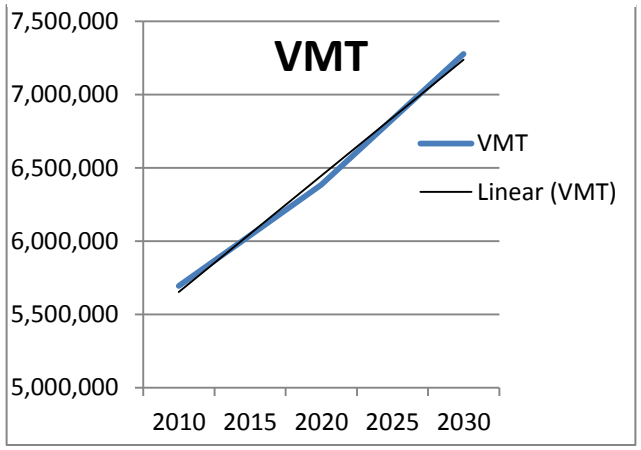
Area	Year		
	2010	2020	2030
PM_{10} Boundary	5,694,290	6,383,360	7,277,925
Spokane County	8,408,329	9,491,705	10,832,029

Interpolating between the 2010, 2020 and 2030 gives the 2015 and 2025 results as:
2025 = 6,830,643
2015 = 6,038,825

This is a 10 year increase of 791,817.5 VMT

Percent Increase (VMT_{pi}) = 13%
VMT_{upi} = 0%

Figure 4. Out Year VMT Estimate Plot



Step 3. Determine the motor vehicle design value based on on-road mobile portion of the attainment inventory (DV_{mv}).

The third paragraph of Attachment B of the LMP Guidance offers: "Please note that DV_{mv} is derived by multiplying DV by the percentage of the attainment year inventory represented by on-road

[19] Modeled VMT data from SRTC's current model set used for "Horizon 2040", their long range transportation plan that was approved in December of 2013.

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mobile sources. This variable should be based on both primary and secondary PM_{10} emissions of the on-road mobile portion of the attainment year inventory, including road dust." Again to be conservative in our calculations the emissions from construction are not used in the total of all sources. This has the effect of increasing the contribution of onroad emissions to the design value. This further ensures that the NAAQS will most likely not be exceeded based on expected VMT growth.

The SCMA is further split into paved and unpaved road dust.

- DV_{mvp} = DV * (Total paved mobile / Total all sources)
- DV_{mvup} = DV * (Total unpaved mobile/ Total all Sources)
- DV_{mvet} = DV * (Total on-road mobile / Total all Sources)

Table 7. Mobile Source Contribution to Design Value

Category	Annual, tons/year	Tons/Day		Contribution to Design Value µg/m^3
Vehicle Exhaust and Tire Wear	346	.94	DV_{mvet}	5.2587
Road Dust, Paved	780	196	DV_{mvp}	10.9650
Road Dust, Unpaved	567	2.45[20]	DV_{mvup}	13.7063
Total, all sources (less construction)	3323	14.3	DV_{mv}	29.93

As calculated in the First 10-year Maintenance Plan

Step 4. Calculate the Regional Emissions Analysis

$DV + (VMT_{pi} * DV_{mvp}) + (VMT_{upi} * DV_{mvup}) + (VMT_{pi} * DV_{mvet}) =$

$80 + (.13 * 10.9650) + (0 * 13.7063) + (.13 * 5.2587) = 82\ \mu g/m^3$

Step 5. Compare with MOS ≤ 98

$82\ \mu g/m^3 < 98\ \mu g/m^3$

Using a 13% increase in all onroad mobile emission the calculation is as follows:

Step 4. Calculate the Regional Emissions Analysis

$DV + (VMT_{pi} * DV_{mv}) =$

$80 + (.13 * 29.93) = 84\ \mu g/m^3$

Step 5. Compare with MOS ≤ 98

$84\ \mu g/m^3 < 98\ \mu g/m^3$

The SCMA qualifies for the LMP option with either calculation.

[20] Maximum Daily Value

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Appendix B. Ecology 2014 Network Report/EPA approval

Purpose of the report
The Department of Ecology (Ecology) reviews its ambient air quality monitoring network each year to ensure that it collects adequate, representative, and useful air quality data on which to base policy decisions. This report summarizes the results of the 2014 review. These results include:

- Identifying modifications to Ecology's ambient air monitoring network since the 2013 annual network report
- Identifying proposed modifications to the network for the upcoming year
- Documenting Ecology's ambient air quality monitoring needs, goals, and priorities

2014 Network Report, PM Section
The following is the PM monitoring section of the Ecology 2014 Network report for all monitors in Washington State, references to other monitoring has been removed.

Particulate Matter 10 (PM_{10}, 81102)

Recommendations/Proposed Modifications: None
Additional Monitors: None. Continue all identified sites
Thurston County Maintenance Area (Lacey $PM_{2.5}$)
The Lacey College Street $PM_{2.5}$ nephelometer site (530670013) is being used to assure continued compliance with the PM_{10} NAAQS as well as to confirm the Thurston County Maintenance Area (TCMA) continues to meet the qualification criteria of EPA's Limited Maintenance Plan (LMP) approach.

A 5-year NPM_{10} design value below 98µg/m3 demonstrates the TCMA continues to qualify for the LMP approach. The Lacey-College Street nephelometer site (53670013) 5-year PM_{10} design value estimate for 2009-2013 was 45 µg/m3. The PM_{10} design value estimate for 2011-2013 was 45 µg/m3. This current design value estimates demonstrate the TCMA complies with the PM_{10} standard and continues to meet EPA's LMP qualification criteria.

Kent, Seattle, & Tacoma PM_{10} Maintenance Areas
Three and five year design values for the Kent, Seattle, and Tacoma PM_{10} Maintenance Areas were calculated using the table look up method and the statistical fit method outlined in the LMP guidance document.

A 3-year PM_{10} design value of 150 µg/m3 or below demonstrates continued compliance with the PM_{10} NAAQS. A 5-year design value below 98 µg/m3 is required to qualify for the LMP approach. Design values calculated using the table look up method fall within the range of uncertainty of the statistical fit method. Because they are the most conservative values, only the statistical fit values are presented here.

The $PM_{2.5}$ FEM TEOM at James St. and Central Ave. (530332004) is used to assure continued compliance with the PM_{10} NAAQS and to confirm continued eligibility for the Limited Maintenance Plan approach. The five year design value is 47±4 µg/m3 and the three year design value is 47±3 µg/m3.

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The $PM_{2.5}$ FEM TEOM at Seattle-Duwamish (530330057) is used to assure continued compliance with the PM_{10} NAAQS and to confirm continued eligibility for the Limited Maintenance Plan approach. The five year design value is 58±6 µg/m3 and the three year design value is 59±8 µg/m3.

The $PM_{2.5}$ Nephelometer at Tacoma – Alexander Ave. (530530031) is used to assure continued compliance with the PM_{10} NAAQS and to confirm continued eligibility for the Limited Maintenance Plan approach. The five year design value is 64±12 µg/m3 and the three year design value is 65±13 µg/m3.

Table 8. Particulate Matter 10 PM_{10}, Parameter code 81102

AQS#	Site Name	Est.	Type	Scale	Sampling Type	Action for 2014
530650004	Colville, S Oak	11/96 3/07	SLAMS	Neighborhood	Continuous	Continue
530050002	Kennewick, Metaline Ave.	10/94	SLAMS	Neighborhood	Continuous	Continue
530630021	Spokane, Augusta Ave.	3/09	SLAMS	Middle	1/6	Continue
530630021	Spokane, Augusta Ave.	3/09	Collocated	Middle	1/12	Continue
530770009	Yakima, S 4th	4/00	SLAMS	Neighborhood	1/6	Continue

Additional Monitors: None.

Recommendations/Proposed Modifications: None

Note:

Thurston County Maintenance Area (Lacey $PM_{2.5}$)
The Lacey College Street $PM_{2.5}$ nephelometer site (530670013) is being used to assure continued compliance with the PM_{10} NAAQS as well as to confirm the Thurston County Maintenance Area (TCMA) continues to meet the qualification criteria of EPA's Limited Maintenance Plan (LMP) approach.

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method. Because they are the most conservative values, only the statistical fit values are presented here.

The $PM_{2.5}$ FEM TEOM at James St. and Central Ave. (530332004**)** is used to assure continued compliance with the PM_{10} NAAQS and to confirm continued eligibility for the Limited Maintenance Plan approach. The five year design value is 47±4 µg/m3 and the three year design value is 47±3 µg/m3.

The $PM_{2.5}$ FEM TEOM at Seattle-Duwamish (530330057) is used to assure continued compliance with the PM_{10} NAAQS and to confirm continued eligibility for the Limited Maintenance Plan approach. The five year design value is 58±6 µg/m3 and the three year design value is 59±8 µg/m3.

The $PM_{2.5}$ Nephelometer at Tacoma – Alexander Ave. (530530031) is used to assure continued compliance with the PM_{10} NAAQS and to confirm continued eligibility for the Limited Maintenance Plan approach. The five year design value is 64±12 µg/m3 and the three year design value is 65±13 µg/m3.

Colville, S Oak

Site Name	Colville, S Oak
AQS ID	530650004
GPS coordinates	LAT/LONG: 048 32' 41" / 117 54' 13"
Location	On the roof of the Courthouse
Address	215 South Oak, Colville
County	Stevens
Distance to road from gaseous probe (meters)	20
Traffic count (AADT, year)	N/A

Groundcover	Asphalt, cement, grass
Statistical Area	Not in an urban area

Monitor Information Pollutant, POC	
Parameter code	81102
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo TEOM
Method code	079
FRM/FEM/ARM/other	FEM
Collecting Agency	Ecology
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	11/96
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	2
Distance from supporting structure (meters)	N/A
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	50+
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the PM_{10} NAAQS?	Yes
Design value	0.34

Purpose: Colville S. Oak is a neighborhood scale site for PM_{10} established in 1996, located in the commercial/residential area of Colville on the roof of the Courthouse.

Exceedences: This site has exceeded the standard for PM_{10} in the past 3 years (2011).

Kennewick, Metaline Avenue – (BCAA)

Site Name	Kennewick, Metaline Avenue
AQS ID	530050002
GPS coordinates	LAT/LONG: 046 13' 06" / 119 12' 03"
Location	On the roof of the Kennewick Skills Center
Address	5929 West Metaline, Kennewick
County	Benton

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Distance to road from gaseous probe (meters)	84
Traffic count (AADT, year)	N/A
Groundcover	Rooftop- asphalt, ground-grass & asphalt
Statistical Area	Richland-Kennewick-Pasco, WA

Kennewick, Metaline Avenue Monitor Information	
Pollutant, POC	
Parameter code	81102
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Thermo TEOM
Method code	079
FRM/FEM/ARM/other	FEM
Collecting Agency	Benton County Clean Air Agency
Analytical Lab	N/A
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	10/94
Current sampling frequency	Continuous
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	7
Distance from supporting structure (meters)	N/A
Distance from obstructions on roof (meters)	18
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	66
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	6
Unrestricted airflow (degrees)	360
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the PM_{10} NAAQS?	Yes
Design value	1.6 (0.4[1])

Purpose: Kennewick is a neighborhood scale site for PM_{10} established in 1994 and located in the downtown Kennewick area. It is representative of Kennewick and the surrounding area which is subject to windblown dust.

Exceedences: Kennewick had 3 exceedances of 24-hr PM_{10} standard in 2013 and Washington plans to pursue exceptional event status for them.

[1] Pending exceptional events demonstration for high winds on 9/15/2013, 10/28/2013 and 11/02/2013.

Spokane, Augusta Ave. – (SRCAA)

Site Name	Spokane, Augusta Avenue.
AQS ID	530630021

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GPS coordinates	LAT/LONG: 047 39' 39" / 117 21' 26"
Location	On the roof of the Spokane Region Clean Air Agency
Address	3104 E. Augusta Ave., Spokane
County	Spokane
Distance to road from gaseous probe (meters)	27
Traffic count (AADT, year)	N/A
Groundcover	Membrane roof, asphalt
Statistical Area	Spokane, WA

Monitor Information Pollutant, POC	
Parameter code	81102
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS - Collocated
Instrument manufacturer and model	Thermo TEOM
Method code	079
FRM/FEM/ARM/other	FEM/FRM
Collecting Agency	Spokane Region Clean Air Agency
Analytical Lab	Ecology
Reporting Agency	Ecology
Spatial scale	Middle
Monitoring start date	3/09
Current sampling frequency	Continuous & 1/6
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	3
Distance from supporting structure (meters)	0.5
Distance from obstructions on roof (meters)	N/A
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the PM10 NAAQS?	Yes
Design value	0.35

Purpose: Augusta Ave. is a middle scale site for PM_{10} located in a commercial area of Spokane. The site is representative of the Spokane area which is a past PM_{10} nonattainment area.

Exceedences: We had one exceedance of the 24-hour PM_{10} standard at Spokane. We have flagged this value, leaving open the possibility that we could submit an exceptional event demonstration to EPA in the future.

Yakima, S 4th – (YRCAA)

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Site Name	Yakima, S 4th
AQS ID	530770009
GPS coordinates	LAT/LONG: 046 35' 42" / 120 30' 44"
Location	On the roof of Yakima Comprehensive Mental Health
Address	402 South 4th Avenue, Yakima
County	Yakima
Distance to road from gaseous probe (meters)	N/A
Traffic count (AADT, year)	N/A
Groundcover	Membrane roof, cement
Statistical Area	Yakima, WA

Monitor Information Pollutant, POC	
Parameter code	81102
Basic monitoring objectives(s)	NAQQS Compliance
Site type(s)	Population Exposure
Monitor type(s)	SLAMS
Instrument manufacturer and model	Grasby Anderson
Method code	063
FRM/FEM/ARM/other	FRM
Collecting Agency	Yakima Region Clean Air Agency
Analytical Lab	Ecology
Reporting Agency	Ecology
Spatial scale	Neighborhood
Monitoring start date	4/00
Current sampling frequency	1/6
Calculated sampling frequency	N/A
Sampling season	Year-round
Probe height (meters)	2 rooftop, 12 ground
Distance from supporting structure (meters)	N/A
Distance from obstructions on roof (meters)	7
Distance from obstructions not on roof (meters)	N/A
Distance from trees (meters)	34
Distance to furnace or incinerator flue (meters)	N/A
Distance between collocated monitors (meters)	N/A
Unrestricted airflow (degrees)	360
Spacing from minor sources	No minor sources
Probe material for reactive gases	Teflon
Residence time for reactive gases (seconds)	N/A
Changes within the next 18 months?	None anticipated
Is it suitable for comparison against the PM_{10} NAAQS?	Yes
Design value	0

Purpose: S 4th is a neighborhood scale site for PM_{10} located in a commercial/residential area near downtown Yakima. The site is representative of the Yakima area, a past PM_{10} nonattainment area.

Exceedences: This site has not exceeded standard for PM_{10} in the past 3 years.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OCT 30 2014

OFFICE OF
AIR, WASTE AND TOXICS

Mr. Mike Ragan
Air Monitoring Coordinator
Air Quality Program
WA Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Mr. Ragan:

EPA has evaluated the Washington Department of Ecology's (Ecology's) 2014 Ambient Air Monitoring Network Plan (2014 Plan). In the 2014 Plan, Ecology proposed changes to the Washington monitoring network. EPA evaluated the proposed changes to the network in accordance with 40 C.F.R. § 58.10, and with consideration of the applicable requirements identified in 40 C.F.R. Part 58, Appendices D and E. Following are EPA's responses to specific proposed network changes:

- The Seattle Duwamish $PM_{2.5}$ SLAMS monitor has been relocated to 4700 E. Marginal Way (about a block away from previous location) due to loss of the lease at the previous site. The new site represents the same area and scale as the previous site, and it meets all siting criteria in Appendices D and E. EPA therefore approves this relocation pursuant to 40 C.F.R. § 58.14(c)(6), which allows a state to relocate a SLAMS monitor to a nearby location with the same scale of representation if there is a logistical problem beyond the state's control in continuing to operate the monitor at the current site.
- Ecology proposed to relocate the Port Angeles $PM_{2.5}$ Special Purpose Monitor, currently located at Stevens Middle School, to the Port Angeles Fire Station. Data from a 2014 saturation study, conducted at four locations, including the Stevens Middle School, show the highest $PM_{2.5}$ levels are found at the Port Angeles Fire Department site for most of the year. Based on these results, Ecology requests that this monitor be relocated to the Port Angeles Fire Department site. The Stevens Middle School monitor has not violated the $PM_{2.5}$ NAAQS in the past five years. EPA approves this monitor relocation because it finds that the Fire Station site meets the requirements specified in Appendix D, and because EPA concludes that discontinuation of the Steven Middle School monitor will not compromise data collection needed for implementation of a NAAQS.
- In April 2014 Ecology established its first NO_2 near-roadway monitoring site in the Seattle-Tacoma area at the Seattle 10th and Weller site, which satisfies the requirement for near-roadway NO2 monitoring in metropolitan areas with populations greater than 500,000, as required by Appendix D 4.3.2(a). CO monitoring has also been established at this site, which satisfies the requirement for CO monitoring at near-roadway sites in metropolitan areas with populations greater than 1 million, as required by Appendix D, 4.2.1. EPA therefore approves these changes.
- The Seattle Olive Street $PM_{2.5}$ FEM, which was a Special Purpose Monitor being operated at the state's discretion, was relocated to the Seattle 10th & Weller near-road

SLAMS site in June 2014. This satisfies the requirement for $PM_{2.5}$ monitoring at near-roadway sites in metropolitan areas with populations greater than 1 million, as required by Appendix D, 4.7.1(b)(2). At its new location, the PM2.5 monitor will now be a SLAMS monitor. EPA approves this monitor relocation.

- Ecology noted its intention to relocate the Vancouver Plaza Drive $PM_{2.5}$ monitor due to microscale source impacts at this site. Ecology has determined that the Vancouver Plaza Drive site does not meet its intended neighborhood-scale siting objective primarily because of direct observations of smoke impacts from nearby residential chimneys. Ecology plans to move the Vancouver Plaza Drive site by the end of 2014 to a location that meets neighborhood-scale siting criteria. However, since no specific relocation site was identified in the 2014 Plan, EPA cannot approve a site relocation at this time. Please submit the proposed new site location information to EPA for approval before operating this site.

Except for the relocation of the Vancouver Plaza Drive site addressed above, EPA approves Washington's 2014 Plan.

If you have any questions about our approval of Washington's 2014 Plan, please contact Keith Rose at (206) 553-1949.

Sincerely,

Robert A. Elleman

Robert Elleman, Acting Manager
Air Planning Unit

cc: Chris Hall, OEA
Keith Rose, OAWT
Jeff Hunt, OAWT
Claudia Vaupel, OAWT

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Appendix C. Emission Inventory Documentation

Ecology's 2011 triennial emissions inventory (2011 EI) was used for the 2nd 10-year LMP. The 2011 estimates were available as annual emissions for Spokane County. In the original maintenance plan and LMP (2005) SRCAA contracted with E.H. Pechan and Associates, Inc. to develop a very detailed emission inventory. For this LMP we concentrated on the significant emissions involved in the three worst-case scenarios from the attainment plan and first LMP, unpaved roads, paved roads and residential wood combustion. Temporal and spatial allocations to the maintenance area of most of the source categories were the same as developed by Pechan[21] for the first LMP. For any emissions not modified from the 2011 Emissions Inventory, refer to the discussion found in that document. For categories where local data was not available Ecology accepted the EPA estimates in the NEI for the missing categories.

Point Sources

Point source emissions were based on 2011 data[22] submitted directly to SRCAA by the Air Operating Permit sources and spatially allocated based on facility location.

Nonpoint Sources

Residential Wood Combustion, Paved Road Dust and Unpaved Road Dust are nonpoint sources. These emissions are typically estimated by multiplying an activity level, such as wood combusted or Vehicle Miles Traveled (VMT), by an emission factor in mass per activity.

Emissions = Activity level x Emission Factor

Estimation methods and data sources for these nonpoint sources are described below.

Residential Wood Combustion

Residential wood combustion (RWC) emissions are based on the 2011 Emission Inventory. RWC consists of home heating and recreational use of woodstoves, fireplaces, and fireplace inserts. Activity parameters for the 2011 EI include the type of wood burning devices [certified (catalytic and noncatalytic) woodstoves, uncertified woodstoves and fireplaces], the amount and species of wood burned from each device and seasonal, daily and hourly usage rates. A survey was conducted in 2007 by the National Research Center (NRC2007). It covered the central Puget Sound region. The NRC2007 survey was used in the 2011 EI to characterize all counties except those classified as eastern WA rangeland. Spokane County was characterized using the household weighted average of all the Puget Sound survey areas from the NRC2007 except King County. Emission factors in pounds of PM_{10} per ton of wood burned were taken from version 1 of EPA's 2011 Residential Wood Combustion tool.

Temporal and spatial allocations to the maintenance area of the RWC emissions were the same as developed by Pechan[23] for the first LMP.

[21] E.H. Pechan and Associates, Inc., 2002 PM_{10} Emission Inventory for the Spokane Nonattainment Area, September 2004, Pechan Report No. 04.08.002/9443.003

[22] 2011 emission data was obtained from the SRCAA 2012 AOP billing information.

[23] E.H. Pechan and Associates, Inc., 2002 PM_{10} Emission Inventory for the Spokane Nonattainment Area, September 2004, Pechan Report No. 04.08.002/9443.003

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Table 9. Spokane County Residential Wood Combustion Emissions

Device Type	Emission rate by type	Tons Burned (Spokane County)	Emissions Tons/year
Fireplace	23.6	21459	253.22
Inserts, certified catalytic	20.4	4319	44.05
Woodstoves, certified catalytic	20.4	6931	70.70
Inserts, certified non-catalytic	19.6	12956	126.96
Woodstoves, certified non-catalytic	19.6	2079	203.78
Inserts, uncertified	30.6	15933	243.77
Woodstoves, uncertified	30.6	25574	391.28
Pellet stoves	3.06	2291	3.51
Firelogs, all devices	29.32	1051	15.41
Total			1352.68

Paved Road Dust

Paved Road Dust emissions are based on the 2011 EI. Average Daily Vehicle Miles Traveled (ADVMT) for Spokane County was estimated by Washington State Department of Transportation (WSDOT) under the national Department of Transportation's Highway Performance Monitoring System (HPMS). HPMS is a system of traffic counts collected over several urban and rural sampling areas. WSDOT makes estimates of county VMT by roadway (functional) classification using the HPMS data. PM_{10} emission rates in grams per mile were calculated using equation 2 in EPA's AP42. Monthly emissions were calculated using monthly adjustment factors and summing the appropriate months to get seasonal and annual emissions.

Unpaved Road Dust

Similar to paved roads, unpaved road dust emissions are generated as vehicles pass along unpaved roadways and disturb the layer of loose material on or near the road surface. The unpaved road calculation excludes emissions from exhaust and brake and tire wear, which are estimated as part of the onroad mobile source emissions.

ADVMT is used to estimate unpaved road activity and calculate dust emissions. The County Road Administration Board (CRAB) provided roadway mileage and ADVMT estimates on unpaved roads by county. WSDOT provided estimates of city jurisdiction unpaved roadway mileage for each county. The CRAB data was used to develop average daily traffic (ADT) per mile; this was multiplied by the latest miles of unpaved roads in Spokane County and the SCMA obtained from the Spokane Regional Transportation Council to get the ADVMT.

Ecology used equation 2 of EPA's AP42 to develop monthly unpaved roads PM_{10} Emission Rates in lb/mi, Table 3-8 of the 2011 EI. SRCAA used ADVMT for Spokane County's SCMA unpaved roads and the monthly emission rate to get daily and annual unpaved road emissions.

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Table 10. Unpaved Road Emissions Calculations

			Spokane County			SCMA		
Month	lb/mi	Days	ADVMT	Tons/month	Tons/day	ADVMT	Tons/month	Tons/day
JAN	0.202	31	116708	365	11.79	12929	37	1.19
FEB	0.283	28	116708	462	16.51	12929	47	1.67
MAR	0.121	31	116708	219	7.06	12929	22	0.71
APR	0.167	30	116708	292	9.75	12929	29	0.98
MAY	0.202	31	116708	365	11.79	12929	37	1.19
JUN	0.306	30	116708	536	17.86	12929	54	1.80
JUL	0.323	31	116708	584	18.85	12929	59	1.90
AUG	0.417	31	116708	754	24.33	12929	76	2.45
SEP	0.362	30	116708	634	21.12	12929	64	2.13
OCT	0.229	31	116708	414	13.36	12929	42	1.35
NOV	0.264	30	116708	462	15.41	12929	47	1.55
DEC	0.296	31	116708	535	17.27	12929	54	1.74
Annual Unpaved Road Emissions				5624			567	
Average Daily Unpaved Road Emissions					15.42			1.56

		ADVMT
ADT/mile	96.5	
Spokane Co miles	1209.41	116708
SCMA miles	121.97	11770

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Appendix D. Changes to Regulation 1 – Article VI – Emissions Prohibited since adoption into the SIP

SRCAA notes that Section 6.05(A) is a nuisance provision outside the scope of regulating criteria pollutants under Clean Air Action section 110 and requests that the EPA correct the SIP to remove this provision.

SECTION 6.05 PARTICULATE MATTER AND PREVENTING PARTICULATE MATTER FROM BECOMING AIRBORNE

A. It shall be unlawful for any person to cause or allow the discharge of particulates in sufficient numbers to unreasonably cause annoyance to any other person when deposited upon the real property of others~~, except as follows:~~.

> ~~1. Temporarily due to breakdown of equipment provided the breakdown is reported as soon as possible but no later than the next regular working day and repairs are promptly made.~~
>
> ~~2. The time period allowed by the Control Officer for the owner or operator to meet the compliance order.~~

B. It shall be unlawful for any person to cause or permit particulate matter to be handled, transported or stored without taking reasonable precautions to prevent the particulate matter from becoming airborne.

C. It shall be unlawful for any person to cause or permit a building or its appurtenances or a road to be constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions to prevent particulate matter from becoming airborne must also be used on roads used as detour routes around roads, or section of road that are being constructed, altered, repaired, demolished, or closed for any purpose.

D. It shall be unlawful for any person, including the owner or person in control of real property to cause or allow particulate matter to be deposited upon a paved roadway open to the public without taking every reasonable precaution to minimize deposition. Reasonable precautions shall include, but are not limited to, the removal of particulate matter from equipment prior to movement on paved streets and the prompt removal of any particulate matter deposited on paved streets.

E. It shall be unlawful for any person to cause or allow visible emissions of fugitive dust unless reasonable precautions are employed to minimize the emissions. Reasonable precautions may include, but are not limited to, one or more of the following:

> 1. The use of control equipment, enclosures, and wet (or chemical) suppression techniques, and curtailment during high winds;
>
> 2. Surfacing roadways and parking areas with asphalt, concrete, or gravel;
>
> 3. Treating temporary, low traffic areas (e.g., construction sites) with water or chemical stabilizers, reducing vehicle speeds, constructing pavement or rip rap exit aprons, and cleaning

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vehicle undercarriages and tires before they exit to prevent the track-out of mud or dirt onto paved public roadways; or

4. Covering or wetting truck loads or allowing adequate freeboard to prevent the escape of dust-bearing materials.

SECTION 6.14 STANDARDS FOR CONTROL OF PARTICULATE MATTER ON PAVED SURFACES

A. Applicability. The provisions of Section 6.14 shall apply to any government agency of a state, county, city or ~~local government~~ municipal corporation ~~or private company~~ that applies or contracts for application of sanding materials to or mechanically sweeps or vacuums or contracts for sweeping or vacuuming of paved surfaces within the PM10 Nonattainment area, or within the PM10 maintenance area after the nonattainment area is redesignated to attainment. This Section shall also apply to all suppliers of sanding materials to be used by these affected entities.

B. Definitions.

1. Affected Entity is any governmental agency of a state, county, city or ~~local government~~ municipal corporation as ~~or private company that applies sanding material to, or mechanically sweeps or vacuums paved surfaces within the PM10 Nonattaiment area~~ described in Subsection A.

2. Approved Laboratory means a certified or approved facility capable of performing the specified tests in a competent, professional, and unbiased manner in accordance with ASTM testing procedures.

3. The Authority is the Spokane ~~County Air Pollution Control Authority~~ Regional Clean Air Agency.

4. Base Sanding Amount is the average amount of sanding materials applied per lane mile by each affected entity within the PM10 Nonattainment Area during the 1992 – 1993 season or another base season, as requested by an affected entity and approved by the Authority.

5. Durability Index means the percent loss of weight as determined using ASTM "Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine", designated C131-89, or other approved ASTM procedure.

6. Full Deployment means that sanding materials have been applied to all priority roadways targeted for treatment during a snow/ice event ~~are sanded~~.

7. Percent Fines means the percent material passing a #100 sieve as determined by the American Society for Testing Materials (ASTM) "Standard Method for Sieve Analysis of Fine and Coarse Aggregates", Designation C136-84a (1988) (American Highway and Transportation Officials designation T27-88), or other approved ASTM procedure.

8. PM10 Maintenance Area means the same as the PM10 Nonattainment area unless otherwise defined in an approved PM10 Maintenance Plan.

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~~8~~9. PM10 Nonattainment Area means the Spokane County PM10 Nonattainment Area, defined in CFR Title 40, Part 81, as designated on November 15, 1990. ~~This definition will remain in effect, even after the United States Environmental Protection Agency makes a determination that the PM10 standard that existed before September 16, 1997, no longer applies to Spokane County. Retaining the definition ensures compliance with the Environmental Protection Agency's Guidance for Implementing the 1-Hour Ozone and Pre-Existing PM10 NQQAS, dat3ed December 29, 1997, by continuing implementation of control measures in the State Implementation Plan and preserving air quality gains.~~

~~9~~10. Priority Roadway means any street, arterial, or highway, within the PM10 Nonattainment Area, with more than 15,000 average daily traffic count, and any connecting entrance or exit ramp.

1~~0~~1. Recycled Sanding Materials means previously used sanding materials which have been collected from roadways or paved areas and are then re-used as is, after washing, or after blending with new sanding materials.

1~~1~~2. Sanding Materials means natural geologic materials, excluding salt and other de-icing chemicals, used to provide increased traction on roadways or paved areas.

1~~2~~3. Season means the period beginning, November 1, in one calendar year and concluding on April 30, the next calendar year.

C. Emission reduction and control plans. Each affected entity shall submit to the Authority an initial plan, including an implementation schedule describing the programs and methods to be used to reduce PM10 emissions from paved surfaces~~, within 30 days after the effective date of this regulation~~. If the affected entity incorporated after the effective date of this regulation, that entity shall submit an initial plan within 180 days of incorporation. In reviewing each plan, the Authority shall allow consideration of mobility and transportation safety factors. ~~Approval of any plan shall require that the Authority determine~~ In approving any initial plan, or plan revision the Authority must make a finding, in consultation with the Washington State Department of Ecology, that the cumulative effect of the plans submitted by all affected entities will ~~achieve and~~ maintain at least a 70% reduction, from the 1992 - 1993 base season, in the 24 hour PM10 emissions from paved surfaces.

1. Each plan is subject to approval by the Authority and shall address ~~but not necessarily be limited to~~, at a minimum, all of the following:

a. Base sanding amount;

b. Percent sanding reduction goal;

c. Sanding materials specifications to be employed;

d. Criteria for application of sanding materials. Where and when sanding materials are applied;

~~d~~e. Identification of priority roadways;

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~~e~~f. Locations, application rates, and circumstances for the use of chemical deicers and other sanding alternatives;

~~f~~g. Street sweeping frequency and technology to be employed;

h. Factors for determining when and where to initiate street sweeping following a sanding event, with the goal of expeditious removal of sanding materials from priority roadways when safety and mobility requirements have been satisfied;

~~h~~i. An implementation schedule giving the estimated dates of start and completion, if applicable, of each part of the plan; and

j. A schedule for removal of sanding materials from all surfaces to which they are applied.

2. ~~Beginning 30 days after the effective date of the regulation, t~~ The plans submitted shall be implemented by each affected entity~~. U~~upon approval of each plan~~, the affected entity shall implement the approved plan~~.

3. Within 45 days of submittal of the reports required in Subsection ~~G~~F. of this Section, the Authority shall determine if the plan commitments have been met and shall notify ~~any~~ each affected entity that has failed to ~~meet plan commitments~~ fully implement its plan.

~~4. If the authority determines that any governmental entity has failed to meet the plan commitments, the Authority, shall require that any affected governmental entity submit a revised plan within 30 days of notification by the Authority. The revised plan shall establish methods for meeting the plan commitments. Any revised plan must be implemented upon approval by the Authority.~~

~~5~~4. If the Authority, after consultation with the affected entities, the Washington Department of Ecology, and the United States Environmental Protection Agency, determines that the emission reduction and control plans do not provide for sufficient reduction in PM10 emissions to achieve the emission reduction credit for paved road surfaces as contained in the State Implementation Plan, the Authority may require ~~the~~ any or all affected ~~governmental~~ entities to modify their plans in order to achieve additional reductions.

5. Each affected entity shall review their approved plan within 90 days of the effective date of the amendment to this regulation and every five (5) years thereafter and within 90 days of the Authority's determination made pursuant to Subsection C. 4. and revise the plan as appropriate to ensure that identified priority roadways reflect changes in traffic counts and driving patterns and that all aspects of the plan reflect current sanding and sweeping technologies, programs, and schedules of the affected entity and requirements of the Authority. All amended plans are subject to approval by the Authority.

~~D. Sweeping requirements. Beginning the effective date of this regulation, the City of Spokane, Spokane County, and the Washington State Department of Transportation, or their contractors, shall clean all priority roadways in an expeditious manner following each event when road conditions are~~

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~~appropriate and safety and mobility requirements have been satisfied. Cleaning shall be accomplished with broom sweepers or a more effective technique approved by the Authority.~~

~~E~~D. Sanding Materials Specifications

1. Material Standards. No affected entity shall use sanding materials, whether new or recycled, which equal or exceed 3% fines and 25% durability index.

2. Contractual Requirements. After the effective date of this regulation, no affected entity shall execute a contract for the purchase of sanding materials unless the contract includes standards at least as stringent as those set forth in Subsection E.1. of this Section.

~~F~~E. Testing

1. Supplier Testing Requirements

a. Suppliers of sanding materials shall have tests performed by an approved laboratory to determine the percent fines and durability index on representative samples of their sanding materials which are supplied to affected entities.

b. The sampling and test frequency and methodology used shall ensure that the samples are representative and enable the supplier to certify to the affected entity that the actual sanding materials supplied for use will meet the requirements of Subsection ~~E~~D. of this Section.

2. User Requirements. Affected entities or their contractors shall have at least one test performed by an approved laboratory to determine the percent fines and durability index on all recycled materials at least once for the first 250 tons of recycled materials used each season and at least once for every 500 tons of recycled materials used thereafter during the same season.

3. Authority Audits. The Authority may enter the site of any affected entity or supplier of sanding materials subject to this Section for the purpose of obtaining a sample of sanding materials to determine if the materials meet the requirements of Subsection ~~E~~D. of this Section.

~~G~~F. Reporting

1. Supplier Reporting Requirements. Prior to, or upon, delivery of sanding materials, suppliers shall provide affected entities that use their sanding materials a report demonstrating that the supplier has met all testing requirements of this Section applicable to the time period in which deliveries are made. The supplier shall certify in writing to the affected entity that the sanding materials meet the requirements of Subsection ~~E~~D. of this Section.

2. Affected Entity Reporting Requirements

a. Affected entities that use recycled sanding materials shall submit to the Authority copies of the results of testing conducted according to Subsection ~~F~~E.2. of this Section no later than 30 days after the tests are conducted.

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b. No later than June 30, of each year, affected ~~governmental~~ entities shall submit a report to the Authority containing information for the preceding season on:

1) the total amount of sanding materials (both new and recycled) and salt and other deicing chemicals used;

2) the number of lane miles sanded, salted and deiced; and

3) the number of full deployment episodes; and

~~4) the same information specified in b.(1), b.(2) and b.(3), for all private companies performing sanding, salting, or deicing services under contract with the affected governmental intity.~~

~~c. No later than June 30, of each year, private companies that use 250 tons of sanding material or more per season for non-governmental applications within the PM10 nonattainment area shall submit a report to the Authority containing information for the preceding season on the total amount of sanding materials (both new and recycled) and salt and other deicing chemicals used;~~

~~d~~c. Within 7 calendar days of awarding a contract for the purchase of sanding materials to a supplier, an affected entity shall notify the Authority of the supplier's name and location of the aggregate sources from which the materials will be supplied.

~~e~~d. Affected entities shall maintain on file reports received under the provisions of Subsection ~~G~~F.1. of this Section for a period of three (3) years.

3. Sweeper Reporting Requirements

a. Affected entities shall maintain monthly records to document the information described below. No later than June 30, of each year, each affected entity shall submit a report to the Authority ~~which~~ that shall contain the information described ~~below for each priority roadway~~.

1) Date of each sweeping operation;

2) Priority ~~L~~lane miles swept;

3) All other lane miles swept;

~~3~~4) Type of equipment used; and

~~4~~5) Number of passes on priority roadways.

~~5) The same information specified in a.(1), a(2), a(3) and a.(4), for all private companies performing sweeping under a contract with the affected governmental entity.~~

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4. Authority Audits. All records generated under the provisions of this Section shall be made available for inspection upon request by the Authority.

~~H~~G. Alternate Test Methods and Standards. Alternate percent fines and durability index test procedures may be approved by the Authority should they be determined to provide a measure that is equivalent to the test procedures of this Section.

~~I~~H. Alternate Sanding Materials. Experimentation with new sanding materials may be approved by the Authority provided the Authority finds that the impact of such experiments will not cause ~~or contribute to a violation of the National Ambient Air Quality Standard (NAAQS) for PM10~~ a failure to maintain the 70% reduction in PM10 emissions from the 1992-93 base season, as described in Subsection C.

~~J. Failure to comply with this Section will subject affected entities and/or suppliers to penalties as provided in Article II of this Regulation.~~

SECTION 6.15 STANDARDS FOR CONTROL OF PARTICULATE MATTER ON UNPAVED ROADS

A. Applicability. The provisions of Section 6.15 shall apply to:

1. The City of Spokane, the Town of Millwood, Spokane County, and other governmental entities responsible for the maintenance of unpaved public roads within the PM10 Nonattainment Area; and

2. Those specific unpaved public roads which have been identified by Ecology or the Authority for inclusion in an implementation plan or a maintenance plan for control of PM10 emissions.

B. Definitions.

1. Authority means the Spokane ~~County Air Pollution Control Authority~~ Regional Clean Air Agency.

2. Ecology means the Washington Department of Ecology.

3. EPA means the United States Environmental Protection Agency or the Administrator of the United States Environmental Protection Agency or his/her designated representative.

4. Implementation Plan has the same meaning as in Section 110 of the Federal Clean Air Act (42 USC 7410).

5. Maintenance Plan has the same meaning as in Section 175A of the Federal Clean Air Act (42 USC 7505).

6. Palliative means salts and other hygroscopic materials, petroleum resins, asphalt emulsions, adhesives, chemical soil stabilizers or other surface treatment materials acting as a method of dust control, and not prohibited for use by any local, state, or federal law, rule, or regulation.

7. Paved means application of concrete, asphaltic concrete, asphalt, or combination thereof as a means of forming a permanent surface for a road.

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8. PM10 Nonattainment Area means the Spokane County PM10 Nonattainment Area, defined in CFR Title 40, Part 81, as designated on November 15, 1990. This definition will remain in effect, even after EPA makes the determination that the PM10 standard that existed before September 16, 1997, no longer applies to Spokane County. Retaining the definition ensures compliance with the EPA's Guidance for Implementing the 1-Hour Ozone and Pre-Existing PM10 NAAQS, dated December 29, 1997, by continuing implementation of control measures in the Implementation Plan and preserving air quality gains.

9. Reasonable Further Progress has the same meaning as in Section 171(1) of the Federal Clean Air Act (42 USC 7501).

C. Emission Reduction and Control Plan. Each applicable governmental entity shall submit an Emission Reduction and Control Plan for approval by the Authority, which includes the following for each applicable unpaved road:

1. A schedule for paving, periodic application of palliative, or implementation of other control measures.

2. Specification of the type of palliative to be applied and its application rate, paving specifications, or specifications of other control measures with sufficient detail for the Authority to determine emission reductions.

D. Emission Reduction Contingency Plan. Each applicable governmental entity shall submit an Emission Reduction Contingency Plan for approval by the Authority, which includes the following for each applicable unpaved road:

1. A schedule for paving, periodic application of palliative, or implementation of other control measures.

2. Specification of the type of palliative to be applied and its application rate, paving specifications, or specifications of other control measures with sufficient detail for the Authority to determine emission reductions.

E. Effective dates. The applicable governmental entities shall comply with the following effective dates whenever an unpaved road is identified by Ecology or the Authority for control of PM10 emissions as part of an implementation plan:

1. For any unpaved road so identified prior to the effective date of Section 6.15 of this regulation, the entity shall submit the Emission Reduction and Control Plan or Emission Reduction Contingency Plan, whichever applies, within 60 days after the effective date.

2. For any unpaved road so identified after the effective date of Section 6.15 of this regulation, the entity shall submit the Emission Reduction and Control Plan or Emission Reduction Contingency Plan, whichever applies, within 60 days after such identification.

F. Approval and Implementation.

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1. The Authority shall review the Emission Reduction and Control Plan submitted pursuant to Section 6.15.C. of this Regulation and within 60 days after approval by the Authority, the applicable governmental entity shall implement the plan.

2. The Authority shall review the Emission Reduction Contingency Plan submitted pursuant to Section 6.15.D of this Regulation and upon approval by the Authority and within 60 days after the EPA makes the findings in Section 6.15.G of this Regulation, the applicable governmental entity shall implement the plan.

3. The Authority will not approve an Emission Reduction and Control Plan or an Emission Reduction Contingency Plan unless the Authority finds that the plans will achieve the total emission reductions required by the implementation plan. If the Authority finds that a plan will not achieve the required reductions, then the applicable governmental entity shall revise the plan to achieve the required reductions and resubmit the plan for review by the Authority.

G. Findings by EPA. In the event the EPA determines that the Spokane PM10 Nonattainment Area has failed to make Reasonable Further Progress or has failed to timely attain a National Ambient Air Quality Standard for PM10 or has violated a National Ambient Air Quality Standard for PM10 after redesignation as an attainment area, and emissions from unpaved roads are determined by the EPA, in consultation with Ecology and the Authority, to be a contributing factor to such failure or violation, the applicable governmental entities shall comply with the requirements of Section 6.15.F.2 of this Regulation.

H. Reporting. Within 6 months after the effective date of Section 6.15 of this Regulation, and annually thereafter as determined by the Authority, each applicable governmental entity shall submit a written report to the Authority which demonstrates compliance with the Emission Reduction and Control Plans and the Emission Reduction Contingency Plans.

I. Failure to comply. Failure to comply with Section 6.15 of this Regulation will subject affected entities to penalties as provided in Article II of this Regulation.

SECTION 6.16 MOTOR FUEL SPECIFICATIONS FOR OXYGENATED GASOLINE (Repealed 9/1/05, Res. 05-19)

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