



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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C.L. "Butch" Otter, Governor
John H. Tippetts, Director

September 29, 2017

Michelle Pirzadeh
Acting Regional Administrator
USEPA, Region 10
1200 Sixth Avenue, MS RA-140
Seattle, WA 98101

RE: PM₁₀ Limited Maintenance Plan and Request for Redesignation of the Pinehurst PM₁₀
Nonattainment Area and Pinehurst Expansion PM₁₀ Nonattainment Area in Idaho

Dear Ms. Pirzadeh:

On behalf of the State of Idaho, the Department of Environmental Quality (DEQ) hereby submits this PM₁₀ Limited Maintenance Plan (LMP) and Redesignation request pursuant to Section 110(l) of the Clean Air Act.

The enclosed LMP summarizes air quality data which demonstrates that the Pinehurst PM₁₀ Nonattainment Area and Pinehurst Expansion PM₁₀ Nonattainment Area have attained compliance with the NAAQS and includes all required provisions to ensure continued attainment for ten years after the redesignation.

A public comment period was held July 5, 2017 through August 11, 2017, as required by 40 CFR 51.102. A public hearing was also held on August 11, 2017 which only one member of the public attended. Several written comments were received on this LMP and the response to comments is included in Appendix E. Complete documentation of the public comment process is also contained in Appendix E.

The enclosed LMP is unchanged from the draft provided for public comment and will be submitted electronically via eSIP. If you or your staff have questions concerning Idaho's submittal, please contact Tiffany Floyd, Air Division Administrator, at (208) 373-0552. For any questions of legal nature, please contact Lisa Carlson, Deputy Attorney General at (208) 373-0494.

Sincerely,

A handwritten signature in blue ink that reads "John H. Tippetts".

John H. Tippetts
Director

Electronic attachment (1)

PM₁₀ Limited Maintenance Plan and Request for Redesignation of the Pinehurst PM₁₀ Nonattainment Area and Pinehurst Expansion PM₁₀ Nonattainment Area in Idaho



**State of Idaho
Department of Environmental Quality
Air Quality Division
1410 North Hilton
Boise, Idaho 83706**

September 2017



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1 Introduction

This document is the State of Idaho’s request to redesignate the Pinehurst PM₁₀ (particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers) nonattainment area (NAA) and Pinehurst expansion PM₁₀ nonattainment area as attainment. With this request, the Idaho Department of Environmental Quality (DEQ) is required to submit the following:

- Air quality data demonstrating that the NAA has attained the 24-hour PM₁₀ National Ambient Air Quality Standard (NAAQS)
- A maintenance plan containing those measures necessary to maintain compliance with the NAAQS for at least 10 years after redesignating to attainment

On August 9, 2001, the United States Environmental Protection Agency (EPA) issued guidance on streamlined maintenance plan provisions for certain moderate PM₁₀ NAAs seeking redesignation to attainment. The memorandum, *Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas* (EPA 2001; hereafter, the Wegman Memo), is provided in Appendix A. DEQ determined that the Pinehurst NAA qualifies for the Limited Maintenance Plan (LMP) option. The Pinehurst PM₁₀ LMP demonstration is included in section 3.

1.1 Background

EPA promulgated a NAAQS for PM₁₀ on July 1, 1987. The Clean Air Act (CAA) requires EPA to assess the latest scientific information and review the particulate matter NAAQS every 5 years (Table 1). During the 2006 review period, EPA revised the 1997 standards by retaining the existing 24-hour PM₁₀ standard and revoking the annual PM₁₀ standard (effective December 17, 2006). Currently, the 24-hour PM₁₀ standard is 150 micrograms per cubic meter (µ/m³), and consequently, this LMP only addresses EPA’s 24-hour PM₁₀ standard.

Table 1. History of EPA’s PM₁₀ NAAQS.

Date	EPA Action
1971	Established Total Suspended Particles Standard (45 microns or less)
1987	Established 24-hour and Annual PM ₁₀ Standards
1997	Revised 24-hour PM ₁₀ Standard
2006	Revoked Annual PM ₁₀ Standard

Particulate matter represents a broad class of chemically and physically diverse substances that exist as discrete particles (liquid droplets or solids) over a wide range of sizes. Particles with a diameter less than or equal to 10 microns are referred to as PM₁₀. These particles and droplets are produced as a direct result of human activity and natural processes, and they are also formed as secondary particles from the atmospheric transformation of emissions of sulfur oxides, nitrogen oxides, ammonia, and volatile organic compounds.

PM₁₀ is considered a threat to human health due to the body’s inability to effectively filter particles of this size. These particles enter through the nose and mouth and can penetrate deep into the lungs. The key health effects categories associated with particulate matter include

premature mortality, aggravation of respiratory and cardiovascular disease, changes in lung function and increased respiratory symptoms, changes to lung tissues and structure, and altered respiratory defense mechanisms. Even periodic exposure to high levels of PM₁₀ can lead to increased incidence of coughing and symptoms of upper respiratory problems. Due to these negative effects, the NAAQS limited PM₁₀ concentrations to no more than 150 µg/m³ averaged over a 24-hour period or 50 µg/m³ averaged over a calendar year.

The Pinehurst area in Shoshone County was officially designated nonattainment for PM₁₀ by operation of law on November 15, 1990, upon enactment of the Clean Air Act Amendments of 1990. On March 15, 1991, EPA announced designations and classifications for initial PM₁₀ nonattainment areas, including the Pinehurst area in Shoshone County ID. This action required that states submit a State Implementation Plan (SIP) to EPA by November 15, 1991 and that these SIPs provide for attainment of the standard no later than December 31, 1994 (56 FR 11101). In addition, effective January 20, 1994, EPA designated nonattainment for PM₁₀ an area in Shoshone County just outside the City of Pinehurst (58 FR 67334) known as the Pinehurst expansion PM₁₀ nonattainment area.

DEQ submitted the final plan revision on April 14, 1992. This SIP revision applied to both the City of Pinehurst and the area in Shoshone County just outside the City of Pinehurst (Pinehurst expansion area). On August 25, 1994 EPA conditionally approved the portion of the plan applicable to the City of Pinehurst (59 FR 43745) and on May 26, 1995 EPA conditionally approved the portion of the plan applicable to the area in Shoshone County just outside the City of Pinehurst (60 FR 27891). In both of these actions, EPA found that the State of Idaho had failed to meet the November 15, 1993 statutory deadline to submit the required contingency measures. DEQ submitted a Contingency Plan dated July 13, 1995 for the Pinehurst NAA that EPA approved on October 2, 2014 (79 FR 59435).

Due to actions taken according to the Pinehurst NAA SIP, levels of PM₁₀ in Pinehurst have markedly improved. On August 23, 2001, EPA determined that the Pinehurst area and Pinehurst expansion area (together referred to as the Pinehurst NAA in this document) attained the NAAQS for PM₁₀ (66 FR 44304). The two areas are covered by a single air quality monitor that has been determined to represent air quality in both NAAs. PM₁₀ monitoring demonstrated that the Pinehurst NAA met the 24-hour standard by their respective attainment dates of December 31, 1994 and December 31, 2000. These improvements have been generally sustained for 16 years.

1.2 Roles and Responsibilities

Shoshone County, the city and community of Pinehurst, and DEQ have made strides in implementing control strategies and improving air quality. Cooperation among these organizations has resulted in marked improvement in air quality and maintained compliance with the NAAQS. Continued cooperation will help ensure future success.

DEQ has primary responsibility to ensure air pollution sources in Idaho do not cause or significantly contribute to any NAAQS violations. Through the Idaho Environmental Protection and Health Act, Idaho Code §39-101 et seq, and the “*Rules for the Control of Air Pollution in Idaho*” (IDAPA 58.01.01), DEQ has the authority to promulgate rules, issue permits, adopt SIPs, and to enforce such rules, permits, and plans.

1.3 Nonattainment Area Description

The Pinehurst PM₁₀ NAA is located in northern Idaho within Shoshone County and includes the city of Pinehurst, and a small area of Shoshone County adjacent to the city. The NAA lies in a nearly close-ended, north-south mountain valley located on Pine Creek, a minor tributary of the Coeur d'Alene River. The Pine Creek valley widens into Pinehurst and constricts again before it connects with the broader east-west oriented Silver Valley through a narrow 1/4-mile wide opening. Pinehurst is situated in a bowl, at 2,250 feet above sea level, surrounded by mountain ranges with varying heights of approximately 3,000 to 7,000 feet.

Due to its blocking terrain in a north-south configuration, the Pine Creek valley is subject to cold air pooling during wintertime inversions, especially when a snow-covered floor exists. Extremely stable air during winter inversion episodes results in day-to-day buildup of pollutants. While the synoptic winds typically approach the area from the south and west, and the main Silver Valley exhibits east-west valley flows, drainage winds from Pine Creek generally follow a south-southwesterly flow through the center of Pinehurst.

Figure 1 depicts the exterior boundaries of the Pinehurst NAA. The legal description of the Pinehurst NAA is southeast quarter of section 31 range 2 east, Township 49 north, south quarter of Section 32, Range 2 east, Township 49 North, Section 5 of Range 2 east, Township 48 north, east half of section 6 of Range 2 east, Township 48 north, west quarter of Section 8 of Range 2 east, Township 48 north.

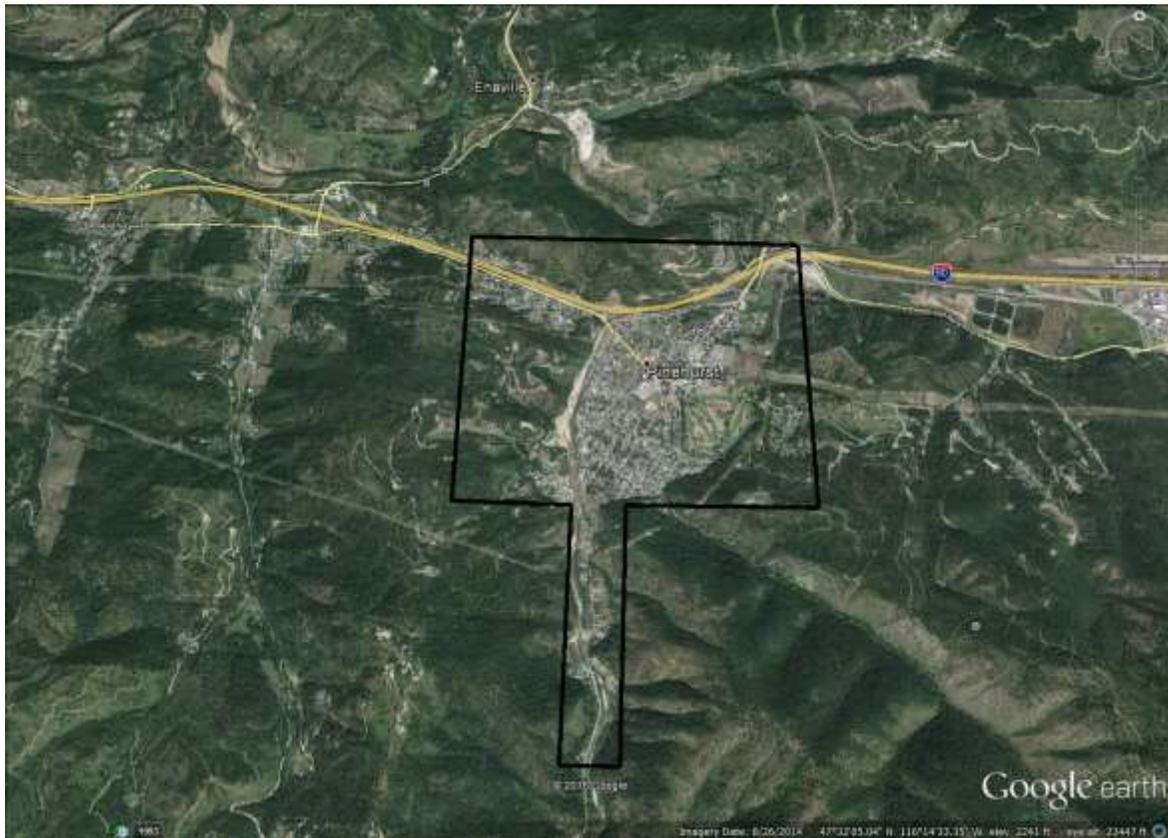


Figure 1. Map of the Pinehurst nonattainment area.

1.4 Assurance of Adequate Authority, Personnel, and Funding

As required by Section 110 of the CAA, the State of Idaho has adequate funding, personnel, and authority to enforce the emissions limitations and control measures listed in the SIP and certifies that these controls are in compliance with state and federal law. Idaho is current on all its infrastructure SIP requirements. Idaho submitted its most recent certification of State Implementation Plan Adequacy to EPA on December 24, 2015 and is awaiting EPA action. The 1997 and 2006 PM_{2.5} infrastructure SIP requirements were approved on July 14, 2014 in 79 FR 40662.

2 Air Quality

The basis for determining the air quality of any area is collecting accurate and representative monitoring data to provide the following:

- Establish air quality trends.
- Determine if and when air quality standards are exceeded.
- Inform the public about real-time air quality conditions.
- Aid in developing appropriate air quality control strategies to avoid excessive pollutant buildup and avoid exceeding the standards.

Data from the Pinehurst monitoring network is also used to support a voluntary wood burning curtailment program. Although not backed by an ordinance, this voluntary program started following a resolution adopted by the Pinehurst City Council on November 11, 1991. Resolution No. 68 requests individuals to refrain from burning during times when poor air quality is forecasted.

Local meteorology plays a critical role on the impact that regional and airshed emissions activity has on the area's air quality. High quality meteorological data are extremely important in conducting modeling studies and interpreting the results. DEQ operates a 10-meter meteorological station collocated with the PM monitor. Instrumentation is operated according to the *Quality Assurance Handbook for Air Pollution Measurement Systems Volume IV: Meteorological Measurements Version 2.0* (DEQ 2008) and Idaho's established meteorological station Standard Operating Procedures and Quality Assurance Plan.

2.1 Monitoring Sites and Equipment

Idaho has monitored PM₁₀ in the Pinehurst area since 1985. The monitor is located centrally in town and is designated a neighborhood scale site. This location and scale of representation is appropriate for a population exposure monitor (Appendix D of 40 CFR 58). The Pinehurst monitor measures PM_{2.5} for NAAQS compliance, PM₁₀ (AQS ID 16-079-0017-81102-3) for SIP and NAAQS compliance, and Air Quality Index (AQI) forecasting, modeling, and meteorological support. It is collocated with a meteorological monitor. Land use in the neighborhood is developed in town and along the interstate corridor, and the farther surroundings are mountains covered in stands of ponderosa pine. Population is concentrated within the city limits and is otherwise sparse.

2.1.1 PM₁₀ Monitoring

The Pinehurst school monitoring site is located in the center of town, adjacent to the Pinehurst Elementary School. Monitoring for particulate matter was initiated in 1986 to assess the impacts from residential wood combustion (RWC) and fugitive dust. PM₁₀ monitoring was initially conducted with a PM₁₀ Hi-vol monitor, which is a federal reference method (FRM). NAAQS compliance monitoring can be conducted with both FRM monitors and federal equivalent monitors (FEMs). In 1998 DEQ added an FEM PM₁₀ monitor, the continuous tapered element oscillating microbalance (TEOM) monitor, to publish daily AQI values for the West Silver Valley's airshed. The TEOM operates continuously and can produce average concentration data hourly. The near real-time data allows DEQ to manage its AQI and air quality forecasting programs. In 2001 DEQ designated the TEOM as the primary reporting PM₁₀ monitor for the Pinehurst site, and in 2002, DEQ discontinued use of the PM₁₀ Hi-vol monitor. The TEOM continues to be DEQ's primary reporting FRM PM₁₀ monitor. In all cases, either through the Annual Ambient Air Monitoring Network Plan process or by formal communication to EPA, determining any monitoring site and selecting primary reporting monitors require EPA approval prior to implementation and reporting of any data.

2.2 Historical Air Quality Data

The 24-hour NAAQS for PM₁₀ is in a statistical format of expected exceedances over a 3-year period. To comply with the NAAQS, it is not to be exceeded more than once per year on average over a 3-year period. The expected number of exceedances over a 3-year period must be less than or equal to one (1.0). Sampling may not occur every day, so the number of days with measured values above the standard must be adjusted to account for days that were not sampled.

PM₁₀ monitoring data for 1986–2015 is summarized in Table 2, including the 3-year average expected number of exceedances.

Monitoring data for 1986–2015 can be accessed through EPA's AirData website <https://www.epa.gov/outdoor-air-quality-data>.

Table 2. Summary of PM₁₀ monitoring data for 1986–2015.

Year	Maximum 24-Hour Concentration (µg/m ³)	Date	Number of 24-Hour Measurements >150 µg/m ³	Annual Expected Number of 24-hour Exceedances	3-year Average of Expected Exceedances
1986	372	14-Jan	4	24	NA
1987	189	19-Dec	6	38.45	NA
1988	183	28-Jan	2	8	23.5
1989	306 ^a /131	25-Sep/ 20-Jan	0	0	4
1990	142	28-Feb	0	0	2.7
1991	439 ^b /159	21-Oct/10-Jan	2	4.3	1.4
1992	113	6-Feb	0	0	1.4
1993	149	12-Mar	0	0	1.4
1994	112	1-Feb	0	0	0
1995	115	8-Feb	0	0	0
1996	107	11-Feb	0	0	0
1997	110	16-Jan	0	0	0
1998	177	19-Feb	1	3	1
1999	278 ^a /80	25-Sep/ 23-Sep	0	0	1
2000	71	4-Apr	0	0	1
2001	63	1-Mar	0	0	0
2002	78	1-Sep	0	0	0
2003	87	28-Oct	0	0	0
2004	78	2-Aug	0	0	0
2005	94	18-Jan	0	0	0
2006	52	29-Aug	0	0	0
2007	84	16-Sep	0	0	0
2008	85	18-Aug	0	0	0
2009	55	26-Sep	0	0	0
2010	156	26-Aug	1	1.01	0.34
2011	39	8-Dec	0	0	0.34
2012	62	15-Sep	0	0	0.34
2013	156 ^a /83	15-Sep/ 16-Sep	0	0	0
2014	53	19-Jul	0	0	0
2015	318 ^b	29-Aug	2	2	0.67

a. EPA-concurred exceptional event

b. Flagged exceptional event

2.3 Monitoring Data Trends

Annual design concentrations of PM₁₀ have generally followed a downward trend. Since 2001, there have been three exceedances of the 24-hour PM₁₀ standard. All three of these instances (corresponding to the peaks in Figure 2) resulted from high wind dust storm events. The 2013 dust storm event however is not shown on Figure 2 as it was removed from the dataset as an exceptional event following EPA concurrence on March 2, 2017. Figure 2 shows the maximum PM₁₀ 24-hour concentration versus population for 1986–2015. The chart includes years prior to the start of monitoring because 1980 was a census year.

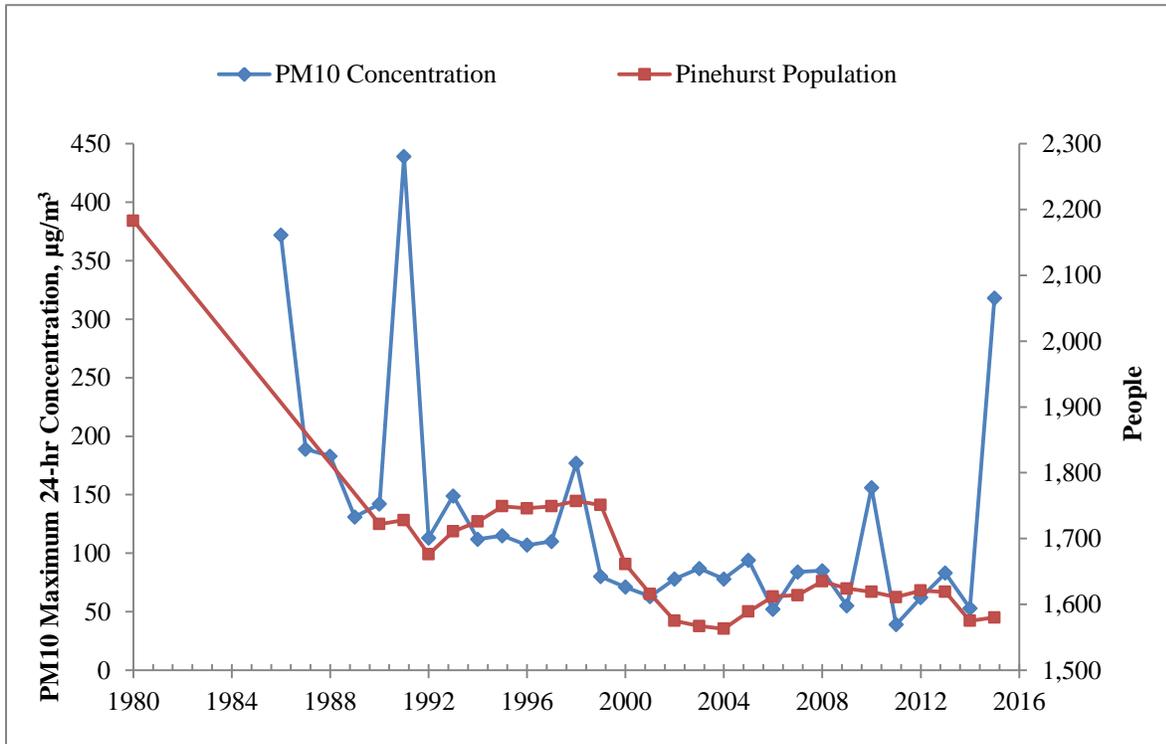


Figure 2. Maximum 24-hour PM₁₀ concentration versus population growth (1986–2015).

Despite the ongoing PM_{2.5} fine particulate problems in Pinehurst, DEQ concluded, based on the data presented above, that the SIP control strategy has been effective. Population growth is also projected to be at or near zero over the next five years for the West Silver Valley and will not interfere with continued maintenance of the 24-hour PM₁₀ in the Pinehurst NAA.

The population data used in this analysis was obtained from the Idaho Department of Labor US Census website: <http://lmi.idaho.gov/census>.

3 Limited Maintenance Plan Demonstration

The CAA Section 107 (d) (3) (E) stipulates that for an area to be redesignated, EPA must fully approve a maintenance plan which meets the requirements of Section 175A. Maintenance plans for moderate nonattainment areas typically contains stricter demonstration requirements. However, for areas that meet the NAAQS, have a 5-year design value below 98 µg/m³ and meet

the mobile source emissions growth test, the maintenance demonstration is considered met. The State may then submit a limited maintenance plan (LMP) at the time it is requesting designation that is more streamlined than would ordinarily be permitted. EPA (2001) contains a statistical demonstration that areas meeting certain air quality criteria have a high likelihood of maintaining compliance with the NAAQS 10 years into the future (Appendix A). Areas qualifying for the LMP option are not required to develop future year emissions inventories or to perform certain analyses to determine transportation conformity. Rather, the LMP should contain the following:

- “An emissions inventory which can be used to demonstrate attainment of the NAAQS.” See section 3.2.
- Assurance of “continued operation of an appropriate, EPA-approved air quality monitoring network.” See section 3.3.
- Assurance that “all controls that were relied on to demonstrate attainment will remain in place.” See section 3.4.
- “Contingency provisions, as necessary, to promptly correct any violation of the NAAQS which may occur after redesignation of the area to attainment.” See section 3.5.

3.1 LMP Qualification Criteria

To qualify for the LMP option, Pinehurst attained the PM₁₀ NAAQS as previously noted. In addition, EPA (2001) states: “the average annual PM₁₀ design value for the area, based upon the most recent 5 years of air quality data at all monitors in the area, should be at or below 40 µg/m³ and the 24-hour design value should be at or below 98 µg/m³,” and Pinehurst also “should expect only limited growth in on-road motor vehicle PM₁₀ emissions (including fugitive dust) and should have passed a motor vehicle regional emissions analysis test”.

5-year Design Value — Table 2 lists the maximum 24-hour concentration of PM₁₀ for the Pinehurst area between 1986 and 2015. Monitoring shows that the Pinehurst NAA last violated the 24-hour PM₁₀ standard in 1998. On August 23, 2001, EPA determined that the Pinehurst area and the Pinehurst expansion area attained the NAAQS for PM₁₀ (66 FR 44304). EPA determined that Pinehurst first met the NAAQS in 1994 using air quality monitoring data from 1992 to 1994. The Pinehurst expansion area attained the PM₁₀ NAAQS in 2000 from the three most recent complete years of air quality data (1998–2000).

On September 15, 2013 and August 29, 2015, two high wind dust storm events caused high PM₁₀ values measured at the Pinehurst monitor to exceed 150 µg/m³. On September 30, 2016, DEQ submitted an exceptional event demonstration and received concurrence from EPA on March 2, 2017 that the 2013 concentration was the result of an exceptional event and that the State of Idaho met the criteria for exclusion from the data used to determine compliance with the NAAQS. DEQ did not submit an exceptional event demonstration to address the August 29, 2015 exceedance because it had no regulatory impact on meeting the LMP data eligibility.

DEQ used the table look-up approach of the 1987 PM₁₀ SIP development guidelines to select the appropriate PM₁₀ 24-hour design concentrations to determine whether the Pinehurst NAA meets the 98 µg/m³ design value criterion to qualify for the LMP. Based on Table 3 and 1768 valid sample days, the sixth highest value of the empirical frequency distribution, corresponding to a frequency of 1/365, was selected for years 2011-15 and is summarized in Table 3.

Table 3. Tabular estimation of PM₁₀ design values.

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
1391–1738	Fifth highest value
1739–2086	Sixth highest value

The 5-year average design values in Table 4, as calculated according to the 1987 PM₁₀ SIP development guidelines, show that PM₁₀ concentrations have been below the default LMP criterion of 98 µg/m³ since EPA determined on August 23, 2001, that the Pinehurst area and the Pinehurst expansion area attained the NAAQS for PM₁₀ (66 FR 44304).

Table 4. Summary of 5-year design values since attainment determination.

5-Year Period	Number of Values	5-year Design Value Table Look-Up (µg/m ³)	Look-up Value Used
2011–2015	1768	83	Sixth highest value
2006–2010	1716	80	Fifth highest value
2001–2005	1681	78	Fifth highest value

Additionally, as shown in Table 5, there have been 2 exceedances but no PM₁₀ NAAQS violations at the monitor over the last 5 years at this site. The 2013 dust storm event was considered an exceptional event and excluded from the dataset after EPA concurrence. But even if the 2013 dust storm event was included the site would still show attainment of the PM₁₀ NAAQS where the 2013-15 expected number of exceedances would be exactly 1.0. However, the exceptional events did affect the area’s ability to meet the 5 year 98 µg/m³ design value needed to qualify for a Limited Maintenance Plan.

Table 5. Summary of most recent 5-year monitoring data summary.

Year	Exceptional Event	First Max	Second Max	Actual Exceedances	Estimated Exceedances	3-Year Average of Exceedances
2011	None	39	37	0	0	—
2012	None	62	56	0	0	—
2013	Excluded	83	50	0	0	0 (2011-13)
2014	None	53	52	0	0	0 (2012-14)
2015	Included	318	194	2	2	0.66 (2013-15)

According to EPA (2001), the LMP submission for Pinehurst should contain the following:

- “An emissions inventory which can be used to demonstrate attainment of the NAAQS.” See section 3.2.
- Assurance of “continued operation of an appropriate, EPA-approved air quality monitoring network.” See section 3.3.
- Assurance that “all controls that were relied on to demonstrate attainment will remain in place.” See section 3.4.
- “Contingency provisions, as necessary, to promptly correct any violation of the NAAQS which may occur after redesignation of the area to attainment.” See section 3.5.

EPA (2001) states “the maintenance demonstration requirement of the CAA will be considered to be satisfied if the area meets the air quality criteria.” This includes attaining the PM₁₀ standard, having a 5-year DV below 98 µg/m³, and passing the motor vehicles emissions growth test. This means, for the Pinehurst NAA, Idaho is not required to project emissions over the maintenance period.

Mobile Source Emissions—A motor vehicle regional analysis was performed to demonstrate that increased emissions from on-road mobile sources, in the next 10 years, would not increase particulate matter concentrations in the Pinehurst PM₁₀ NAA to levels that would threaten the assumption of maintenance that underlies the LMP policy. The following equation from Attachment B of EPA (2001) was used for this analysis:

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

Where:

DV = the area’s design value based on the most recent five years of quality assured data in µg/m³

VMT_{pi} = the projected % increase in vehicle miles traveled (VMT) over the next ten years

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

MOS = margin of safety for the relevant PM₁₀ standard for a given area: 40µg/m³ for the annual standard or 98µg/m³ for the 24-hour standard.

- The 24-hour DV for Pinehurst for the years 2011 through 2015 is 83µg/m³ (Table 4 of Section 3.1).
- Census data indicates decreasing population in Shoshone County, where the PM₁₀ NAA is located. However, the traffic counter in Shoshone County on Interstate I-90 showed a slight increase (annual average growth rate 1.66%) of interstate vehicle traffic. To be conservative, DEQ assumed interstate VMT (VMT paved) increases at the historical 1.66% annual growth rate and other roadway VMT stays the same as the base year because human population is trending down. VMT on unpaved roads (VMT unpaved) within the PM₁₀ NAA are not expected to increase and were given a value of 0%.
- The motor vehicle design value (DV_{mv}) based on on-road mobile portion of the attainment inventory (Table 6) was calculated by splitting total on-road emissions into its different component (paved and unpaved road dust and on-road mobile emissions) as follows:
 - DV_{paved} = DV*(Paved road dust/Total all sources)
 - DV_{unpaved} = DV*(Unpaved road dust/Total all sources)
 - DV_{mobile} = DV*(on-road mobile/Total all sources)

Table 6. Mobile source contribution to design value.

Category	Tons/year		Contribution to Design Value ($\mu\text{g}/\text{m}^3$)
Road Dust, Paved	4.1	DVpaved	8.1353
Road Dust, Unpaved	4.93	DVunpaved	9.7822
Vehicle Exhaust and Tire Wear	1.84	DVmobile	3.6509
Total , all sources	41.83	DVmv	21.5684

- The result of the motor vehicle regional analysis test is as follows:

$$DV + (\text{VMT paved} * DV_{\text{paved}}) + (\text{VMT unpaved} * DV_{\text{unpaved}}) + (\text{VMT paved} * DV_{\text{mobile}}) = 83 + (0.0166 * 8.1353) + (0 * 9.7822) + (0.0166 * 3.6509) = 83.19 \mu\text{g}/\text{m}^3$$

- The motor vehicle design value based on on-road mobile portion of the attainment year inventory is less than $98 \mu\text{g}/\text{m}^3$; therefore the PM_{10} NAA passes the test.
- Using the 1.66% increase in all non-road mobile emission, the calculation becomes:

$$DV + (\text{VMT}_{\text{paved}} \times DV_{\text{mv}}) = 83 + (0.0166 * 21.5684) = 83.36 \mu\text{g}/\text{m}^3$$

- The PM_{10} NAA qualifies for the LMP option with either calculation.

3.2 Attainment Year Emissions Inventory

Once an area has qualified for the LMP option, Idaho is required to submit an emissions inventory (EI) that represents emissions during a 5-year period associated with air quality data demonstrating attainment of the PM_{10} NAAQS.

3.2.1 Emissions Inventory Process

According to Air Emissions Reporting Requirements (40 CFR 51), Idaho compiled a calendar-year 2014 statewide, county-level periodic emission inventory (PEI) for use in the National Emissions Inventory. DEQ determined that using 2013 as the base year in the PM_{10} LMP inventory would represent one of the most recent 5 years of clean data being used to demonstrate attainment (i.e., no violations of the PM_{10} NAAQS). The 2014 PEI provided the most recent and robust data for the Pinehurst NAA and was the starting point for developing the 2013 base year EI. The large majority of the actual activity data for the 2014 PEI came from 2013 data since 2014 data was not available for most sources when the PEI was done. Where actual 2014 data might have been used, it was compared to 2013 and used where differences were insignificant.

Sources of PM_{10} in the Pinehurst NAA include on-road mobile sources (e.g., car and truck exhaust and road dust), nonroad mobile sources (e.g., construction equipment), nonpoint sources (e.g., misc. residential sources, residential woodstoves, open burning, and small industrial, commercial, and institutional sources including fuel combustion) and point sources (e.g., industrial point sources). No major point sources exist in Pinehurst. According to the LMP requirements option, no emissions projections were planned or calculated.

Estimated emissions from each source category (e.g., woodstoves and fugitive road dust) were calculated using source activity data and established emissions factors. For example, to calculate emissions from RWC, DEQ used the following:

- Data from a recent woodstove and open burning survey administered in the West Silver Valley PM_{2.5} NAA to estimate the number of households burning wood, the type of burning device, and the amount and species of wood burned
- Emissions factors from EPA's Microsoft Access RWC tool v2.1
- December temporal files to estimate typical winter day emissions

This information allowed DEQ to estimate the wintertime daily and annual emissions rates of PM₁₀ due to RWC. The EI process and estimation methods are provided in Appendix B.

3.2.2 Emissions Inventory Results and Adequacy Demonstration

The EI completed for the 1992 Pinehurst Attainment Demonstration SIP used 1988 as the base year. As discussed in section 3.2.1, an EI was completed for the LMP using 2013 as the base year.

Table 6 list the annual and typical winter day inventory results for the two base years. The typical winter day information is important in Pinehurst because the 1992 implementation plan identified the winter season as the critical time when a majority of the exceedances of the 24-hour PM₁₀ standard were recorded. The larger nonpoint sources have been broken out into their own categories for comparison (residential categories, construction, open burning, industrial combustion, etc.).

Table 7. Annual emissions rates by activity, tons per year.

Source Category	PM ₁₀ Emissions (TPY)	
2013		
Residential wood combustion	17.75	
Construction—road	7.01	
Total on-road	6.05	
	Paved road dust:	4.21
	Vehicle emissions:	1.84
Residential open burning	1.95	
Unpaved road dust	4.70	
Nonroad	0.79	
Residential outdoor recreational burning	0.72	
Commercial cooking	0.47	
Charcoal grilling	0.13	
Construction—Commercial/residential	0.11	
Commercial combustion	0.09	
Vehicle and structure fires	0.04	
Industrial combustion	0.03	
Residential heating (no RWC)	0.02	
Total all sources	39.87	
1988		
Residential wood combustion	17.9	
Total fugitive road dust	17.0	
	Paved road:	13.71
	Unpaved road:	3.28
Construction—building	7.86	
Vehicle emissions	0.81	
Residential heating	0.41	
Open burning	0.15	
Total all sources	44.1	

Table 8. Winter day PM₁₀ emissions daily, pounds per day.

Source Category	PM ₁₀ Emissions (lb/day)	
2013		
Residential wood combustion	212.05	
On-road	36.47	
	Paved road dust:	25.38
	Vehicle emissions:	11.09
Residential open burning	2.09	
Nonroad	1.47	
Residential outdoor recreational burning	1.55	
Commercial cooking	2.51	
Charcoal grilling	0.43	
Construction—Commercial/residential	0.04	
Commercial combustion	0.73	

Vehicle and structure fires	0.23
Industrial combustion	0.18
Residential heating (no RWC)	0.29
Total all sources	258.05
1988	
Residential wood combustion	292.3
Fugitive road dust	187.5
Residential heating	6.2
Vehicle emissions	4.5
Other	2.2
Total all sources	492.7

The 2013 Pinehurst PM₁₀ LMP EI was compared to the 1988 EI. There was an overall decrease of 4.23 TPY, from 44.10TPY in 1988 to 39.87 TPY in 2013. The winter day emissions reduction was 234.65 lb/day, from 492.70 lb/day in 1988 to 258.05 lb/day in 2013. RWC and fugitive dust remained the two largest contributors to PM₁₀ emissions in the more recent inventory.

Notable differences exist in the inventories that affect the comparison: (1) differences in sources inventoried, or groupings of sources; (2) differences in sources of activity data; and (3) the methods of calculating source data were different in places. To compare the two inventories, sources the inventories had in common were examined. The following discrepancies in EI methods should be noted when considering the information in Table 7 and Table 8:

Residential Wood Combustion—The 2013 EI shows a slight decrease of 0.15 TPY in yearly PM₁₀ emissions compared to a reduction of 80.25 pounds (lb) of PM₁₀ emissions per typical winter day from this source category. While RWC emissions from both inventories were based on similar phone surveys and demographics data, updated emissions factors and different methodologies were used.

The most recent survey shows that the number of households burning wood to heat their homes remained more or less constant (462 vs. 424 in 1988). However, a larger percentage (18.6%) of wood burning stoves currently used is EPA-certified compared to 1988 (5.7%). This change in RWC emissions is supported by the different DEQ woodstove change-out program incentives focused on in the Pinehurst PM₁₀ NAA and the wood burning curtailment program in place since 1991.

Mobile Sources and Road Dust—The 2013 emissions for the NAA were calculated by county using the latest approved EPA on-road model, Mobile Vehicle Emissions Simulator or MOVES2014a. The Shoshone County data were assigned to the NAA based on the NAA fraction of freeway, other roadways, and idling/parking emissions as compared to Shoshone County. Road dust and tailpipe emissions of PM₁₀ from motor vehicles were calculated by applying emission factors from the EPA MOVES2014a computer program to total vehicle miles traveled in the nonattainment area. Estimated vehicle miles traveled are from the Idaho Department of Transportation’s travel demand model. Refer to Appendix B “Emission Inventory” for additional information.

The original SIP combined source categories differently: vehicle emissions (consisting of tailpipe, brake and tire wear emissions) were a distinct category while fugitive road dust included

PM₁₀ emissions from both paved and unpaved roads. In 2013, with changes in emission inventory reporting, fugitive road dust only include emissions from unpaved roads. Paved road dust and emissions from vehicular traffic are reported under the on-road category. Emissions factors and methodologies also differed between the two EIs.

The 1988 EI allocated 17 TPY of PM₁₀ emissions to fugitive road dust; the more recent inventory shows a total of 8.91 TPY from paved and unpaved roads, or a 47.56% decrease in PM₁₀ emissions. This reduction is even larger when considering typical winter day emissions (25.38 versus 187.5 lb/day or an 86.46% decrease).

Both EIs assumed that unpaved roads were not sanded or cleaned during the winter season. Unpaved roads remained snow covered during wintertime, and dust was negligible due to moist conditions. The 1988 EI attributed high levels of fugitive road dust to sanding materials applied to paved roads during wintertime. Emissions reduction from this source category could be partly attributed to the dust control strategies implemented in the Pinehurst NAA. Since the original SIP, the City of Pinehurst Public Works Department has adopted measures to reduce particulate matter emissions from winter sanding of road surfaces by increasing the frequency of street sweeping. A significant effort was made by Pinehurst and the cities in the West Silver Valley to conduct road rehabilitation and paving, which reduced the miles of deteriorating roads in the community.

Construction Dust—The 2013 inventory included emissions from road construction mainly; fugitive emissions from commercial and residential building construction were negligible. The opposite was true in the 1988 inventory, which included emissions from commercial and residential building construction only. The large difference in building construction is due to the lack of new construction in 2013 in the NAA. Only one home building permit was issued in 2013, and no commercial or other building permits were issued. The rise in road construction results from rebuilding roads in the NAA beginning in 2013.

Open Burning—The open burning emissions increased from 1988 to 2013. No wildfires or prescribed burning occurred in the NAA as was the case in the original SIP data. The LMP split the open burning into residential open burning (e.g., brush, grass, and weeds) and residential recreational burning. These two combined are slightly more than originally calculated.

3.2.3 Other Factors

When the 1988 base year inventory was performed, Pinehurst and the Silver Valley were in a period of economic recession. The main industries in the Silver Valley captured by the 1992 attainment plan included mines and lumber mills. None of these sources occurred within the NAA boundary, and a number of these facilities have now closed or stopped production.

In 2008 Idaho developed, and EPA approved in the Idaho SIP, the Crop Residue Burning Program. This program is designed to protect Idaho's air quality by requiring DEQ to determine daily whether the air quality and dispersion characteristics are sufficient to allow crop residue burning. While agricultural burning was determined to be a negligible portion of the Pinehurst EI, this program (and similar programs run by Washington and various tribes) has greatly reduced the overall acreage available for thermal treatment and ensures that crop residue burning in adjacent airsheds does not interfere with maintenance of the PM₁₀ NAAQS in the Pinehurst NAA.

3.2.4 Emissions Inventory Conclusion

DEQ estimated a 4.23 TPY decrease in annual PM₁₀ emissions, from 44.10 TPY in 1988 to 39.87 TPY in 2013. Calculated wintertime daily emissions rates also dropped by 234.75 lb/day, from 492.70 lb/day in 1988 to 258.05 lb/day in 2013. While the relative source contribution varied between the two EIs, the observed PM₁₀ reduction was due largely to a drop in emissions from fugitive road dust and RWC, as a result of efforts to control PM₁₀, the pollutant for which the area has been regulated. The PM₁₀ emissions reductions are largest in wintertime; the critical time when a majority of the exceedances of the 24-hour PM₁₀ standard were recorded. These calculated emissions rates, combined with monitor data, demonstrate that the control measures implemented have been effective. DEQ believes that the 2013 EI represents emissions during the 5-year period (2011–2015) associated with air quality data and demonstrates attainment of the PM₁₀ NAAQS.

3.3 Assurance of Continued Operation of the Monitoring Network

Idaho will comply with the continued air monitoring requirement of CAA Title III, Section 319. The PM₁₀ site is operated in compliance with EPA monitoring guidelines set forth in 40 CFR 58, Ambient Air Quality Surveillance and Appendices A through D of Part 58.

Each year, DEQ will analyze the three most recent consecutive years of ambient PM₁₀ monitored data to verify continued attainment of the PM₁₀ NAAQS according to 40 CFR 50. In keeping with the requirements of CAA, Title III, Section 319 (defined in 40 CFR 58.26), DEQ will continue to submit to EPA, by July 1 of each year, an annual report of PM₁₀ data collected during the previous calendar year. These data, along with the data contained in the annual reports for the previous 2 years, will provide all the necessary information to determine whether the Pinehurst area continues to comply with the PM₁₀ NAAQS.

3.4 Control Measures

RWC and road dust contributed to 80% of the PM₁₀ emissions in the 1988 base year inventory. In developing control measures for the SIP, DEQ focused on RWC, which was the largest contributor to the PM₁₀ problem in Pinehurst. DEQ demonstrated timely attainment through wood smoke control and eschewed the need for dust control measures. All control strategies that were developed and approved (59 FR 43745 and 60 FR 27891) focused on RWC. Starting in 1991, activities including a public awareness campaign, an uncertified woodstove replacement program, a home weatherization program, and adoption of a voluntary episodic wood burning curtailment program were undertaken. Since adoption, all the approved control measures have remained in place and contributed to the area reaching attainment with an overall decline in the maximum PM₁₀ 24-hour concentrations.

3.4.1 Residential Wood Combustion

DEQ implemented a woodstove change-out program aimed at replacing 90 uncertified woodstoves with natural gas furnaces, pellets stoves, and phase II woodstoves. Seventy-six of these change-outs took place by 1994. Further economic incentives, namely CAA Section 105 grant and funding for supplemental environmental projects, resulted in another 87 uncertified woodstoves replaced by cleaner heating devices between 1996 and 2015, almost doubling the

number of woodstove change-outs specified in the SIP (Table 9). The recent RWC survey administered in the West Silver Valley suggested that the total inventory of solid fuel burning devices in the Pinehurst PM₁₀ NAA is 470. Of those, 257 are uncertified woodstoves and fireplaces. DEQ’s woodstove change outs efforts have replaced over 60% of the uncertified heating devices with cleaner EPA certified units in the Pinehurst PM₁₀ NAA.

Table 9. Summary of wood stove change outs in the Pinehurst PM₁₀ NAA.

Year	Natural Gas	Wood	Pellet	Electric	Oil	Unknown
1994	45	30			1	
1996			1			
1998	1					
2000		1				
2003		1				
2006		1				
2007	7	23	2			2
2008		1				1
2009	1					
2011	1	6		1		
2012	2	7	1			
2013		7				
2014	1	18	1			
Total	58	95	5	1	1	3

3.4.2 Voluntary Woodstove Curtailment Program

In 1991, the City of Pinehurst passed a resolution (Resolution No. 68, Appendix C) addressing residential wood burning. Voluntary restrictions on wood burning are called for when high PM₁₀ concentrations are forecasted. This resolution is still in place and is triggered by an Air Quality Advisory, which is a program established by DEQ to alert the public when pollutant levels are on the rise and reducing the use of residential wood burning devices is recommended.

The existing residential wood burning advisory is calculated daily by assessing particulate concentrations and trends measured by the local nonregulatory continuous monitor located at the Pinehurst Elementary School and was expanded to include open burning activity in the mid-1990s. Overall, advisory calls are made more frequently to address poor air quality days. DEQ staff provides a daily advisory to the public. DEQ also maintains a phone number and website, and the daily advisory is placed in the local newspaper.

3.4.3 Home Weatherization

DEQ provided weatherization assistance to low income residents of the NAA who rely on wood as their main source of heat. Weatherization measures, funded through existing loan and grant programs, were applied to the households where the woodstove change-outs occurred (section 3.4.4) and to an additional 30 homes in the Pinehurst area by July 1995.

3.4.4 Public Awareness Campaign

DEQ engaged in a comprehensive public awareness campaign aimed at changing behaviors associated with burning practices. New materials were developed on wood energy education and

multimedia advertisement efforts increased communication reach. A residential heating survey was completed in 1992 to further develop appropriate outreach and communication strategies. The public awareness program provided citizens with information about stove sizing, installation, proper operation and maintenance, general health risks of wood smoke, new stove technology, and alternatives to wood heating.

3.4.5 Industrial Sources

No industrial activity occurs in the PM₁₀ NAA. However, DEQ relies on federally enforceable state control measures to address future industrial source emissions. The Permit to Construct and Tier II Operating Permit rules are part of Idaho's federally approved SIP. Regulation 40 CFR 52.681 states:

Except as otherwise provided in paragraph (b) of this section, emissions limitations and other provisions contained in Permits to Construct and Tier II Operating Permits issued by the Idaho Department of Environmental Quality in accordance with the Federally-approved State of Idaho Rules for Control of Air Pollution in Idaho, incorporated by reference in section 52.670 (IDAPA 58.01.01.200 through 222, IDAPA 58.0.01.400 through 406), shall be applicable requirements of the Federally-approved Idaho SIP (in addition to any other provisions) for the purposes of section 113 of the Clean Air Act and shall be enforceable for EPA and by any person in the same manner as other requirements of the SIP.

3.4.6 Additional Measures

The Idaho Transportation Department acquired equipment to control dust along I-90 with sweepers and application of liquid de-icer and other traction material, increased plowing and sweeping up of material. The City of Pinehurst acquired a street sweeper that is shared among the cities of the West Silver Valley to reduce road dust. Road paving was also conducted by Pinehurst and other cities in the West Silver Valley, using funding from settlements with the Hecla Mining Co. and Asarco, Inc. under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

In 2012, DEQ's Coeur d'Alene Regional Office revised their air quality advisory to implement early particulate reductions. With the updated program, woodstove curtailment levels were revised to increase the number of days when burning is restricted using PM_{2.5} levels instead of PM₁₀ levels. The burn advisory was also expanded to run year round. The trigger levels used to restrict open burning are now similar to those used to restrict crop residue burning to provide consistency between smoke management programs.

DEQ continues to incentivize uncertified woodstove change-outs in the NAA. Effective January 1, 1995, the Idaho tax code provided a tax deduction for taxpayers replacing uncertified woodstoves with new certified solid fuel burning devices or natural gas/propane units. Since then, additional woodstove change-outs have occurred in the West Silver Valley, with the bulk of the replacements taking place in Pinehurst. The EPA Targeted Airshed Grant will provide funding to continue replacing an additional 153 woodstoves in the West Silver Valley between 2017 and 2020, with the replacements also focused in the PM₁₀ NAA. Additionally, the targeted airshed grant will include a strong outreach component aimed at improving burning practices and fund various programs such as household weatherization, dry wood certification, woodshed construction, and distributing emergency fire logs to reduce reliance on green wood. Combined, these efforts will bring additional reductions in both PM₁₀ and PM_{2.5} emissions.

In 2014, as part of the PM_{2.5} West Silver Valley SIP development, DEQ convened an advisory committee who plans to continue and expand educational efforts about reducing particulate emissions from wood smoke. The Targeted Airshed Grant will also assist in educating the West Silver Valley community about proper use of woodstoves and reducing wood smoke. The grant will be funding more outreach and education programs, including brochure production, workshops, and messaging tools. The Coeur d'Alene Regional Office also spends budgeted dollars on routine outreach.

While DEQ has also undertaken efforts in Shoshone County to reduce emissions from diesel engines, additional reductions in transportation emissions will be realized in 2017 when the EPA Tier 3 vehicle standards come into effect, reducing both tailpipe and evaporative emissions from passenger cars, light-duty trucks, medium-duty passenger vehicles, and some heavy-duty vehicles. Overall, these additional measures have strengthened the existing control measures approved by the SIP and will help to ensure wood smoke and road dust emissions remain controlled.

3.5 Contingency Plan

CAA Section 175A requires that a maintenance plan include contingency provisions, as necessary, to promptly correct any violation of the NAAQS that may occur after redesignating the area to attainment. The Act provides that, at a minimum, the contingency measures must include a requirement that the State will implement all measures contained in the non-attainment SIP prior to redesignation. DEQ submitted a final contingency plan to EPA on July 13, 1995 which was approved on October 2, 2014 (79 FR 59435) and relied on overcontrol of wood burning emissions from woodstove change-outs, voluntary curtailment program, home weatherization, and a public awareness campaign. All of these measures remain in place and DEQ will strengthen their implementation if monitoring data indicates exceedances of the PM₁₀ 24-hour standard. If it is determined that additional emissions reductions are necessary, DEQ will adopt and implement appropriate contingency measures as expeditiously as possible.

3.5.1 Triggering

The triggering mechanism for contingency measure implementation will be a violation of the PM₁₀ NAAQS, as identified in the Annual Network Plan. Specifically, the 3-year average number of expected exceedances at the Pinehurst monitoring site would need to be greater than 1.0 for a violation to occur.

3.5.2 Potential Contingency Measures

If monitoring data indicate a violation of the PM₁₀ NAAQS, DEQ will examine the data to assess the spatial extent, severity, cause, and time period of the episode as well as trends over time. Based on this analysis, DEQ will determine which measures to implement. The following list of potential contingency measures can be implemented with support from the City of Pinehurst if a violation of the PM₁₀ standard occurs in the future.

- Adopt local ordinances that require covering all loads of material that may have the potential to contribute to particulate matter pollution.
- Adopt local ordinances that require no track-out onto paved roads.
- Adopt local ordinances that prohibit burning of household garbage.

- Expand the burning restrictions to include clean-burning woodstoves during air quality alerts.
- Adopt local ordinances that prohibit constructing any unpaved private roads, driveways, or parking lots.
- Develop street sweeping plan with local highway districts and the Idaho Transportation Department based on to prioritize street sweeping efforts to reduce fugitive road dust.

In addition to the potential contingency measures discussed above, DEQ may evaluate other strategies to address any future violations in the most appropriate and cost-effective manner possible. Due to continual changes in the mixture of PM₁₀ sources and evolving technologies to understand and control PM₁₀ emissions and precursors, other contingency measures may become viable in the future. DEQ will evaluate the need and viability of additional contingency measures and will consider future additions to the listed measures, if necessary.

3.6 Conformity

EPA (2001) does not exempt an area from the need to affirm 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. Per EPA (2001), a regional emissions analysis is 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 detailed in 40 CFR 93.109, such as consultation between agencies on air quality impacts of transportation projects, still apply. In addition, federal actions subject to the general conformity rule could be considered to satisfy the "budget test" specified in section 93.158 (a)(5)(i)(A) of the conformity rule.

Although the "budget test" will not be used to satisfy Conformity for "Regional Emissions," all federally funded projects must adhere to the NEPA process and assure they are not causing or contributing to violations of the NAAQS. Project level analysis must be addressed for all federal funded regionally significant non-exempt projects.

4 Request for Redesignation

NAAAs can be redesignated to attainment after the area has measured air quality data showing that it has attained compliance with NAAQS and after certain planning requirements are met. This section demonstrates that the Pinehurst PM₁₀ NAA and Pinehurst expansion PM₁₀ NAA can be redesignated to attainment.

4.1 Redesignation Criteria

CAA Section 107(d)(3)(E) and the General Preamble to Title I provide the criteria for redesignation. In the following paragraphs, each of these criteria is identified and followed with a description of how it is met.

4.1.1 Attainment of NAAQS

The Administrator of EPA determines that the area has attained the applicable NAAQS—EPA determined (66 FR 44304, August 23, 2001) that Pinehurst and the Pinehurst expansion area attained the NAAQS for PM₁₀ by the required attainment dates of December 31, 1994 and December 31, 2000. The annual PM₁₀ standard has been revoked, and as demonstrated in section 3.1, the Pinehurst Area continues to attain the 24-hour PM₁₀ standard. There have been a few high wind dust storm events causing exceedances of the NAAQS, for which DEQ has developed exceptional event demonstrations when needed.

4.1.2 Approved SIP under CAA Section 110(k)

The Administrator of EPA has fully approved the applicable SIP for the area under section 110(k) of the Clean Air Act—On August 25, 1994, EPA took final action approving the PM₁₀ SIP for the Pinehurst PM₁₀ NAA (59 FR 43745). On May 26, 1995, EPA took final action approving the PM₁₀ SIP for the Pinehurst PM₁₀ expansion area (60 FR 27891).

4.1.3 Air Quality Improvement

The air quality improvement in the area is due to permanent and enforceable reductions in emissions—The EPA-approved SIP for this area provided emissions reductions through various approved control measures discussed in section 3. The air quality monitoring data, discussed in section 2, demonstrate a long-term improvement in PM₁₀ concentrations.

4.1.4 Approved Maintenance Plan

When EPA approves this plan, the area will have a maintenance plan meeting the requirements of CAA Section 175A—A limited maintenance plan, meeting the requirements of EPA (2001) is included with this redesignation request (section 3).

4.1.5 CAA Section 110 and Part D Requirements Met

The State containing the area has met all requirements applicable to the area under section 110 and part D of the Clean Air Act—These requirements include the following:

Section 110: Idaho has met the applicable requirements of Section 110 with an EPA-approved SIP. August 12, 2016 is the most recent date EPA approved updates to Idaho's SIP.

Part D, Subpart 1, Section 172(c): Idaho has met the applicable requirements of Section 172(c) with an EPA-approved SIP for the Pinehurst and Pinehurst expansion NAA (59 FR 43745 and 60 FR 27891), a, an EPA-approved New Source Review program (November 26, 2010), a commitment to continue operation of the air quality monitoring network in Pinehurst (section 3.3), and contingency measures (79 FR 59435) (section 3.5).

Part D, Subpart 4: Idaho met the applicable requirements of Subpart 4 with an EPA-approved SIP for the Pinehurst NAA (August 25, 1994).

4.2 Conclusion and Request for Redesignation

This LMP submittal and redesignation request includes information that demonstrates the Pinehurst NAA may be redesignated to attainment. Section 2 contains air quality data that show Pinehurst has attained compliance with NAAQS. Section 3 contains provisions of the LMP for the Pinehurst NAA including EI data representing emissions during the 5-year period associated with air quality data that demonstrate attainment of the PM₁₀ NAAQS. The State of Idaho will continue to monitor PM₁₀ and PM_{2.5} concentrations in the Pinehurst area. If violations occur, this maintenance plan contains contingency provisions to ensure prompt corrective action is taken. This plan fulfills the requirements of the CAA as they pertain to SIPs and maintenance plans.

DEQ requests that EPA approve the LMP and redesignate the Pinehurst NAA to attainment for the PM₁₀ NAAQS according to CAA Section 207.

References

- EPA (United States Environmental Protection Agency). 2001. *Limited Maintenance Plan Option for Moderate PM10 Nonattainment Areas*. Memorandum from L.J. Wegman, EPA to EPA Regions. Research Triangle Park, NC: Air Quality Strategies and Standards Division.
- EPA (United States Environmental Protection Agency). 2008. *Quality Assurance Handbook for Air Pollution Measurement Systems Volume IV: Meteorological Measurements Version 2.0*. Research Triangle Park, NC: Office of Air Quality Planning and Standards.

Appendix A. Wegman Memorandum to EPA Regions

MEMORANDUM

SUBJECT: Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas

FROM: Lydia Wegman, Director
AQSSD (MD-15)

TO: Director, Office of Ecosystem Protection, Region I
Director, Division of Environmental Planning & Protection, Region II
Director, Air Protection Division, Region III
Director, Air, Pesticides & Toxics Management Division, Region IV
Director, Air and Radiation Division, Region V
Director, Air Pesticides & Toxics, Region VI
Director, Air and Toxics Division, Regions VII, IX
Director, Air Program, Region VIII
Director, Office of Air Quality, Region X

I. What is a Limited Maintenance Plan?

This memorandum sets forth new guidance¹ on maintenance plan submissions for certain moderate particulate matter (PM₁₀) nonattainment areas seeking redesignation to attainment (see section IV for further details on qualifying for the policy). If the area meets the criteria listed in this policy the State may submit a maintenance plan at the time it is requesting redesignation that is more streamlined than would ordinarily be permitted. This new option is being termed a limited maintenance plan (LMP)².

II. Why is there a need for a limited maintenance plan policy?

¹This memorandum is intended to provide EPA's preliminary views on how certain moderate PM₁₀ nonattainment areas may qualify to submit a maintenance plan that meets certain limited requirements. Since it represents only the Agency's preliminary thinking that is subject to modification, this guidance is not binding on States, Tribes, the public, or EPA. Issues concerning the applicability of the limited maintenance plan policy will be addressed in actions to redesignate moderate PM₁₀ nonattainment areas under § 107 of the CAA. It is only when EPA promulgates redesignations applying this policy that those determinations will become binding on States, Tribes, the public, and EPA as a matter of law.

²Moderate PM₁₀ areas that do not meet the applicability criteria of this policy, and all serious PM₁₀ nonattainment areas, should submit maintenance plans that meet our guidance for submission of a full maintenance plan as described in the September 4, 1992 memorandum, "Procedures for Processing Requests to Redesignate Areas to Attainment," from John Calcagni, former Director of the Office of Air Quality Planning and Standards (OAQPS) Air Quality management Division to the Regional Air Division Directors (hereafter known as the Calcagni Memo).

Before the U.S. Court of Appeals for the District of Columbia handed down its decision vacating the 1997 PM₁₀ national ambient air quality standards (NAAQS)(see American Trucking Associations, et al. v. Environmental Protection Agency (EPA), 175 F.3d 1027 (D.C. Cir. 1999), we were prepared to make case-by-case determinations that would make the 1987 PM₁₀ NAAQS no longer applicable in any area meeting the standards. In taking actions to remove the applicability of the 1987 NAAQS, we would have removed, as well, the nonattainment designation and Clean Air Act (CAA) part D requirements from qualifying areas. As a result of the D.C. Circuit's decision, for areas subject to the 1987 NAAQS, the only route to recognized attainment of the NAAQS and removal of nonattainment status and requirements is formal redesignation to attainment, including submittal of a maintenance plan. Since many areas have been meeting the PM₁₀ NAAQS for 5 years or more and have a low risk of future exceedances, we believe a policy that would allow both the States and EPA to redesignate speedily areas that are at little risk of PM₁₀ violations would be useful.

III. How did EPA develop the approach used in the LMP option?

The EPA has studied PM₁₀ air quality data information for the entire country over the past eleven years (1989-1999) and has determined that some moderate PM₁₀ nonattainment areas have had a history of low PM10 design values with very little inter-annual variation. When we looked at all the monitoring sites reporting data for those years, the data indicate that most of the average design values fall below 2 levels, 98 µg/m³ for the 24-hr PM₁₀ NAAQS and 40 µg/m³ for the annual PM₁₀ NAAQS. For most monitoring sites these levels are also below their individual site-specific critical design values (CDV). The CDV is an indicator of the likelihood of future violations of the NAAQS given the current average design value and its variability. The CDV is the highest average design value an area could have before it may experience a future exceedance of the NAAQS with a certain probability. A detailed explanation of the CDV is found in Attachment A³ to this policy which, because of its length, is a separate document accompanying this memorandum.

We believe that the very small amount of variation between the peaks and means in most of the data indicates a very stable relationship that can be reasonably expected to continue in the future absent any significant changes in emissions. The period we assessed provides a fairly long historical record and the data could therefore be expected to have been affected by a full range of meteorological conditions over the period. Therefore, the amount of emissions should be the only variable that could affect the stability in the air quality data. We believe we can reliably make estimates about the future variability of PM₁₀ concentrations across the country based on our statistical analysis of this data record, especially in areas where the amount of emissions is not expected to change.

IV. How do I qualify for the LMP option ?

³ Dr. Shao-Hang Chu's paper entitled "Critical Design Value and Its Applications" explains the CDV approach and is included in its entirety in Attachment A. This paper has been accepted for publication and presentation at the 94th Air and Waste Management Association (A&WMA) Annual Conference in June 2001 in Orlando, Florida.

To qualify for the limited maintenance plan option, an area should meet the following applicability criteria. The area should be attaining the NAAQS and the average PM_{10} design value⁴ for the area, based upon the most recent 5 years of air quality data at all monitors in the area, should be at or below $40 \mu\text{g}/\text{m}^3$ for the annual and $98 \mu\text{g}/\text{m}^3$ for the 24-hr PM_{10} NAAQS with no violations at any monitor in the nonattainment area⁵. If an area cannot meet this test it may still be able to qualify for the LMP option if the average design values of the site are less than their respective site-specific CDV.

We believe it is appropriate to offer this second method of qualifying for the LMP because, based on the air quality data we have studied, we believe there are some monitoring sites with average design values above $40 \mu\text{g}/\text{m}^3$ or $98 \mu\text{g}/\text{m}^3$, depending on the NAAQS in question, that have experienced little variability in the data over the years. When the CDV calculation was performed for these sites we discovered that their average design values are less than their CDVs, indicating that the areas have a very low probability (1 in 10) of exceeding the NAAQS in the future. We believe it is appropriate to provide these areas the opportunity to qualify for the LMP in this circumstance since the $40 \mu\text{g}/\text{m}^3$ or $98 \mu\text{g}/\text{m}^3$ criteria are based on a national analysis and don't take into account each local situation.

The final criterion is related to mobile source emissions. 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. It is important to consider the impact of future transportation growth in the LMP, since the level of PM_{10} emissions (especially from fugitive dust) is related to the level of growth in vehicle miles traveled (VMT). Attachment B (below) should be used for making the motor vehicle regional emissions analysis demonstration.

If the State determines that the area in question meets the above criteria, it may select the LMP option for the first 10 year maintenance period. Any area that does not meet these criteria should plan to submit a full maintenance plan that is consistent with our guidance in the Calcagni Memo in order to be redesignated to attainment. If the LMP option is selected, the State should continue to meet the qualifying criteria until EPA has redesignated the area to attainment. If an area no longer qualifies for the LMP option because a change in air quality affects the average design values before the redesignation takes effect, the area will be expected to submit a full maintenance plan.

Once an area selects the LMP option and it is in effect, the State will be expected to recalculate the average design value for the area annually and determine if the criteria used to qualify for the LMP

⁴The methods for calculating design values for PM_{10} are presented in a document entitled the "PM₁₀ SIP Development Guideline", EPA-450/2-86-001, June 1987. The State should determine the most appropriate method to use from this Guideline in consultation with the appropriate EPA Regional office staff.

⁵If the EPA determines that the meteorology was not representative during the most recent five-year period, we may reject the State's request to use the LMP option and request, instead, submission of a full maintenance demonstration.

will still be met. If, after performing the annual recalculation of the area's average design value in a given year, the State determines that the area no longer qualifies for the LMP, the State should take action to attempt to reduce PM₁₀ concentrations enough to requalify for the LMP. One possible approach the State could take is to implement a contingency measure or measures found in its SIP. If, in the next annual recalculation the State is able to re-qualify for the LMP, then the LMP will go back into effect. If the attempt to reduce PM₁₀ concentrations fails, or if it succeeds but in future years it becomes necessary again to address increasing PM₁₀ concentrations in the area, that area no longer qualifies for the LMP. We believe that repeated increases in PM₁₀ concentrations indicate that the initial conditions that govern air quality and that were relied on to determine the area's qualification for the LMP have changed, and that maintenance of the NAAQS can no longer be assumed. Therefore, the LMP cannot be reinstated by further recalculations of the design values at this point. Once the LMP is determined to no longer be in effect, a full maintenance plan should be developed and submitted within 18 months of the determination.

Treatment of data used to calculate the design values.

Flagged Particulate Matter Data:

Three policies allow PM-10 data to be flagged for special consideration:

- Exceptional Events Policy (1986) for data affected by infrequent events such as industrial accidents or structural fires near a monitoring site;
- Natural Events Policy (1996) for data affected by wildfires, high winds, and volcanic and seismic activities, and;
- Interim Air Quality Policy on Wildland and Prescribed Fires for data affected by wildland fires that are managed to achieve resource benefits.

We will treat data affected by these events consistently with these previously-issued policies. We expect States to consider all data (unflagged and flagged) when determining the design value. The EPA Regional offices will work with the State to determine the validity of flagged data. Flagged data may be excluded on a case-by-case basis depending on State documentation of the circumstances justifying flags. Data flagged as affected by exceptional or natural events will generally not be used when determining the design value. However, in order for data affected by a natural event to be excluded, an adequate Natural Events Action Plan is required as described in the Natural Events policy.

Data flagged as affected by wildland and prescribed fires will be used in determining the design value. If the State is addressing wildland and prescribed fire use with the application of smoke management programs, the State may

submit an LMP if the design value is too high only as a result of the fire-affected data.

We are in the process of developing a policy to address agricultural burning. When it is finalized we will amend the LMP option to account for the new policy.

V. What should an LMP consist of?

Under the LMP, we will continue to satisfy the requirements of Section 107(d)(3)(E) of the Act which provides that a nonattainment area can be redesignated to attainment only if the following criteria are met:

1. The EPA has determined that the NAAQS for the applicable pollutant has been attained.
2. The EPA has fully approved the applicable implementation plan under section 110(k).
3. The EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions.
4. The State has met all applicable requirements for the area under section 110 and part D.
5. The EPA has fully approved a maintenance plan, including a contingency plan, for the area under section 175A.

However, there are some differences between what our previous guidance (the Calcagni memo) recommends that States include in a maintenance plan submission and what we are recommending under this policy for areas that qualify for the LMP. The most important difference is that under the LMP the demonstration of maintenance is presumed to be satisfied. The following is a list of core provisions which should be included in an LMP submission. Note that any final EPA determination regarding the adequacy of an LMP will be made following review of the plan submitted in light of the particular circumstances facing the area proposed for redesignation and based upon all available information.

a. Attainment Plan

The State's approved attainment plan should include an emissions inventory (attainment inventory) which can be used to demonstrate attainment of the NAAQS. The inventory should represent emissions during the same five-year period associated with the air quality data used to determine whether the area meets the applicability requirements of this policy (i.e., the most recent five years of air quality data). If the attainment inventory year is not one of the most recent five years, but the State can show that the attainment inventory did not change significantly during that five-year period, it may still be used to satisfy the policy. If the attainment inventory is determined to not be representative of the most recent 5 years, a new inventory must be developed. The State should

review its inventory every three years to ensure emissions growth is incorporated in the attainment inventory if necessary.

b. Maintenance Demonstration

The maintenance demonstration requirement of the Act will be considered to be satisfied for the moderate PM₁₀ nonattainment areas meeting the air quality criteria discussed above. If the tests described in Section IV are met, we will treat that as a demonstration that the area will maintain the NAAQS. Consequently, there is no need to project emissions over the maintenance period.

c. Important elements that should be contained within the redesignation request

1. Monitoring Network Verification of Continued Attainment

To verify the attainment status of the area over the maintenance period, the maintenance plan should contain a provision to assure continued operation of an appropriate, EPA-approved air quality monitoring network, in accordance with 40 CFR part 58. This is particularly important for areas using an LMP because there will be no cap on emissions.

2. Contingency Plan

Section 175A of the Act states that a maintenance plan must include contingency provisions, as necessary, to promptly correct any violation of the NAAQS which may occur after redesignation of the area to attainment. These contingency measures do not have to be fully adopted at the time of redesignation. However, the contingency plan is considered to be an enforceable part of the SIP and the State should ensure that the contingency measures are adopted as soon as possible once they are triggered by a specific event. The contingency plan should identify the measures to be adopted, and provide a schedule and procedure for adoption and implementation of the measures if they are required.

Normally, the implementation of contingency measures is triggered by a violation of the NAAQS but the State may wish to establish other triggers to prevent a violation of the NAAQS, such as an exceedance of the NAAQS.

3. Approved attainment plan and section 110 and part D CAA requirements:

In accordance with the CAA, areas seeking to be redesignated to attainment under the LMP policy must have an attainment plan that has been approved by EPA, pursuant to section 107(d)(3)(E). The plan must include all control measures that were relied on by the State to demonstrate attainment of the NAAQS. The State must also ensure that the CAA requirements for PM₁₀ pursuant to section 110 and part D of the Act have been satisfied. To comply with the statute, the LMP should clearly indicate that all controls that were relied on to demonstrate attainment will remain in place. If a State wishes to roll back or eliminate controls, the area can no longer qualify for the LMP and the area will become subject to full maintenance plan requirements within 18 months of the determination that the LMP is no longer in effect.

V. How is Conformity treated under the LMP option?

The transportation conformity rule (40 CFR parts 51 and 93) and the general conformity rule (58 FR 63214; November 30, 1993) apply to nonattainment areas and maintenance areas operating under maintenance plans. Under either conformity rule one means of demonstrating conformity of Federal actions is to indicate that expected emissions from planned actions are consistent with the emissions budget for the area. Emissions budgets in LMP areas may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that an area satisfying the LMP criteria will experience so much growth during that period of time such that a violation of the PM₁₀ NAAQS would result. While this policy does not exempt an area from the need to affirm conformity, it does allow the area to demonstrate conformity without undertaking certain requirements of these rules. For transportation conformity purposes, EPA would be concluding that emissions in these areas need not be capped for the maintenance period, and, therefore, a regional emissions analysis would not be required. Similarly, Federal actions subject to the general conformity rule could be considered to satisfy the “budget test” specified in section 93.158 (a)(5)(i)(A) of the rule, for the same reasons that the budgets are essentially considered to be unlimited.

EPA approval of an LMP will provide that if the LMP criteria are no longer satisfied and a full maintenance plan must be developed to meet CAA requirements (see Calcagni Memo referenced in footnote #2 for full maintenance plan guidance), the approval of the LMP would remain applicable for conformity purposes only until the full maintenance plan is submitted and EPA has found its motor vehicle emissions budgets adequate for conformity purposes under 40 CFR parts 51 and 93. EPA will condition its approval of all LMPs in this fashion because in the case where the LMP criteria are not met and a full maintenance plan is required EPA believes that LMPs would no longer be an appropriate mechanism for assuring maintenance of the standards.

For further information concerning the LMP option for moderate PM₁₀ areas please contact

Gary Blais at (919) 541-3223, or for questions about the CDV approach contact Dr. Shao-Hang Chu at (919) 541-5382. For information concerning transportation conformity requirements, please contact Meg Patulski of the Office of Transportation and Air Quality at (734) 214-4842.

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ATTACHMENT B: MOTOR VEHICLE REGIONAL ANALYSIS METHODOLOGY

The following methodology is used to determine whether increased emissions from on-road mobile sources could, in the next 10 years, increase concentrations in the area and threaten the assumption of maintenance that underlies the LMP policy. This analysis must be submitted and approved in order to be eligible for the LMP option.

The following equation should be used:

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

Where:

DV	=	the area's design value based on the most recent 5 years of quality assured data in $\mu\text{g}/\text{m}^3$
VMT_{pi}	=	the projected % increase in vehicle miles traveled (VMT) over the next 10 years
DV_{mv}	=	motor vehicle design value based on on-road mobile portion of the attainment year inventory in $\mu\text{g}/\text{m}^3$
MOS	=	margin of safety for the relevant PM-10 standard for a given area: 40 $\mu\text{g}/\text{m}^3$ for the annual standard or 98 $\mu\text{g}/\text{m}^3$ for the 24-hour standard

Please note that DV_{mv} is derived by multiplying DV by the percentage of the attainment year inventory represented by on-road 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 re-entrained road dust.

States should consult with EPA regarding the three inputs used in the above calculation, and all EPA comments and concerns regarding inputs and results should be addressed prior to submitting a limited maintenance plan and redesignation request.

The VMT growth rate (VMT_{pi}) should be calculated through the following methods:

- 1) an extrapolation of the most recent 10 years of Highway Performance Monitoring System (HPMS) data over the 10-year period to be addressed by the limited maintenance plan; and
- 2) a projection of VMT over the 10-year period that would be covered by the limited maintenance plan, using whatever method is in practice in the area (if different than #1).

Areas where method #1 is the current practice for calculating VMT do not also have to do calculation #2, although this is encouraged. All other areas should use methods #1 and #2, and VMT_{pi} is

whichever growth rate produced by methods #1 and #2 is highest. Areas will be expected to use transportation models for method #2, if transportation models are available. Areas without transportation models should use reasonable professional practice.

Examples

1. DV = 80 $\mu\text{g}/\text{m}^3$
 VMT_{pi} = 36%
 DV_{mv} = 30 $\mu\text{g}/\text{m}^3$
 MOS = 98 $\mu\text{g}/\text{m}^3$ for 24-hour PM-10 standard

$$80 + (.36 * 30) = 91$$

Less than 98 – Area passes regional analysis criterion.

2. DV = 35 $\mu\text{g}/\text{m}^3$
 VMT_{pi} = 25%
 DV_{mv} = 6 $\mu\text{g}/\text{m}^3$
 MOS = 40 $\mu\text{g}/\text{m}^3$ for annual PM-10 standard

$$35 + (.25 * 6) = 37$$

Less than 40 – Area passes regional analysis criterion.

3. DV = 115 $\mu\text{g}/\text{m}^3$
 VMT_{pi} = 25%
 DV_{mv} = 60 $\mu\text{g}/\text{m}^3$
 MOS = 98 $\mu\text{g}/\text{m}^3$ for 24-hour PM-10 standard

$$115 + (.25 * 60) = 130$$

More than 98 – Area does not pass criterion. Full section 175A maintenance plan required.

Appendix B. Emissions Inventory

City of Pinehurst PM₁₀ Limited Maintenance Plan

Appendix B—Emission Inventory for 2013 Base Year

September 2017



**Prepared by
Idaho Department of Environmental Quality
State Office**

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1 Introduction

The City of Pinehurst in Shoshone County was officially designated nonattainment for PM₁₀ by operation of law on November 15, 1990, upon enactment of the Clean Air Act Amendments of 1990. In addition, effective January 20, 1994, EPA designated nonattainment for PM₁₀ an area in Shoshone County just outside the City of Pinehurst (58 FR 67334) known as the Pinehurst expansion PM₁₀ nonattainment area. EPA determined that the Pinehurst area and Pinehurst expansion area (together referred to as the Pinehurst NAA) attained the PM₁₀ National Ambient Air Quality Standard (NAAQS) on August 23, 2001. In 2001 EPA issued the *Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas* (EPA 2001), which streamlined maintenance plan provisions for certain moderate PM₁₀ NAAs seeking redesignation to attainment. According to EPA (2001), the Limited Maintenance Plan (LMP) submission for Pinehurst should include an emissions inventory (EI) to demonstrate attainment of the NAAQS. The EI should represent emissions during the same 5-year period associated with the air quality data used to determine whether the Pinehurst and Pinehurst Expansion PM₁₀ NAAs meet the criteria of the policy (2011–2015). DEQ selected 2013 as the base year for the Pinehurst PM₁₀ NAA emission inventory as 2013 represents the midpoint of the most recent 5-year period recommended by the LMP guidelines. Idaho most recently developed a periodic emissions inventory (PEI) for 2014 for each county in the state. The 2014 PEI was the starting point for developing most of the Pinehurst PM₁₀ NAA EI. The process for developing the state PEI is described below.

According to the Air Emissions Reporting Requirements (AERR) (40 CFR 51), the Idaho Department of Environmental Quality (DEQ) compiled a calendar-year 2014 statewide, county-level PEI. The PEI includes criteria pollutants, as well as hazardous and toxic air pollutants. The criteria pollutants include carbon monoxide, lead, ammonia, oxides of nitrogen, PM₁₀-Primary, PM_{2.5}-Primary, sulfur dioxide, and volatile organic compounds. The PEI emissions estimations are submitted to EPA via the Emission Inventory System for use in the National Emissions Inventory (NEI). Since 2014 activity data was not yet available for many emissions categories, most of the PEI activity data is from 2013.

Nonpoint sources include emissions estimates for sources that individually are too small in magnitude to report as point sources. These emissions sources are calculated and included in the PEI as a county total. The nonpoint sources in the inventory include the following main source categories: residential wood combustion (RWC), windblown dust from road and building construction, paved and unpaved road dust, residential open burning, commercial cooking, charcoal grilling, commercial and industrial fuel combustion, vehicle and structure fires, and residential heating (no RWC). There are other emissions categories as well, but these are not relevant to the PM₁₀ NAA LMP.

Point source emissions are from larger sources located at fixed, stationary locations. There are no point sources in the NAA classified as either “major” or “minor” stationary sources documented in this LMP.

The nonroad portion of the inventory was calculated for each county in Idaho using the 2014 version of the Motor Vehicle Emission Simulator (MOVES) (EPA 2015a), which now includes

the NONROAD model. DEQ ran the model with EPA default values (e.g., number of engines, horsepower, and hours of use) to get 2013 emissions estimates for Shoshone County. The nonroad mobile sources of the inventory include recreational vehicles; construction equipment; industrial and commercial equipment; lawn and garden equipment; agricultural equipment; light commercial equipment; airport service equipment; and railway maintenance equipment. While the MOVES model estimates these for Shoshone County, the PM₁₀ NAA does not contain all of the emissions categories as discussed in Section 4 below.

Mobile sources include the various categories of vehicles driven on Idaho roads. These sources are calculated using the 2014 version of the Motor Vehicle Emission Simulator (MOVES) (EPA 2015a). DEQ gathered data from the statewide vehicle registration database, traffic counters, and the link-level Vehicle Miles Traveled (VMT) data set. These data were processed and prepared for the input database in the proper format for use with MOVES2014.

Figure 1 shows the outer boundary of the Pinehurst NAA in Shoshone County. Subsequent sections describe how the EI was developed at the county level and apportioned to the NAA for each emission source category.

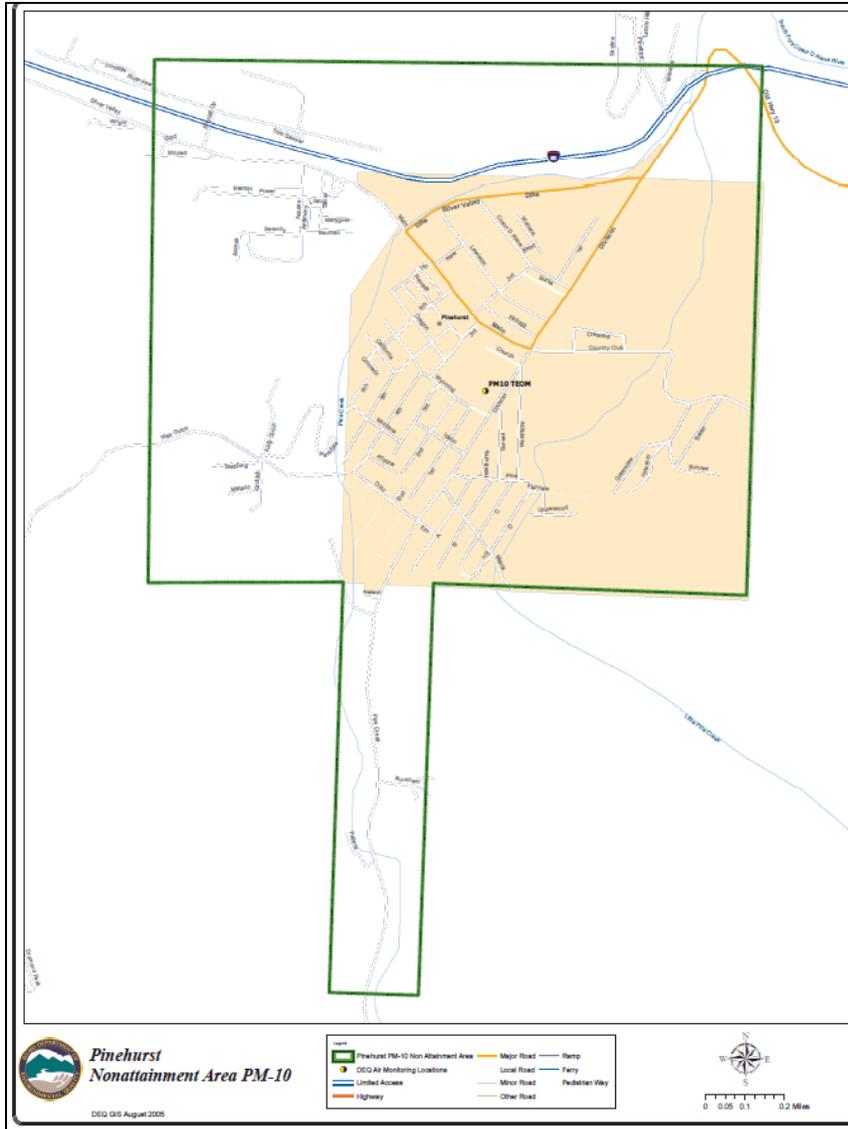


Figure 1. Pinehurst PM₁₀ NAA in Shoshone County.

2 Nonpoint Sources

This section describes the steps involved in calculating the nonpoint source emissions.

2.1 Data Gathering and Emissions Calculations

The 2013 nonpoint Pinehurst PM₁₀ NAA source emissions were calculated by first gathering 2013 activity data including population, employment in various types of industry, and other categories of activity data for Shoshone County. Then, relevant emissions factors per unit were gathered from various sources. Emissions factors were applied to the activity data, and pollutant emissions were estimated based on these factors.

In general, many of the emissions for Pinehurst PM₁₀ NAA were calculated from 2014 National Emissions Inventory v1 Shoshone County data based on the ratio of Pinehurst PM₁₀ NAA occupied households to the number of occupied households in Shoshone County. The categories calculated for the PM₁₀ NAA are explained below in sections 2.1.1–2.1.11. Most of the 2014 NEI v1 categories were calculated using 2013 activity data. Those categories in the 2014 v1 NEI using 2014 activity data were recalculated using 2013 activity data unless otherwise noted in the detailed sections below.

DEQ compared the number of occupied households in the Pinehurst PM₁₀ NAA to the number of occupied households in Shoshone County and used that ratio to apportion many of the nonpoint emissions. Demographic data were gathered from the United States Census Bureau (2010, 2013). The 2010 household data were used since it was the last full census data available for the NAA. The historic Pinehurst City population data from the Idaho Department of Labor (Labor 2013) also shows growth in that area to be flat (1,618 population in 2010 and 1,619 population in 2013). The 2013 percentage of occupied homes was applied to the 2010 number of households to get the number of occupied households for 2013 in the PM₁₀ NAA (Table 1).

Table 1. 2013 occupied households for Shoshone County and the PM₁₀ NAA.

Area	2010 Population	2010 Households	2013% Occupied	2013 Occupied
Pinehurst PM ₁₀ NAA	1,889	919	96.0%	882
Shoshone County	12,917	7,070	81.3%	5,749

2.1.1 Residential Wood Combustion

Residential wood combustion (RWC) is estimated by EPA’s Microsoft Access RWC tool v2.1 using RWC tool v3.1 emissions factors. RWC consists of home heating and recreational use of woodstoves, pellet stoves, fireplaces, and fireplaces inserts. Idaho used the recent West Silver Valley NAA woodstove survey data (appended to the *2013 Base Year Inventory for the West Silver Valley PM_{2.5} Nonattainment Area*) to estimate emissions for the Pinehurst PM₁₀ NAA. The details of the survey results used for RWC calculations are shown in sections 2.1.5.1.1–2.1.5.2.

2.1.1.1 Activity Data

In January 2016, DEQ contracted with Boise State University to complete a woodstove and open burning survey for the West Silver Valley PM_{2.5} NAA. The results of the survey were used to estimate RWC emissions for the Pinehurst PM₁₀ NAA, after adjusting for any woodstove changeouts between 2013 and the date of the survey. Methodologies for determining the activity data varied by the type of RWC appliance.

DEQ used the Microsoft Access RWC tool v2.1 to estimate RWC emissions. This estimate requires modifying a number of input tables to match ratios of wood-burning appliance users found in the West Silver Valley PM_{2.5} NAA woodstove survey. The survey results for Kellogg showed differences for some categories (certified and uncertified woodstoves, fireplaces, and outdoor warming fires; Table 2); therefore the RWC tool was run with survey averages minus the Kellogg survey responses. The first number in the formulas columns from Table 2 is the

number of responses from the valid survey responses from Kellogg and the rest of the West Silver Valley. The final column shows the adjusted ratio used for the PM₁₀ NAA woodstove estimates after taking out woodstove replacements after 2013 that were included in the survey.

The Pinehurst PM₁₀ NAA adjusted ratio was calculated by first estimating the number of woodstoves in 2013 for the NAA by applying the ratio for other ZIP codes in Table 2 to the number of occupied households in the PM₁₀ NAA (882; Table 1).

Table 2. West Silver Valley NAA woodstove survey results.

Woodstove Survey	Kellogg	Other ZIP Codes	Kellogg	Other ZIP Codes	2013 PM ₁₀ NAA Adjusted
	Formulas		Ratios		Ratios
Certified	=4/74	=33/155	0.054	0.213	0.1914
Not certified	=10/74	=31/155	0.135	0.200	0.2238
Pellet	=2/74	=5/155	0.027	0.032	0.0311
Fireplace	=6/74	=15/155	0.081	0.097	0.0968
NEC (warming fires)	=11/74	=40/155	0.149	0.258	0.2581
Valid Surveys	74	155	74	155	—

The 2013 adjusted appliance numbers for the PM₁₀ NAA had to account for 21 known woodstove replacements between 2013 and the time of the survey. There were 19 woodstove to woodstove replacements and 1 each to natural gas and a pellet stove (Table 3). DEQ first calculated the number of each type of solid fuel burning appliances in the Pinehurst PM₁₀ NAA by applying the ratio from Table 2 to the number of occupied households in the PM₁₀ NAA. To account for the woodstove change outs that took place between 2013 and 2016, DEQ subtracted 19 (number of woodstove change outs from wood to wood) from the certified stove population of the survey then added 21 (19 wood to wood replacements plus the wood to natural gas and pellet replacements) to the non-certified woodstove population from the survey. DEQ also adjusted the pellet stove population from the survey to 2013 level by subtracting the one wood to pellet change out that took place after 2013. Lastly, the 2013 adjusted appliance numbers were converted to a ratio for use in the RWC tool by dividing them by the number of occupied households in the PM₁₀ NAA.

Table 3. 2013 PM₁₀ NAA wood burning appliance calculations.

Survey Results	OCC HH	Certified	Non-Certified	Pellet	Fireplace	NEC
WS Survey (Ratios)		0.2129	0.2000	0.0323	0.0968	0.2581
Pinehurst PM ₁₀ Survey	882	188	176	28	85	228
Pinehurst PM ₁₀ 2013	882	169	197	27	85	228
WS PM ₁₀ Ratios		0.1914	0.2238	0.03112	0.0968	0.2581

Note: NEC = wood burning not elsewhere classified as certified, not certified, pellet stove, or a fireplace. These are outdoor warming or cooking fires.

The certified wood stoves were also broken out in the RWC tool to catalytic and non-catalytic due to slightly different PM₁₀ emissions factors. Based on survey responses the certified ratio above was assigned to catalytic (54.55%) and to non-catalytic (45.45%) in the RWC tool.

The average cords of wood burned and wood density was also determined by survey data. The average cords of wood burned was 3.102 cords per year for wood stoves and 2.2 tons per year for pellet stoves. The RWC tool defaults were used for fireplaces and NEC burning. The wood density was calculated by taking the percentage of wood burned by type and calculating a weighted average density based on how much of each type of wood was burned (Table 4). The different density for each type of wood was taken from the wood database website at: <http://www.wood-database.com/>. The percent of the type of wood used from the survey was multiplied by the density of that wood to get a weighted density. This was then totaled to get an average density to use in the RWC tool for the density of wood burned.

Table 4. Wood density calculations.

Wood type	%	Survey Count	Density lb/ft ³	lb/ft ³ Wgt Density
Western Larch	25.09%	11	36	9.03276
Doug Fir	38.94%	16	32	12.46208
West White Pine	23.74%	18	27	6.40953
Grand Fir	1.75%	1	28	0.49112
West Hemlock	8.39%	6	29	2.43252
Pond Pine	2.08%	2	28	0.58324
	100.00%	54		31.4113

Using the survey information in Tables 2-4, the RWC tool tables were updated to accurately calculate emissions. The Pinehurst PM₁₀ NAA was treated as its own county in the tool, which only calculates emissions on a county level.

2.1.1.2 *Emission Factors*

The RWC tool emissions factors were gathered by EPA from various sources. The fireplace emission factors are from Houck, Crouch and Huntley (2001). Pellet stove emission factors are from Houck and Eagle (2006). The rest of the emission factors are from EPA AP-42 section 1.10 Residential Wood Stoves (1996) with most adjusted to account for appliances that meet EPA and Washington state emission standards.

2.1.1.3 *Sample Calculations*

Emissions can be calculated from the various types of wood-burning appliances using the following equation:

RWC emissions = appliance population × burn rate (cords/yr) × wood density × emission factor.

For pellet stoves, the calculation is tons of pellets used per year multiplied by the emission factor.

The annual fuel consumption is multiplied by the wood density and the number of cubic feet in a cord (80) to get tons per year of wood burned. The appliance population and emission factor are then applied to the tons of wood burned to get the total emissions for a pollutant.

Examples:

The Pinehurst PM₁₀ NAA is estimated to have about 197 non-EPA certified woodstoves (Table 3). The burn rate is 3.102 cords per year with a wood density (Table 4) of 31.4113 pounds per cubic foot (lb/ft³). The PM₁₀ emission factor is 30.6 lb PM₁₀/ton of wood burned.

Emissions = 197 non-certified woodstoves × (3.102 cords/yr × 80 ft³ per cord × 31.4113 lb/ft³ wood density/2,000 to convert to tons) × 30.6 lb/ton PM₁₀ emission factor/2,000 to convert to tons = 11.7 TPY PM₁₀.

Table 5 shows all the wood burning appliances that were calculated for the Pinehurst PM₁₀ NAA. The numbers shown are rounded from the EPA RWC model.

Table 5. 2013 RWC calculations.

Woodburning Appliance	# Stoves	Cords	ft ³ /Cord	Density (lb/ft ³)	Convert /2000	Tons Burned	EF lb/ton	Convert /2000	Total PM ₁₀
Fireplace	85	0.8	80	31.411	2000	85.8	23.6	2000	1.0
Woodstove non-EPA Certified	197	3.1	80	31.411	2000	769.4	30.6	2000	11.7
Woodstove EPA Certified Non-Cat	77	3.1	80	31.411	2000	300.1	14.5	2000	2.2
Woodstove EPA Certified Cat	92	3.1	80	31.411	2000	358.3	15.2	2000	2.7
Pellet Stove	27	2.2				60.4	3.06	2000	0.1
NEC (Rec outdoor fires)	228	0.213	80	31.411	2000	60.9	23.6	2000	0.7
Total RWC									17.7
Total NEC (Rec outdoor fires)									0.7

2.1.2 Windblown Dust

Emissions from windblown dust activities for the PM₁₀ NAA are a function of the acreage disturbed for residential construction and road construction. Windblown dust is fugitive dust, and particulate matter is usually reported as filterable. Because there is no condensable portion for fugitive particulate, Idaho only reported primary PM₁₀ emissions.

2.1.2.1 Activity Data**2.1.2.1.1 Residential Construction**

Two activities apply to the residential construction category. The first is the number of building permits issued for the Pinehurst PM₁₀ NAA in 2013. Pinehurst City Hall reported to DEQ that only one building permit was issued. The second activity calculates an emission factor that

accounts for how much surface soil is disturbed for different sizes of housing units, basement soil removal, soil moisture, and soil silt content. Idaho used EPA’s estimates for these activities (EPA 2014). Idaho used the number of building permit residential units (one) and assigned 0.3 acres per unit without regard to type (e.g., single-family or two-family dwelling, etc.) to determine the number of acres disturbed by residential construction.

EPA calculated emissions for the 2014 NEIv1 using different factors including: duration of construction activity and regional variances in soil moisture and silt content. Idaho extrapolated these calculations based on the total acres disturbed and the resulting emissions and applied unique emissions factors to each county.

For the Pinehurst PM₁₀ NAA, the number of building permits was one. The assumed number of acres disturbed per housing unit is 0.3. The Shoshone County calculated emission factor from EPA data for PM₁₀ was 0.3716 tons/acre.

Pinehurst PM₁₀ NAA PM₁₀ = 0.3 * 0.3716 = 0.1115 TPY of PM₁₀ from residential construction.

2.1.2.1.2 Road Construction

DEQ compiled an internal list of rebuilt roads in Pinehurst. The list did not have dates but consists of roads rebuilt from 2013 through 2016 using road miles. An average was calculated for 2013 from the data. Road miles were assumed to be two 12-foot lanes. The dust calculation is determined by road miles multiplied by feet per mile divided by the square feet in an acre, which equals disturbed acres. The emission factor is then applied to calculate emissions.

EPA calculated emissions factors for the 2014 NEI using a number of different factors including: dollars and acres to miles of road, duration of construction activity, and regional variances in soil moisture and silt content. Idaho calculated a single emission factor from the data for estimating emissions.

The road construction windblown dust calculation (Table 6) is:

9.06 road miles over 5 years * 5280 ft/mile * 24 (two lanes 12 feet wide) / 43,560 square feet in an acre * 1.3296 tons/acre / 5 for one year = 7.009 TPY of PM₁₀.

Table 6. PM₁₀ NAA road construction dust calculations.

5 years road miles	* ft/mile	* two lanes 12 feet wide	/ number of square feet in an acre	* EF Tons/Acre	/ 5 to avg for one year	PM ₁₀ NAA PM ₁₀ TPY
9.06	5280	24	43,560	1.3296	5	7.009

2.1.3 Unpaved Road Dust

Unpaved road dust was calculated from the 2014 NEI v1 EPA Shoshone County data, which had a total urban-controlled PM₁₀ value of 14.43 tons per year (TPY) (EPA 2015b). EPA calculations split the emissions into rural and urban categories to more accurately assign emissions. The US Census American fact finder population estimates for Pinehurst City for 2013 and 2014 are 1752 and 1743 respectively, showing no growth. The same lack of growth was observed in Shoshone County; population estimates in 2013 and 2014 were 12,729 and 12,629, respectively. Since these

estimates were well within the margin of error, Idaho assumed that the 2014 EPA unpaved road dust emissions were representative of 2013 emissions.

According to the 2010 US Census, urban households represented 0.4386 of the households in Shoshone County (3097/7061). Idaho used the urban ratio of occupied households in Shoshone County to apportion unpaved road dust into the NAA. Idaho made the assumption that the occupied households (882) in the PM₁₀ NAA were all urban as they are mostly located within city limits and surrounding suburbs.

The calculation for the unpaved road dust emissions for the PM₁₀ NAA is as follows:

Urban ratio for Shoshone County (3097/7061 = 0.4386) * the number of occupied households in Shoshone County (5749) = 2,522 urban households in Shoshone County. Then the number of occupied households in the PM₁₀ NAA (822, all assumed to be urban) is divided by the number of urban households in Shoshone County (822/2522 = 0.32599) to get the number needed to apportion the 14.43 TPY of PM₁₀ emissions to the PM₁₀ NAA:

0.32599 * 14.43 = 4.7 TPY for the PM₁₀ NAA (Table 7).

Table 7. 2013 unpaved road dust calculations.

Shoshone Urban Ratio (3097/7061)	Shoshone Occupied Households	Shoshone Urban Occ. Households	PM ₁₀ NAA Urban Occ. Households	PM ₁₀ NAA multiplier (822/2522)	Shoshone Urban PM ₁₀ TPY	PM ₁₀ NAA PM ₁₀ TPY
0.4386	5,749	2,522	822	0.32599	14.43	4.7

2.1.4 Paved Road Dust

Paved road dust emissions were calculated using *Emission Factor Documentation for AP-42 Section 13.2.1 Paved Roads* (EPA 2011). The county total emissions were produced, and then allocated from Shoshone County estimates to the Pinehurst PM₁₀ NAA based on link-level VMT for freeways and other roadways. The methodology for allocating the county emissions is detailed below. Paved road dust emissions are normally part of the nonpoint totals, but DEQ included them with the on-road data in the final emissions summaries.

2.1.4.1 Paved Road Dust Methodology

Fugitive dust from paved roads can be a significant source of particulate matter emissions. In general, the processes that affect paved road dust emissions include the weight of the vehicles that drive on the roadway surface, the loading of dust particulates or silt on the roadway surface available for entrainment, and precipitation on the roadway that suppresses road dust emissions.

Based on similarity of geographic features, vehicle travel patterns, and data sources, DEQ grouped the 44 Idaho counties into three groups: North Idaho, South Idaho, and Treasure Valley. North Idaho, which the Pinehurst PM₁₀ NAA falls into, exhibits slightly different fleet characteristics and traffic patterns than South Idaho due to the 1-hour time zone difference and somewhat different non-work traffic patterns that appear to result from less interstate traffic and greater weekend recreational travel to the large lakes in North Idaho.

2.1.4.1.1 Vehicle Miles Traveled Calculation

The 2014 VMT used for the North Idaho counties was generated from Highway Performance Monitoring System (HPMS) statewide annual VMT data (ITD 2015a). VMT data were used in conjunction with Idaho Transportation Department (ITD) link-level annual average daily VMT, and Automatic Traffic Recorder (ATR) data to produce VMT for each day type, month, roadway type, vehicle type, and county (ITD 2015a,b,c).

2.1.4.1.2 Paved Road Dust Emission Factor Calculation

Paved road dust emissions were computed using the “daily basis” emission factor equation (Equation 1) provided in the AP-42 guidance (EPA 2011). The emissions are computed separately for each combination of “day type” (i.e., weekday or weekend), month, roadway type and county as a product of the emission factor and the VMT for each of those combinations. The emission factor itself is computed separately for each day type, month, roadway type, and county in Idaho using the VMT-weighted road surface silt load, VMT-weighted vehicle weight, and the number of “wet” days with at least 0.254 millimeters (mm) (0.01 inches) of precipitation during the month.

$$E_{ext} = (k(sL)^{0.91} \times (W)^{1.02}) \times \left(1 - \frac{P}{4N}\right) \quad \text{Equation 1. Daily basis emission factor.}$$

Where:

E_{ext} = PM₁₀ or PM_{2.5} emission factor [g/VMT]

k = Particle size multiplier for PM₁₀ (1.0) or PM_{2.5} (0.057) [g/VMT]

sL = Road surface silt loading [g/m²]

W = Average weight of the vehicles in the fleet [short tons]

P = Number of days per month with at least 0.01 inches of precipitation

N = Number of days in the averaging period.

The following sections discuss these inputs in detail. Note, for simplicity, DEQ group roadway into local roads, arterials, and freeways for both rural and urban area; however VMT are available in the HPMS roadway types (ITD 2015a).

2.1.4.1.3 Silt Loading Factors

Custom VMT-weighted silt loading factors were calculated for the northern county group. The VMT-weighting calculation for summer and winter silt loading for each road type is described in Equation 2.

$$sL = \sum_{i=1}^4 a_i U_i \quad \text{Equation 2. Silt Loading.}$$

Where:

sL = VMT-weighted silt loading factor

i = Index from 1 to 4, which represent average daily traffic volume categories <500, 500–5,000, 5,000–10,000, and >10,000, respectively

a = Fraction of VMT on in the traffic volume category

U = Ubiquitous baseline for the summer season or ubiquitous winter baseline for the winter season depending on month.

2.1.4.1.4 Average Vehicle Weight

A VMT-weighted average fleet vehicle weight was calculated for each day type and HPMS roadway type for Shoshone County. ATR data from the entire state was used to determine the vehicle type fractions traveling on each roadway type in Idaho. The average vehicle weight for each vehicle type was obtained from the MOVES2014 defaults.

2.1.4.1.5 Precipitation Days

The number of days in 2013 with more than a "trace" of precipitation (>0.01 inches) is required for each month. The general philosophy in obtaining this precipitation data is that most of the traffic occurs in the cities so emphasis is generally on the meteorological sites in or near the largest cities in each county.

Hourly meteorological records downloaded from MESOWEST (MESOWEST 2015a) were used to determine days with trace precipitation, and those days were accumulated to monthly totals. The data process procedure is as follows:

- The MESOWEST sites were screened for several parameters to make sure they were complete, and reflected normal historical ranges. Those that did not meet the screening criteria were removed from the analysis.
- The quality-screened MESOWEST database was further screened to select those sites that were rated higher (by DEQ) because they are:
 - Near the largest cities
 - From high quality National Weather Service/Federal Aviation Administration stations
 - Appeared to be consistent with other sites in the county and neighboring counties.
- The days per month with more than a trace amount of precipitation in Shoshone County during 2013 are shown in Table 8.

Table 8. Number of days with greater than 0.01 inches of precipitation monthly in 2013.

County	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Shoshone	14	25	10	12	6	8	7	5	15	4	11	11

2.1.4.2 Results

Paved road dust emissions for the Pinehurst PM₁₀ NAA are summarized in Table 9. The MOVES2014 model Shoshone County estimates for 2013 were allocated to the Pinehurst PM₁₀ NAA based on link-level VMT for freeways and other roadways. The NAA VMT is divided by the Shoshone County VMT to get a ratio to apportion the PM₁₀ emissions to the NAA. The ratio is then used to multiply the Shoshone county TPY PM₁₀ to get the PM₁₀ NAA PM₁₀ total.

Table 9. 2014 annual paved road dust PM₁₀ emissions (TPY).

Roadway Type	Shoshone VMT	PM ₁₀ NAA VMT	Ratio	Shoshone TPY	PM ₁₀ NAA TPY
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Freeway	127,257,755	7,635,465	0.060	44.949	2.697
Other	95,589,026	669,123	0.007	216.374	1.515
Total					4.212

The paved road dust emissions will be shown in the onroad section and added to the emissions summary so all onroad emissions are reflected in that category.

2.1.5 Residential Open Burning

Residential open burning includes the burning of municipal solid waste (MSW) in burn barrels, and the burning of leaves, brush, and grass/weeds. This burning was apportioned to the Pinehurst PM₁₀ NAA using the number of households in the NAA as compared to the number of rural households in Shoshone County. Since residential open burning is generally not practiced in urban areas, only the rural population is assumed to practice open burning. In order to apportion emissions from Shoshone County data, DEQ assumed the PM₁₀ NAA was rural, since there are no urban open burning emissions to apportion from the NEI. Open burning is allowed in the area so this was the most accurate way to estimate emissions.

2.1.5.1 Residential Municipal Solid Waste (MSW)

Open burning of residential MSW is the purposeful burning of MSW in outdoor areas. Criteria air pollutant emission estimates for MSW burning are a function of the amount of waste burned per year.

2.1.5.1.1 Residential MSW Activity Data

EPA estimated the amount of household MSW, which is reported in the *Advancing Sustainable Materials Management: 2013 Fact Sheet* (EPA 2015c). The report presents the total mass of waste generated in the United States by type of waste for calendar year 2013. This information was used to calculate a daily estimate of the per capita household waste subject to burning, 1.973 lb/person/day. Noncombustible waste, such as glass and metal, was not considered to be waste subject to burning. Burning of yard waste is not part of residential MSW. Approximately 25% to 32% of all waste that is subject to open burning is actually burned (EPA 1994). A median value of 28% is assumed to be burned in all counties in Idaho.

Because open burning is generally not practiced in urban areas, only the rural population of each county was assumed to practice open burning. The ratio of urban to rural population was obtained from 2010 US census data (US Census 2010). This ratio was then multiplied by the US Census Bureau estimate of the population in Shoshone County to obtain the county-level rural population (US Census 2013). The county-level rural population was then multiplied by the per capita household waste subject to burning to determine the amount of rural household MSW generated (Table 10).

2.1.5.1.2 Residential Municipal Solid Waste Emission Factors

Emission factors were developed by EPA in consultation with the various states' EI staff and based primarily on the AP-42 report (EPA 1992).

County-level PM₁₀ emissions were calculated by multiplying the total amount of residential MSW burned per year by an emission factor, accounting for rule effectiveness. Controls for residential MSW burning are generally in the form of a ban on open burning of waste in a given municipality or county. Idaho has a state rule prohibiting the burning of household MSW (IDAPA 58.01.01.603). Idaho is estimating 50% compliance with the rule in each county based on DEQ regional office observations.

The final residential municipal solid waste burning calculation is:

1.973 lb/person/day burnable waste generated

* Shoshone county rural population (12,279 Shoshone county 2013 population * 2010 US Census 56.04% Shoshone county rural population = 7,133) = 14,074 lb burnable waste generated

* 365 to get an annual amount in lb / 2000 to convert to tons per year = 2568.52 TPY burnable waste generated

* 0.28 for burnable waste actually burned = 719.1856 TPY estimated waste burned

*38 lb/TON of PM₁₀ generated from burning = 27,329.05 lbs of PM₁₀ generated

/ 2000 to convert to tons of PM₁₀ emissions = 13.6645 TPY PM₁₀ emissions

* 50% for Rule effectiveness) = 6.83 TPY PM₁₀ for Shoshone County (Table 10).

DEQ compared the number of rural households in Shoshone County to that in the PM₁₀ NAA. That ratio was then applied to the 6.83 TPY of PM₁₀ in Shoshone County to apportion it to the PM₁₀ NAA (Table 11).

The US Census indicates that 56.04% of Shoshone County is rural. Of the 5,749 occupied households in Shoshone county 3,222 (5,749 * 56.04%) are considered rural.

So the apportionment calculation (Table 11) would be:

6.83 TPY PM₁₀ in Shoshone County * (822 PM₁₀ NAA occupied households / 3,222 rural Shoshone County occupied households) = 1.743 TPY of PM₁₀ for the PM₁₀ NAA.

Table 10. Shoshone County MSW PM₁₀ calculations.

lb/person /day MSW generated	Shoshone Rural Pop (12,729* 0.5604)	Shoshone Rural Pop * MSW lb/person/day	* 365 /2000 for TPY	*28% MSW actually Burned in TPY	*38 lb/ton PM ₁₀	/2000 = PM ₁₀ TPY Shoshone County	* 50% Rule Effect-ivness	Shoshon e County PM ₁₀ TPY
1.973	7,133	14,074.06	2,568.52	719.18	27,329	13.66	50%	6.83

Table 11. Pinehurst PM₁₀ NAA MSW PM₁₀ calculations.

PM ₁₀ Households (HHs)	Shoshone Rural HHs (5749*0.5604)	Amount to Apportion to PM ₁₀ NAA (822/3222)	PM ₁₀ NAA PM ₁₀ TPY (6.83 *25.51%)
822	3,222	25.51%	1.743

2.1.5.2 Residential Yard Waste

Open burning of yard waste is the purposeful burning of leaf and brush species in outdoor areas. Criteria air pollutant and hazardous air pollutant emission estimates for leaf and brush waste burning are a function of the amount of waste burned per year.

2.1.5.2.1 Residential Yard Waste Activity Data

EPA estimated the amount of yard waste burned, which is reported in the *Advancing Sustainable Materials Management: 2013 Fact Sheet, June 2015* (EPA 2015c). The report presents the total mass of waste generated in the United States by type of waste, including yard waste, for calendar year 2013. This information was used to calculate a daily estimate of the per capita yard waste, 0.3642 lb/person/day. Of the total amount of yard waste generated, the yard waste composition was assumed to be 25% leaves, 25% brush, and 50% weeds/grass by weight (EPA 1994).

Approximately 25% to 32% of all waste that is subject to open burning is actually burned. A median value of 28% is assumed to be burned in all counties in Idaho. Open burning of grass clippings is not typically practiced by homeowners, although weed burning is common in the West and in Idaho. Idaho estimated weed burning to be 10% of the weed and grass waste category based on regional office field observations and did not use the 50% assigned by EPA as noted in the paragraph above.

The per capita estimate was then multiplied by the 2013 population in Shoshone County that is expected to burn waste. Because open burning is generally not practiced in urban areas, only the rural population of the county was assumed to practice open burning. The ratio of urban to rural population was obtained from the US Census (2010). This ratio was then multiplied by the US Census (2013) estimate of the population in each county to obtain the county-level rural population (Table 12).

2.1.5.2.2 Residential Yard Waste Emission Factors

Emission factors are specific to yard waste type. The emission factors for criteria air pollutants were developed by EPA in consultation with various states' EI staff (Huntley 2009). County-level PM₁₀ emissions were calculated by multiplying the total amount of yard waste (leaf, brush, or weeds) burned per year by an emission factor. Emissions for residential leaves, brush, and weeds were calculated separately because emission factors vary by yard waste type (Table 12).

Table 12. Residential open burning calculations for Shoshone County.

Open Burn Type	lb/person /day burnable waste generated	Shoshone Rural Pop (12,729* 0.5604)	Shoshone Rural Pop * waste lb/person/day	* 365 /2000 for Tons Per Year	*28% MSW actually Burned in TPY	Type of waste appor - tioned	TPY waste burned	Emission Factors lb/Ton	Waste*EF /2000 = PM ₁₀ TPY in County
Leaves	0.3642	7,133	2,597.81	474.10	132.75	25%	33.19	22.00	0.37
Brush	0.3642	7,133	2,597.81	474.10	132.75	25%	33.19	19.73	0.33
Weeds	0.3642	7,133	2,597.81	474.10	132.75	10%	13.27	15.00	0.10

Emissions from Shoshone County residential open burning were then apportioned to the PM₁₀ NAA as shown in Table 13.

Table 13. 2013 Residential open burning for the Pinehurst PM₁₀ NAA.

Open Burning Type	PM ₁₀ Households (HHs)	Shoshone Rural HHs (5749 *0.5604)	Amount to Apportion to PM ₁₀ NAA (822/3222)	PM ₁₀ NAA PM ₁₀ TPY (PM ₁₀ *25.51%)
Leaves	822	3,222	25.51%	0.093
Brush	822	3,222	25.51%	0.084
Weeds /Grass	822	3,222	25.51%	0.025
Total				0.202

2.1.6 Commercial Cooking

Commercial cooking emissions are for five source categories based on equipment type (Table 14). Emissions estimates are for all types of meat cooked in a particular piece of equipment. Deep fat frying of French fries was also included.

The activity data used to estimate emissions from commercial cooking was 2013 county-level population data, which was obtained from the US Census Bureau (US Census 2013d). DEQ used the 2011 EPA per capita emissions factors used in the 2011 NEI (EPA 2011b). The per capita emission factors were then multiplied by the 2013 county-level population estimates (Table 14).

Table 14. Commercial cooking PM₁₀ calculations.

Commercial Cooking	PM ₁₀ EF lb/person	* Shoshone County Pop	= Shoshone County lbs PM ₁₀	Apportion lbs to PM ₁₀ NAA (822/5749)	/ 2000 to convert to TPY	PM ₁₀ NAA PM ₁₀ TPY
Conveyorized Charbroiling	0.04980	12,729	633.85	90.63	2000	0.0453
Under-fired Charbroiling	0.35276	12,729	4,490.29	642.03	2000	0.3210
Flat Griddle Frying	0.10311	12,729	1,312.50	187.66	2000	0.0938
Clamshell Griddle Frying	0.00699	12,729	89.03	12.73	2000	0.0064
Deep Fat Frying (French Fries)	0	12,729	0.00	0.00	2000	0.0000
Total Commercial Cooking						0.467

2.1.7 Residential Charcoal Grilling

Residential barbecue grilling emissions include emissions from the burning of charcoal, and all types of outdoor meat grilling. Fuel combustion emissions from gas barbecues are included under residential heating fuels (Table 23). Emissions estimates are for charcoal and all types of meat cooked on charcoal, gas, and electric grills.

2.1.7.1 Residential Charcoal Grilling Activity Data

The activity data needed to estimate emissions from residential charcoal grilling is the number of 2013 households from 1-4 units, the amount of charcoal used in Idaho in 2013, and the amount of meat cooked during outdoor grilling on charcoal, gas, and electric grills. The household data was obtained from the US Census Bureau 2013 5-year estimates (Census 2013, 2013b). The ratio of occupied households to total households was used on the total households of 1-4 units to calculate the occupied 1-4 unit households. The amount of charcoal sold in Idaho was calculated from Hearth, Patio and Barbeque Association BBQ Statistics total charcoal sold in 2013 (HPBA 2013) using national and Idaho occupied 1-4 unit occupied households. The ratio of Idaho occupied 1-4 unit households compared to the national occupied 1-4 unit households was used on the total charcoal sold in the United States to get the Idaho portion of charcoal sold. Each county was then apportioned tons of charcoal based on their ratio of the total number of 1-4 unit

households in Idaho. It was assumed that those in larger apartment units would not have the space to have or use an outdoor grill.

The activity data for the weight of meat cooked was calculated using some generally accepted information about charcoal grilling. It is generally assumed that about 30 charcoal briquettes are needed to cook a pound of meat (Orillia 2009, HPBA 2015). Information from Kingsford on the average weight of their charcoal briquettes indicated that there are about 17.64262 briquettes/lb of charcoal (Kingsford 2015). Using this figure, the number of briquettes was calculated for each county and divided by 30 to get the total weight of meat cooked with charcoal per county.

The gas and electric grill meat totals were estimated using some HPBA statistics. Their 2011 State of the Barbecue Industry Report estimated that households with charcoal grills cook about 27 times per year. Those with gas grills cook about 45 times per year (HPBA 2011). The later reports do not have this information so DEQ assumed it remained the same. The HPBA 5-year average sales figures indicate that about 41% of the grills sold were charcoal grills, and the other 59% are gas/electric grills (HPBA 2015). Since the number of grilling events for charcoal grills is 27 compared to 45 grilling events for gas/electric grills, and only 41% of grilling households have charcoal grills, estimating the amount of meat cooked by the other methods is more complicated.

There were about 2,878 tons of meats cooked in Idaho from charcoal grilling. The calculation of total meat cooked in Idaho from all the grilling is as follows:

Gas/electric meat cooked (the unknown) / charcoal meat cooked = (gas/electric grilling events * the percent of gas/electric grills) / (charcoal grilling events * the percent of charcoal grills) * (total charcoal meat cooked in Idaho) + total charcoal meat cooked in Idaho.

Total meat grilled / 2,878 = (45*59%) / (27*41%) * 2878 + 2878 = 9,780 tons of meat cooked from all barbecue methods in Idaho (Table 15).

Table 15. 2013 meat grilling calculations for Idaho.

Meat Grilling Data needed for Calculations	Calculations
Total Idaho 1-4 Unit Occupied Housing Units (OHU) 2013	480,742
Total United States 1-4 Unit Occupied Housing Units in 2013	87,522,478
Total United States charcoal sales from HPBA (TON) 2013	890,910
Total Idaho charcoal sales (TON = Idaho 1-4 Unit OHU / US 1-4 Unit OHU * Charcoal Sales.	4,894
Total Idaho charcoal sales (lb = TON Idaho Charcoal Sales * 2000)	9,787,151
General Rule for Charcoal BBQ: 30 briquettes/lb of meat	30
Kingsford charcoal weight per briquette in ounces	0.9068945
Equals 17.6426 briquettes/lb of charcoal (= 16 oz per lb / Kingsford oz per briquette	17.6426
Number briquettes used in Idaho (= briquettes/lb charcoal * lb total ID charcoal sales	172,671,038
Pounds of meat cooked with charcoal in Idaho (briquettes used in ID / 30 briquettes/lb of meat	5,755,701
Tons of meat cooked with Charcoal in Idaho (= lb of meat cooked in ID / 2000)	2,878
Percent of grillers using Charcoal Grills (rounded, from HPBA)	41%
Avg Number of annual events using Charcoal Grills (HPBA)	27
Avg Number of annual events with Gas/Electric Grills (HPBA)	45
Tons of meat cooked in Idaho via gas/electric grills (= (45 avg annual events gas /electric grills * 59% grillers using gas/electric) / 27 avg annual events charcoal grills * 41% grillers using charcoal) * 2878 tons of meat cooked with charcoal in Idaho	6,902.16
Total tons meat cooked in Idaho (gas/electric grilled meat + charcoal grilled meat)	9,780.01

2.1.7.2 Residential Charcoal Grilling Emission Factors

EPA developed the criteria emission factors used to estimate charcoal grilling emissions in “Emissions from Street Vendor Cooking Devices.” This same report indicates that most of the PM emissions come from the cooking of meat (EPA June 1999). Idaho used averages from Table E-2 of that report which summarizes the g/kg emissions per weight of both charcoal and meat.

Emission calculations are based on the activity data of tons of meat cooked per county multiplied by the g/kg of the PM meat emissions factor converted to lb/ton (9.21 g/kg = 18.42 lb/ton PM₁₀).

The calculation for Shoshone County (Table 16) is: Shoshone County 1-4 unit households in 2013 (4,667) / Idaho 1-4 unit households (481,157) * total meat cooked in Idaho (9,780.01 from Table 15) = 94.85 tons of meat cooked in Shoshone County.

Table 16. Calculations for meat cooked in Shoshone County.

Shoshone County 1-4 unit HHs	/ Idaho 1-4 unit HHs	% for Shoshone County	* Total Meat Cooked in Idaho (Tons)	Meat Cooked in Shoshone County (Tons)
4,667	481,157	0.96995%	9,780.01	94.85

DEQ apportioned Shoshone County emissions from residential charcoal grilling to the PM₁₀ NAA using the number of 1-4 unit households in Pinehurst City (US Census) (667) multiplied by 96% (Table 1) to get the occupied 1-4 unit households (640). Then, since Pinehurst City is not as large as the PM₁₀ NAA, this number was grown by using the same ratio of occupied households in the PM₁₀ NAA to Pinehurst City (882/811) times 640 gives us 696 occupied 1-4 unit households in the PM₁₀ NAA. The 94.85 tons of meat cooked in Shoshone County can be

apportioned based on 1-4 unit households using 696 PM₁₀ NAA 1-4 unit occupied households / 4,667 Shoshone County 1-4 unit occupied households * 94.85 tons of meat cooked in Shoshone County = 14.148 tons of meat cooked in the PM₁₀ NAA (Table 17).

Table 17. Calculations for meat cooked in PM₁₀ NAA.

PM ₁₀ NAA 1-4 Unit HHs	/ Shoshone County 1-4 Unit HHs	% for PM ₁₀ NAA	* Meat Cooked in Shoshone County (Tons)	Tons Meat Cooked in PM ₁₀ NAA
696	4,667	14.91%	94.85	14.148

The converted g/kg emission factor for PM₁₀ is 18.42 lbPM₁₀/ton of meat cooked. PM₁₀ emissions in the PM₁₀ NAA = 14.148 tons meat cooked (Table 17)* 18.42 lb PM₁₀/ton of meat cooked = 260.6 lbs PM₁₀ emissions / 2000 to convert to tons = 0.1303 TPY PM₁₀ (Table 18).

Table 18. PM₁₀ emissions calculations for PM₁₀ NAA.

Tons Meat Cooked in PM ₁₀ NAA	* PM ₁₀ EF lb/ton meat cooked	PM ₁₀ NAA lbs PM ₁₀ emissions	/2000 to convert to tons	PM ₁₀ NAA PM ₁₀ TPY emissions
14.148	18.42	260.6	2000	0.1303

2.1.8 Industrial Combustion, and Commercial/Institutional Combustion

Industrial and commercial/institutional fuel combustion emissions were computed for the following fuel types: coal, distillate oil, residual oil, natural gas, liquefied petroleum gas (LPG), kerosene, and wood. Not all of these types of fuel combustion exist in the PM₁₀ NAA or Shoshone County. Motor gasoline is not inventoried as a nonpoint source because it is expected that gasoline combustion in this sector is included in the nonroad inventory.

Idaho developed state fuel consumption estimates, allocated these to the county-level, and then multiplied the resulting Shoshone county-level consumption estimates by appropriate emissions factors before allocating them to the PM₁₀ NAA. Idaho's total state-level industrial sector energy consumption data are available from the Energy Information Administration (EIA)'s State Energy Data System (SEDS) (EIA 2013).

The industrial fuel combustion and commercial/institutional fuel combustion categories were estimated based on the number of employees in the appropriate North American Industry Classification System (NAICS) sector from the United States Census Bureau County Business Patterns. The Pinehurst PM₁₀ NAA employee data were gathered from 2013 5-year Pinehurst City County Business Patterns data. The PM₁₀ NAA is larger than Pinehurst City so the employee data for Pinehurst City was grown by using the U.S. Census Bureau 5-year estimate of 811 occupied households for Pinehurst City for 2013 (US Census 2013b) and the 882 estimated 2013 PM₁₀ NAA occupied households (Table 1). This ratio (882/811) was then applied to the Pinehurst City number of industrial and commercial/institutional employees to get an estimated total for each category in the PM₁₀ NAA. The PM₁₀ NAA number of employees was divided by the total number of employees in the appropriate category (industrial or commercial) for Shoshone County to apportion the fuel combustion emissions.

Commercial sector employees in Pinehurst City (554) x (882 PM₁₀ NAA occupied households/811 Pinehurst City occupied households) = 603 (rounded) commercial employees in the PM₁₀ NAA. Industrial sector employees in Pinehurst City (55) x (882 PM₁₀ NAA occupied households/811 Pinehurst City occupied households) = 60 (rounded) industrial employees in the PM₁₀ NAA.

The Pinehurst PM₁₀ NAA had 60 employees in the industrial sector compared to 303 employees for Shoshone County. The Shoshone county emissions were multiplied by 60/303 to apportion those emissions to the NAA (Table 3). The commercial/institutional sector for the PM₁₀ NAA has 603 employees compared to 3,216 employees for Shoshone County. DEQ used the ratio 603/3,216 from this sector to apportion the PM₁₀ NAA emissions from Shoshone County emissions (Table 19).

DEQ examined source categories of industrial and commercial fuel combustion from Shoshone County. Emissions from industrial and commercial source categories not present within the PM₁₀ NAA (such as industrial wood boilers) were subtracted from county level totals before apportionment (Table 19 and Table 20). Fuels not in use within the PM₁₀ NAA were also excluded from the commercial and industrial county level data. Idaho used PM₁₀ emission factors from EPA's 2014 ICI tool v1.2.

Table 19. 2013 commercial combustion by fuel type.

Commercial Combustion (UOM)	State Adj. Fuel Use	Emp Ratio (3066/506,763)	Shoshone Fuel Use	PM ₁₀ EF lb/UOM	Shoshone Emissions TPY	PM ₁₀ Emp Ratio (603/3216)	PM ₁₀ NAA TPY
Natural Gas (MMCF)	16,383	0.00605	99.12	0.52	0.025771	0.1875	0.004832
Wood (E6BTU)	235,890	0.00605	1,427.17	0.517	0.368924	0.1875	0.069173
LPG (E3GAL)	9,746	0.00605	58.96	0.05	0.001474	0.1875	0.000276
Kerosene (E3GAL)	10	0.00605	0.0605	2.34	0.000071	0.1875	0.000013
Distillate Oil Boilers (E3GAL)	644	0.00605	3.8955	2.38	0.004636	0.1875	0.000869
Distillate Oil ICE (E3GAL)	34	0.00605	0.20503	43.5	0.004459	0.1875	0.000836
Bituminous Coal (TON)	2,344	0.00605	14.18	13.04	0.092464	0.1875	0.017337
Total					0.497799		0.093

Table 20. 2013 industrial combustion by fuel type.

Industrial Combustion (UOM)	State Adj Fuel Use	Emp Multiplier (varies)	Shoshone Fuel Use	PM ₁₀ EF lb/UOM	Shoshone Emissions TPY	PM ₁₀ Emp Multiplier (60/303)	PM ₁₀ NAA TPY
Natural Gas (MMCF)	5,660	0.00636	36.0	0.54	0.009726	0.1980198	0.00193
LPG (E3GAL)	2,208	0.00534	11.8	0.05	0.000295	0.1980198	0.00006
Distillate Oil Boilers (E3GAL)	3,510	0.00534	18.8	2.3	0.021565	0.1980198	0.00427
Distillate Oil ICE (E3GAL)	1,170	0.00534	6.3	43.5	0.135956	0.1980198	0.02692
Total					11.03		0.033

2.1.9 Vehicle and Structure Fires

Structural fires include residential (a structure for sleeping or living) and other structural fires. Other structures include but are not limited to, buildings, open platforms, bridges, roof assemblies, tents, air-supported structures or grandstands. Mobile fires include all types of vehicle fires.

The activity data for Idaho structural and mobile fires was obtained from the 2013 “Fire in Idaho Report” done by the Idaho Department of Insurance every year (Idaho 2013). This report lists the number of fire incidents per county and provides the total number of fire incidents statewide by type of fires. These statewide percentages were applied to each county for structural and mobile fires (30% structural fires and 15% for mobile fires).

To properly use the activity data on the numbers of fires per county and the emissions factors in lb/ton burned, it was necessary to estimate fuel loading. Idaho used fuel loading from the Emission Inventory Improvement Program (EIIP) for both categories: 1.15 tons burned per structure fire, and 500 pounds per vehicle fire (EPA April 2001, EPA May 2000). County-level emissions were then calculated by multiplying the calculated structural and vehicle fire tons burned per county by the lb/ton emissions factors from the EIIP.

There were 82 fires reported for Shoshone County. Structural fires represented 30% of those reported, or 24. Mobile property fires were 15%, or 12. These two categories were each multiplied by the fuel loading factors of 1.15 tons burned per structure fire and 0.25 tons per vehicle fire ($24 * 1.15 = 27.92$ tons structures burned and $12 * 0.25 = 3.02$ tons of vehicles burned) They were then multiplied by the emissions factor and divided by 2000 to get tons per year of PM₁₀ emissions ($27.92 * 10.8 \text{ lb/ton burned} / 2000 = 0.15076$ TPY PM₁₀ from structural fires; and $3.02 * 100 \text{ lb/ton burned} / 2000 = 0.15113$ TPY PM₁₀ from vehicle fires (Table 21).

Table 21. Shoshone County PM₁₀ structural and vehicle fire calculations.

Fire Type	Fires in Shoshone County	% Per Type of Fire	# Fires Per Fire Type	Tons Fuel Load per Fire Type	Tons Fuel burned	EF lb/ton Fuel Burned	PM ₁₀ TPY Shoshone County
Structural	82	30%	24	1.15	27.92	10.8	0.15076
Vehicle	82	15%	12	0.25	3.02	100	0.15113

DEQ apportioned Shoshone County PM₁₀ emissions from structural and vehicle fire to the PM₁₀ NAA using the ratio of occupied households in Shoshone County to those in the PM₁₀ NAA (822/5749) (Table 22).

Table 22. PM₁₀ NAA structural and vehicle PM₁₀ emissions calculations.

Fire Type	PM ₁₀ TPY Shoshone County	Occupied HH ratio (822/5749)	PM ₁₀ TPY PM ₁₀ NAA
Structural	0.15076	0.14298	0.02156
Vehicle	0.15113	0.14298	0.02161
Total			0.0432

2.1.10 Residential Heating (no RWC)

Residential fuel combustion includes a number of heating fuels (except wood, which is calculated as part of RWC). Residential natural gas combustion is natural gas that is burned to heat residential housing as well as in grills, hot water heaters, and dryers. Residential liquefied petroleum gas (LPG) combustion is liquefied propane gas that is burned for space heating, water heating, and cooking. Residential kerosene combustion is kerosene that is burned in residential housing for space heating, water heating, cooking, and running a wide variety of other equipment. Residential distillate oil combustion is oil that is burned for heating in residential housing.

The general approach to calculating emissions was to allocate statewide residential fuel consumption from the EIA to the county level using the methods described below (EIA 2013). County level fuel consumption was multiplied by the fuel specific emission factors to calculate emissions (Table 23). Idaho used 2011 EPA emissions factors to calculate emissions (EPA 2011b).

State-level natural gas consumption was allocated to each county using the US Census Bureau's 2013 Census American Community Survey (US Census 2013c). These data include the number of housing units using a specific type of fuel for residential heating. Statewide fuel consumption was allocated to each county using the ratio of the number of houses burning each type of fuel in each county to the total number of houses burning each type of fuel in the state.

Table 23. 2013 PM₁₀ residential fuel combustion calculations.

Residential Combustion (UOM)	ID Residential Fuel Use	Shoshone County HH Portion	Shoshone County Fuel Use	PM ₁₀ EF lb/UOM	Shoshone County PM ₁₀ TPY	PM ₁₀ HH Ratio (822/5749)	PM ₁₀ NAA TPY
Natural Gas (MMCF)	27,370	1.004%	274.9	0.52	0.071464	0.1534	0.010964
LPG (E3GAL)	53,970	0.276%	149.2	0.0493	0.003679	0.1534	0.000564
Kerosene (E3GAL)	18	1.149%	0.2	2.295	0.000237	0.1534	0.000036

Residential Combustion (UOM)	ID Residential Fuel Use	Shoshone County HH Portion	Shoshone County Fuel Use	PM ₁₀ EF lb/UOM	Shoshone County PM ₁₀ TPY	PM ₁₀ HH Ratio (882/5749)	PM ₁₀ NAA TPY
Distillate Oil (E3GAL)	6,004	1.149%	69.0	2.38	0.082075	0.1534	0.012592
Total					0.16		0.0242

2.1.11 Wildfire and Prescribed Fire

Prescribed burning of forest lands and forest slash waste is known to cause elevated PM₁₀ concentrations at the Pinehurst monitor during the fall, peaking around late October when the Idaho Department of Lands permit period ends. DEQ used all available prescribed burning data sets for the 2013 base year to ensure that the spatial distribution of all types of prescribed burns is well characterized. No prescribed fires occurred in the NAA.

2.2 Nonpoint Emissions Summary

Table 24 summarizes the total tons per year of nonpoint emissions for 2013 in the Pinehurst PM₁₀ NAA. It also includes a typical winter's day PM₁₀ emissions. A December monthly temporal value was applied to the annual TPY emissions and divided by 31 * 2000 to get a lb/day value. Note that paved road dust emissions, though calculated in this section as it is typically considered a nonpoint source, is summarized under the onroad emission totals.

Table 24. Pinehurst PM₁₀ NAA 2013 PM₁₀ annual and average winter day emissions by category.

Emissions Category	PM ₁₀ TPY	PM ₁₀ lbs/ Winter Day
RWC	17.748	212.05
Construction - Road	7.009	0.00
Unpaved Road Dust	4.703	0.00
Residential Open Burning	1.946	2.09
Res Outdoor Rec Burning	0.720	1.55
Commercial Cooking	0.467	2.51
Charcoal Grilling	0.130	0.43
Construction - Comm/Res	0.111	0.04
Commercial Combustion	0.094	0.73
Vehicle & Structure Fires	0.043	0.23
Industrial Combustion	0.033	0.18
Residential Heating (No RWC)	0.024	0.29
	33.029	220.109

3 Point Sources

Point source emissions are from larger sources located at fixed, stationary locations. Most major or minor point sources are required to get a permit. There are no permitted point sources in the NAA classified as either “major” or “minor” stationary sources documented in this LMP.

4 Nonroad Sources

The Mobile Vehicle Emissions Simulator (MOVES2014) is the approved method for calculating nonroad emissions. Idaho has not yet developed input files for the nonroad portion of the model; therefore the latest version of the model was run for Shoshone County for 2013 using MOVES defaults. All months and days were selected for 2013 and PM₁₀ emissions were reported by Source Classification Code (SCC) for all vehicle/equipment/fuel categories.

Idaho exported the output from the post-processing “Inventory_by_Sector_SCC_Pollutant.sql” script to Microsoft Excel for further processing. The emissions were reported in tons per day by month and day (weekday/weekend) in the MOVES database. The annual emissions were calculated from the tons per day data. The formula was: emissions in TPD * (dayID (for weekday or weekend) / 7 days in a week) * 31 days for each month = TPY. Then this monthly data was summarized by SCC to combine all the days and months of data before again summarizing it by emissions category to get annual category totals for Shoshone County.

The PM₁₀ emissions were then assigned to the PM₁₀ NAA using the occupied household ratio of 882/5749. The resulting data were refined and several of the categories were dropped from the nonroad portion of the PM₁₀ NAA as those activities do not take place there. The categories dropped were pleasure craft (boating), railroad equipment, logging equipment, construction and mining equipment, airport ground support equipment, and agricultural equipment. The recreational equipment was refined further by dropping snowmobiles.

There are no calculations to show for this since all calculations are done by the model.

Table 25 summarizes the total emissions for the nonroad categories in the Pinehurst PM₁₀ NAA. The PM₁₀ emissions are shown in descending order.

Table 25. 2013 Pinehurst nonroad PM₁₀ NAA category summary.

Nonroad Categories	PM ₁₀ TPY
Recreational Equipment	0.627
Lawn and Garden Equipment	0.093
Industrial Equipment	0.040
Commercial Equipment	0.031
Total	0.793

5 On-Road (Mobile) Sources

The on-road mobile source inventory completed for the 2014 PEI used the MOVES2014 model to determine emissions estimates for each county in Idaho. DEQ gathered data from multiple sources and prepared input data for all 44 counties.

MOVES2014 was developed to work with MySQL database management software. To operate the MOVES2014 model at the county-level, DEQ developed an input database using primarily local inputs, including the following:

- VMT with respect to annual, monthly, daily, and hourly variation and road type
- Source-related inputs including source type population and age distribution
- Average speed distribution on various roadways
- Fuel-related inputs including fuel supply, fuel formulation, and alternative fuels
- Average hourly temperatures and relative humidity for each month
- Inspection and maintenance programs

After adjusting the inputs for modeling year 2013, MOVES2014 was used to develop monthly county-level emissions specifically for 2013. The emissions were allocated to the Pinehurst PM₁₀ NAA based on link-level VMT for freeways and lane lengths for other roadways. A description of how the MOVES inputs were developed is provided below.

5.1 Methodology for Developing MOVES2014 Input Database

To operate the MOVES2014 model at the county-level, DEQ developed an input database using primarily local inputs at a State Implementation Plan (SIP) level to ensure consistency between the PEI on-road inventory and other on-road inventories that Idaho must develop for SIP actions, for Metropolitan Planning Organizations, conformity determinations, and to be better prepared for SIP projects (EPA 2015d).

The required MOVES inputs, grouped by common data source are shown in Figure 2. For example, “VMT Related” inputs such as road type distribution and monthly, daily, and hourly traffic profiles require detailed information from ITD traffic counts and VMT statistics to characterize the VMT within the modeling domain, while the “Source Related” inputs are derived primarily from the statewide vehicle registration database.

County-level input files were prepared for each category, using a combination of (primarily) local data and selected MOVES national defaults in those cases where local data are not available or are suspected to be less reliable.

Group	MOVES INPUTS	Note
VMT Related	HPMSVTypeYear	Annual VMT
	RoadtypeDistribution	VMT distribution by roadway type
	MonthVMTFraction	VMT distribution by month
	DayVMTFraction	VMT distribution by weekday/weekend
	HourVMTFraction	VMT distribution by hour
Source Related	SourceTypeYear	Vehicle population
	AgeDistribution	Vehicle population distribution by age
	AVFT (Alternative Vehicle Fuels and Technologies)	Fraction of VMT by fuel/technologies (vehicle information was used as surrogate)
VHT Related	AverageSpeedDistribution	VHT distribution by hourly average speed
	RampFraction	VHT fraction on ramp
Fuel Related	FuelSupply	
	FuelFormulation	
	FuelUsageFraction	For vehicle can use different fuel
Meteorology	ZoneMonthHour	Hourly temperature and relative humidity
IM Program	IMCoverage	

Figure 2. MOVES input files and groups.

5.1.1 Vehicle Miles Traveled-Related Inputs

VMT-related inputs describe the distance traveled on different roadway types by the various source types (vehicles). VMT-related inputs include total annual VMT and VMT distribution with respect to monthly, daily, and hourly variation and road type. VMT-related inputs were developed from data provided by ITD (ITD 2015a,b,c) including HPMS statewide annual VMT data, the Idaho roadway link-level annual average daily traffic data set, and the ATR data set with vehicle length counts. Data for all ATR sites in Idaho from 2013 to 2014 were obtained from ITD and screened to obtain complete data sets so that monthly, weekend/weekday, and hourly profiles were not biased by missing data. ATRs used in the analysis were aggregated to the North Idaho county group to ensure adequate statistics while still capturing regional differences in traffic patterns. This step was necessary because for most counties, not enough ATRs exist for all roadway types to provide stable county-level profiles. In some cases, the MOVES default data set was used as supplemental data source.

5.1.1.1 Annual VMT

Annual VMT represents the yearly total VMT for the counties in the domain.

5.1.1.1.1 North Idaho Group

The HPMS-based annual VMT by Federal Highway Administration (FHWA) roadway type was generated by using the HPMS statewide data set, ITD link-level traffic count data set and MOVES default data (for heavy duty vehicles). The annual VMT by FHWA roadway type was further allocated to annual VMT by vehicle type using ITD ATR data and the statewide vehicle classification data provided by ITD.

5.1.1.2 *Monthly, Daily, Hourly, and Roadway Type VMT Distribution*

Temporal distribution information derived from the ATR data set was used to split the source type annual VMT into monthly, day of week, and hourly VMT profiles. The road type distribution describes the fraction of fleet miles driven on the each of the four MOVES roadway types (rural restricted, rural unrestricted, urban restricted, and urban unrestricted) within the modeling domain.

Temporal profiles and road type distribution were derived from ATR data and 2014 annual VMT by FHWA roadway type. ATR data contain hourly vehicle counts for each length bin. A crosswalk from length bins to MOVES vehicle types and from FHWA roadway type to MOVES roadway types were developed. For each ATR site, only data for a complete year was processed to ensure profiles were not biased by incomplete data. Hourly, weekday/weekend, and monthly statistics were calculated for each vehicle type for each ATR with a complete data set. Finally, ATR sites were grouped based on MOVES roadway types, and each site was weighted equally in constructing the final temporal profiles and road type distribution. This process was completed separately for each county group. With the population trend almost flat (within the margin of error) and a very small 1.53% freeway VMT increase for one year, the change in total VMT and resulting emissions was insignificant compared to 2013 data (Table 26).

Table 26. 2013–2014 VMT comparison for Shoshone County.

RoadWay	2014 NEI VMT	Ratio	Growth Rate	2014	2013	Difference
Freeway	129,370,234	0.06	0.0166	7,762,214	7,635,465	1.66%
Other	95,589,026	0.007	0	669,123	669,123	0.00%
Total				8,431,337	8,304,588	1.53%

5.1.2 Source-Related Inputs

This group of inputs includes source type population, age distribution, and Alternative Vehicle Fuels and Technology (AVFT) (technically it is fuel related but DEQ used source information as surrogate to develop the input). Source type-related inputs characterize the vehicles in the modeling domain and are compiled using a variety of data sources. The fleet mix or source type population and the age distributions are key components of on-road mobile source emissions modeling. The majority of vehicles are well characterized by the Department of Motor Vehicle registration database provided by ITD (2015d). The database is screened to ensure that only vehicles with current registrations are included, and vehicle types and ages are obtained from the Vehicle Identification Number (VIN) to avoid data entry errors that may occur in other manually entered fields.

5.1.2.1 *Source Type Population*

The source type population input file describes the types and numbers of vehicles that make up the fleet.

Direct population data were obtained for refuse trucks from service providers via phone and e-mail surveys. School bus data were obtained from the Idaho State Department of Education (SDE 2015). Idaho statewide bus fleet database from ITD combined with Idaho National

Laboratory bus fleet database are used to determine vehicle population for transit and intercity bus (ITD 2015e). For motorcycle, passenger car, passenger truck, light commercial truck, and motorhome source types, VIN-decoded registration data was used to determine vehicle populations (DataOne 2015).

Many of the heavy duty truck source vehicles are registered in other states so local registration data are not complete and the heavy duty truck populations were derived from MOVES national defaults. For single and combination trucks, a factor was used to estimate the county-level source type populations using local activity data, MOVES national default activity data, and MOVES national default source type populations as shown in Equation 3.

$$Population_{Local}^{SourceType} = VMT_{Local}^{SourceType} \left(\frac{Population_{NatlDefault}^{SourceType}}{VMT_{NatlDefault}^{SourceType}} \right)$$

Equation 3. Estimate of vehicle population for source types without local data available.

5.1.2.2 **Age Distribution**

Age distributions characterize the age profile of each vehicle source type. Age distributions were developed for each county using VIN-decoded vehicle registration data, refuse truck data from service providers, transit and intercity bus fleet data from ITD and INL, school bus fleet data from the Idaho State Department of Education, and MOVES default for heavy duty vehicle source types.

5.1.2.3 **Alternative Vehicle Fuels and Technology**

AVFT input files in MOVES allow the user to assign source type activity by model year to vehicles with different fuel and/ or engine technologies. All counties were modeled using a custom AVFT input file derived from the same sources used for source population and age distribution. National default data were used when no local data were available.

5.1.3 **Vehicle Hours Traveled-Related Inputs**

Vehicle hours traveled (VHT)-related inputs characterize the time and average speeds that vehicles spend travelling on specific road types.

5.1.3.1 **Ramp Fractions**

Ramp fraction defines the portion of VHT that occurs on entrance and exit ramps associated with restricted access roadways (interstates). Ramps are treated separately from the remainder of the freeway VHT because the sudden acceleration and deceleration that occurs on ramps results in significantly higher emissions. Ramp fractions for rural freeways were set to 1% based on information from Utah Division of Air Quality (Rick McKeague personal communication, 2012). The MOVES 8% default ramp fraction was used for the urban interstate.

5.1.3.2 **Average Speed**

The average speed distribution allocates the VHT for each source type (vehicle type) to 16 speed bins ranging from 0 to ≥ 72.5 mph. The average speed includes start/stop and turning events as well as congestion on busy roadways, and as a result, the average speeds are typically lower than the free-flow speed and speed limit.

5.1.3.2.1 **North Idaho Group**

The average speed distribution was based on the ITD link-level data and the ATR temporal profiles. The modified Bureau of Public Roads (BPR) method for average speed estimates was used, as recommended by EPA for rural areas where travel demand models are unavailable (EPA 1999).

The average speed on a roadway is primarily a function of the volume of traffic per lane, and the capacity of that lane. The recommended method for determining average speed for MOVES inputs is the modified BPR curve method (ICF Consulting 2004). The BPR relationship is shown in Equation 4.

$$s = \frac{s_f}{1 + a(v/c)^b} \quad \text{Equation 4. BPR method.}$$

Where:

s = Predicted average speed

s_f = Free-flow speed

v = Volume

c = Practical capacity

a = 0.05 for urban arterials; 0.20 for all other facilities

b = 10 (ICF Consulting 2004).

Volume (v) was calculated for each hour by multiplying annual average daily traffic counts for the ITD segments by hourly temporal profile fractions from ATR analysis. Practical capacity (c) and free-flow speed (s_f) established by the Transportation Research Board in 1997 were obtained from look-up tables provided in ICF Consulting (2004). Capacity was calculated as number of lanes multiplied by 1,750 for interstates and 550 for all other facility types.

Average speeds for each segment were estimated for each hour for both weekdays and weekend days. These values were then aggregated by roadway type to produce the average speed distributions representative of the roadways throughout the county group in MOBILE6 formats.

Finally, the tool “Average Speed Converter MOBILE6 (XLS)” developed by EPA was used to convert MOBILE6-formatted speed distributions into the MOVES input format.

5.1.4 Fuel-Related Inputs

5.1.4.1 *Fuel Supply*

MOVES national default fuel supplies were judged to be reasonable, and alternative local data are not available. Therefore, national default fuel supplies were used for all source types.

5.1.4.2 *Fuel Formulation*

MOVES national default fuel formulations were judged to be reasonable, and alternative local data are not available. Therefore, national default fuel formulations were used for all source types.

5.1.4.3 *Fuel Usage Fraction*

The fuel usage fraction defines the frequency at which E-85 capable (flex fuel) vehicles use E-85 versus conventional (E10) gasoline. Because E-85 fuel is not available in Idaho, the input was constructed with all E-85 capable vehicles using conventional (E10) gasoline.

5.1.5 Meteorology

The meteorology inputs provide the average hourly temperature and relative humidity for each month for each county. Average hourly temperature and relative humidity data for each month from a representative weather station for each county were used. Stations were selected from those available from MESOWEST (2015b) to represent the most populated areas in each county where the majority of the vehicle travel occurs. This station selection avoids a bias that may be present in county-wide averages toward the cooler temperatures at higher elevation mountainous areas where there is very little traffic. MESOWEST screens all data for quality based on out-of-range limits. In addition, DEQ evaluated 100% of the data for consistency with nearby sites and dropped stations with unusual behavior or regional inconsistencies.

5.2 Quality Assurance and Quality Control

To ensure the highest quality emissions estimates, a number of different quality assurance/quality control steps were implemented while developing the mobile source EI. In general, each input and output was checked for internal consistency, compared with national defaults, and assessed for reasonableness. These steps are outlined below:

- Quality assurance checks were naturally embedded in the model input development process by the data generator.
- MOVES model inputs, outputs, and message files were checked by the data generator.
- Each set of inputs was checked by a team member not directly involved with input development. This review evaluated reasonableness with respect to expected behavior and compared the MOVES default inputs (which would be the alternative if any local inputs were determined to be unrealistic).
- MOVES model outputs were also compared with inputs such as VMT and source population to ensure consistency.

- The emissions generated were compared with the 2011 NEI to check the reasonableness of the results.

5.3 Emissions Summary

The Shoshone County emissions were allocated to the Pinehurst PM₁₀ NAA based on link-level VMT for freeways, lane lengths for other roadways, and off network or trip starts (Table 27). A ratio was calculated for each category by comparing Shoshone County data to PM₁₀ NAA data.

Table 27. Onroad ratio calculations for the PM₁₀ NAA emissions allocation.

RoadWay	Comparison Data	PM ₁₀ NAA	Shoshone County	PM ₁₀ NAA Ratio
Freeway	2014 VMT from ITD (miles)	20,588 mi/day	348,333 mi/day	0.05910
Other	Lane Length (length*# lanes)	53 mi.	7815 mi.	0.00678183
Offnetwork	TripStarts	3627.938	31527.995	0.11507037

The above ratios (Table 27) were then applied to the MOVES calculated Shoshone County PM₁₀ emissions to allocate emissions to the PM₁₀ NAA. Paved road dust was calculated in the nonpoint category (Table 9) and only its total is shown here. Table 28 summarizes the tons per year of on-road emissions allocated to the Pinehurst PM₁₀ NAA.

Table 28. 2013 On-road emissions summary by category (TPY).

Emissions Categories	Shoshone County PM ₁₀	Ratio	PM ₁₀ NAA PM ₁₀ TPY
Paved Road Dust			4.212
Freeway	15.50	0.059	0.916
Other	8.36	0.007	0.057
Off Network	7.55	0.115	0.868
Total			6.053

6 Pinehurst PM₁₀ Emissions Summary

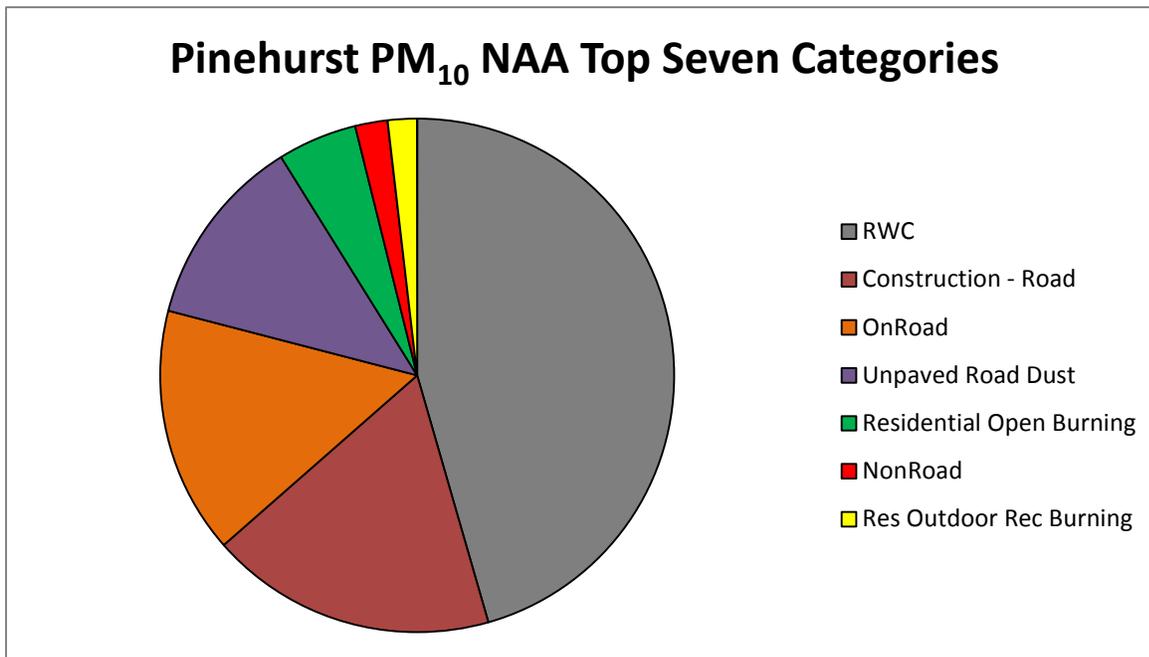
In the previous sections, contributions from the various sources of pollution were shown. Table 29 summarizes the contributions from nonpoint, point, nonroad, and on-road sources in the Pinehurst PM₁₀ NAA.

The total monthly PM₁₀ emissions were determined to be highest in December. Typical winter day emissions were calculated from December temporal files and divided by 31 to get estimates for a typical winter day. Unpaved road dust and construction are insignificant to nonexistent in December so their values were zeroed out. The remaining emissions categories had their own temporal values for December so they were applied to get the average winter day. Paved road dust is included in the on-road estimates.

Table 29. Pinehurst NAA PM₁₀ contributing sources (TPY).

Emissions Category	PM ₁₀ TPY	PM ₁₀ lb/Winter Day
RWC	17.748	212.049
Construction - Road	7.009	0.000
OnRoad (and Paved Road Dust)	6.053	36.475
Unpaved Road Dust	4.703	0.000
Residential Open Burning	1.946	2.092
NonRoad	0.793	1.468
Res Outdoor Rec Burning	0.720	1.549
Commercial Cooking	0.467	2.508
Charcoal Grilling	0.130	0.434
Construction - Comm/Res	0.111	0.043
Commercial Combustion	0.094	0.733
Vehicle & Structure Fires	0.043	0.232
Industrial Combustion	0.033	0.178
Residential Heating (No RWC)	0.024	0.290
Total Emissions	39.874	258.052

The two largest annual categories are RWC and road construction. Figure 3 shows the top seven annual categories contributing to PM₁₀ pollution in the Pinehurst PM₁₀ NAA.

**Figure 3. Pinehurst PM₁₀ NAA top seven annual contribution categories.**

The two largest categories for a typical winter day are from RWC and on-road emissions. RWC is more than 83% of the PM₁₀ emissions on a typical winter day (Figure 4).

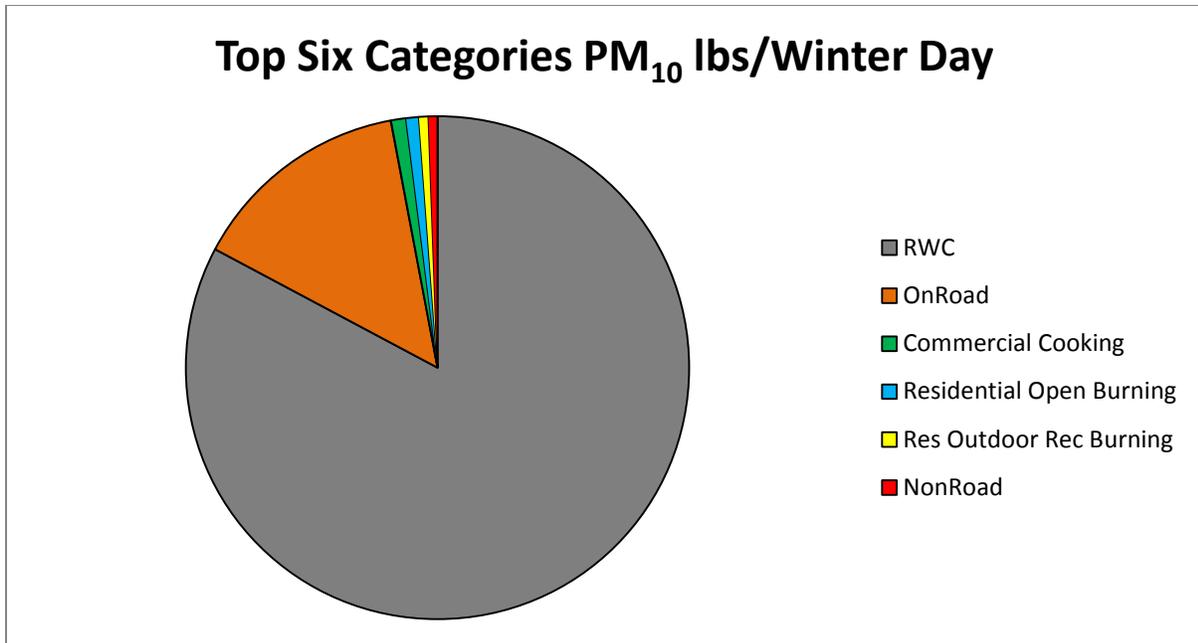


Figure 4. Pinehurst PM₁₀ NAA top six average winter day contribution categories.

7 Comparability Analysis

The 2013 Pinehurst PM₁₀ LMP was compared to the 1992 PM₁₀ NAA SIP EI. Notable differences in the inventories affected the comparison: (1) the original SIP EI was for 1991 while the LMP EI is for 2013; (2) some differences existed in sources inventoried or source groupings; (3) differences existed in activity data sources; and (4) the methods of calculating source data were different in places.

To compare the two inventories, the sources the inventories had in common were examined. A brief explanation is given for discrepancies involving sources in the two inventories.

7.1 Residential Heating

The SIP had broken out residential heating into several categories based on fuel type; coal, natural gas, heating oil, and wood. The LMP combined these into two categories: RWC, and non-RWC. The non-RWC for the LMP used updated emissions factors and the US Census Selected Housing Characteristics to determine the number of homes being heated with various types of fuel in Shoshone County. Then, data from the Energy Information Administration State Energy Data System were used to determine how much of each type of fuel was used in Idaho counties. This result was then applied to the PM₁₀ NAA from Shoshone County usage. The difference between the 1992 SIP and LMP is likely due to updated emissions factors and a different source of activity data.

The NAA RWC was based on a recent survey, as it was in the original SIP. These current survey results were used with current updated EPA emissions factors, and new woodstove combustion

estimates were calculated. The difference between the 1992 SIP and LMP is due to updated emissions factors, different methodology, and a larger percentage of cleaner burning woodstoves.

7.2 Building Construction

The large difference in building construction is due to new construction being almost nonexistent in the NAA in 2013. Only one home building permit was issued in 2013, and no commercial or other building permits were issued.

7.3 Road Construction

The rise in road construction is due to roads being rebuilt in the NAA beginning in 2013. More roads were under construction, resulting in the higher emissions reported in the 2013 LMP EI.

7.4 Railroad Locomotives

Locomotives emissions were not calculated for the 2013 LMP EI. Currently, no railroad lines exist in the NAA. The main line through the area as noted in the original SIP is now a bike path.

7.5 Aircraft

Aircraft emissions were not calculated for the 2013 LMP. The airport is not in the NAA, and most emissions occur outside the area and at altitudes that are insignificant to the NAA.

7.6 On-Road

The original SIP had fugitive road dust, tailpipe, and brake and tire wear emissions separated. The 2013 LMP has combined paved road dust, tailpipe, and brake and tire wear emissions into one category. These 2013 emissions for the NAA were calculated by county using the latest EPA-approved on-road model, MOVES. The Shoshone County data were assigned to the NAA based on the NAA fraction of freeway, other roadways, and idling/parking emissions as compared to Shoshone County. The difference in emissions is due to updated methodology and emissions factors.

7.7 Unpaved Road Dust

The LMP EI split the original fugitive road dust into paved road dust (reported under the on-road emissions) and unpaved road dust. The LMP EI used recent EPA methodology to assign fugitive unpaved road dust to the NAA. The difference between the original SIP road dust estimates and the LMP unpaved road dust estimates are due to updated methodology, emissions factors, and the paving of all the alley roads in the NAA.

7.8 Open Burning

The open burning emissions are not much different in the two emissions inventories. No wildfires or prescribed burning occurred in the NAA as was the case in the original SIP data. The LMP split the open burning into residential open burning (e.g., brush, grass, and weeds) and residential recreational burning. These two emission sources combined are slightly more than originally calculated, but the difference is not significant.

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Appendix C. City of Pinehurst Resolution 68 on Voluntary Residential Wood Burning Curtailment

RESOLUTION NO. 68

A RESOLUTION ADDRESSING RESIDENTIAL WOOD BURNING WHEN POOR AIR QUALITY DAYS ARE FORECAST BY THE IDAHO DIVISION OF ENVIRONMENTAL QUALITY

WHEREAS, Federal and State air quality standards for particulates (PM10) have been exceeded in the City of Pinehurst; and

WHEREAS, the health, safety and welfare of Pinehurst citizens are adversely affected by poor air quality; and

WHEREAS, the main source of these exceedences in Pinehurst is residential wood burning; and

WHEREAS, it is important for Pinehurst's citizens to take steps to improve air quality; and

WHEREAS, Pinehurst's citizens have shown that they are willing to voluntarily not burn wood on poor air quality days;

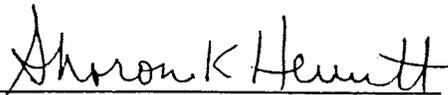
NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Pinehurst that when a poor air quality day is forecast by the Idaho Division of Environmental Quality, all citizens, except those who must rely on wood burning as their only source of heat, are requested not to burn wood until the poor air quality call has ended.

PASSED by the Council and APPROVED by the Mayor this 11th day of November, 1991.



MAYOR

ATTEST:



CITY CLERK

Appendix D. Public Participation and Public Comments

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO, }
County of Shoshone } ss.

Geri Hagler

_____ being first duly sworn
upon oath deposes and says:

1. I am now and at all times hereinafter mentioned was a citizen of the United States, resident of the State of Idaho, over the age of twenty-one years and not a party of the above entitled action.

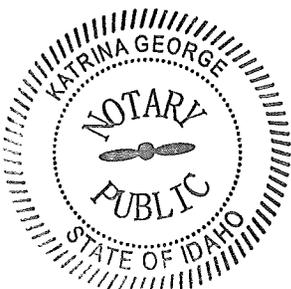
2. I am now and at all times hereinafter mentioned was the printer (principal clerk) of the "Shoshone News Press", a newspaper printed and published daily except Sunday and Monday in Kellogg, Shoshone County, Idaho, and having a general circulation in said county.

3. The Legal notice

_____ of which the annexed is a printed copy, was published in the regular Wednesday issue of said newspaper for 1 consecutive day commencing on the 5 day of July, 2017, and such publication was made as often during said period as said bi-weekly newspaper was regularly issued.

4. That said newspaper has been continuously and uninterruptedly published in said Shoshone County, during a period of more than seventy-eight consecutive weeks immediately prior to the first publication of said notice Geri Hagler.

On this 5 day of July in the year of 2017, before me, a Notary Public, personally appeared Geri Hagler, known or identified to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, declared that the statements therein are true, and acknowledged to me that he executed the same.



Katrina George

Notary Public for the State of Idaho
residing in Coeur d'Alene, Idaho

MY COMMISSION EXPIRES 8/29/17

NOTICE OF PUBLIC COMMENT PERIOD AND PUBLIC HEARING REGARDING THE BASE YEAR EMISSION INVENTORY FOR THE WEST SILVER VALLEY NONATTAINMENT AREA AND THE LIMITED MAINTENANCE PLAN AND REDESIGNATION REQUEST FOR THE PINEHURST AND PINEHURST EXPANSION PM10 NONATTAINMENT AREAS

PROPOSED ACTION: The Idaho Department of Environmental Quality (DEQ) is proposing to submit the base-year emission inventory for the West Silver Valley Nonattainment Area to the US Environmental Protection Agency (EPA) as required by 40 CFR 51.1008. The base year inventory is an estimate of actual emissions that occurred at the time the area was designated nonattainment. The West Silver Valley was designated nonattainment for the 2012 fine particulate (PM2.5) National Ambient Air Quality Standard (NAAQS) in April 2015. The nonattainment area includes the Cities of Pinehurst, Smelterville, Kellogg, and Wardner. In response to the nonattainment designation, Idaho began developing the required State Implementation Plan (SIP) for the area in 2015.

However, based on certified air quality monitoring data for 2014-2016, the area has attained the 2012 PM2.5 NAAQS with a design value (3-year average) of 11.98 µg/m³. To be in compliance with the NAAQS, the 3-year average must not exceed 12.0 µg/m³. In accordance with the Clean Data Policy in the PM2.5 Implementation Rule (40 CFR 51.1015), the West Silver Valley Nonattainment Area qualifies for a clean data determination. Under the clean data determination, most of the State Implementation Plan requirements are suspended as long as the area continues to attain the NAAQS. However, the base-year emission inventory requirement is still applicable.

DEQ is also proposing to submit to EPA the Limited Maintenance Plan and Redesignation Request for the Pinehurst and Pinehurst Expansion PM10 Nonattainment Areas. The intent of the submittal is to document that air quality in the area has attained the PM10 NAAQS and outline how the area intends to maintain compliance with the PM10 NAAQS for the next 10 years. The EPA designated Pinehurst and the Pinehurst Expansion Areas as moderate nonattainment areas for the PM10 NAAQS in 1990 and 1994 due to violations of the

PM10 NAAQS in the 1980s. In response to the nonattainment designation, DEQ developed a SIP which included various control measures to reduce the area's pollution. As a result of the implementation of these measures, there have been no measured violations of the PM10 NAAQS since 2001. On August 23, 2001, EPA published a finding that the two areas had attained the PM10 standard by their respective attainment dates. However, the areas remained designated as moderate nonattainment until DEQ met the Clean Air Act requirements for redesignations to attainment. DEQ is now seeking redesignation to attainment for PM10 for both nonattainment areas. As part of the redesignation request, DEQ is submitting a Limited Maintenance Plan (LMP) for PM10 pursuant with Clean Air Act §107(d)(3)(E).

PUBLIC COMMENT AND HEARING: The public comment period will last from July 5 to August 11, 2017. Comments, requests or comments regarding the public comment process should be directed to: Tanya Chin, Department of Environmental Quality, 1410 N. Hilton, Boise, ID 83706, tanya.chin@deq.idaho.gov, or www.deq.idaho.gov.

A public hearing will be held: August 11, 2017 at 5:30 pm PST
Pinehurst City Hall
106 North Division Street
Pinehurst, ID 83850

The meeting location will be accessible to persons with disabilities, and language translators will be made available upon request. Requests for these accommodations must be made no later than five (5) days prior to the meeting date. For arrangements, contact Tanya Chin.

AVAILABILITY OF MATERIALS: The documents "2013 Base Year Emission Inventory for the West Silver Valley Nonattainment Area" and "PM10 Limited Maintenance Plan and Request for Redesignation of the Pinehurst PM10 Nonattainment Area and Pinehurst Expansion PM10 Nonattainment Area in Idaho" are available for public review on DEQ's website at <http://www.deq.idaho.gov/new-s-public-comments-events/>

Printed materials will be made available upon request at the DEQ Coeur d'Alene Regional Office.

SUBMISSION OF WRITTEN COMMENTS-ASSISTANCE ON TECHNICAL QUESTIONS: Anyone may submit written comment regarding the document. To be

most effective, comments should address air quality considerations and include support materials where available.

Please reference the document title listed above when sending comments or requesting information. Comments should focus on whether Idaho has properly characterized the base-year emission inventory for the West Silver Valley Nonattainment Area as required by 40 CFR 51.1008 and whether DEQ has met the Clean Air Act Requirements for redesignation to attainment for the Pinehurst and Pinehurst Expansion PM10 NAAs.

For technical assistance on questions concerning this document, please contact Pascale Warren at (208) 373-0586 or pascale.warren@deq.idaho.gov.

All written comments concerning this document must be directed to and received by the undersigned on or before 5:00 p.m., MST/MDT, August 11, 2017.

DATED this 5th day of July, 2017.

/s/ Tanya Chin
Air Quality Division

SHO LEGAL 2580
JULY 5, 2017

7/25/17

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DEQ seeks comment on draft air quality maintenance plan, redesignation request for Pinehurst

Wednesday, July 05, 2017

PINEHURST - The Idaho Department of Environment Quality (DEQ) is seeking public comment on a draft limited air quality maintenance plan and redesignation request for Pinehurst. The plan will be submitted to the U.S. Environmental Protection Agency (EPA) for approval.

The *PM10 Limited Maintenance Plan and Request for Redesignation of the Pinehurst PM10 Nonattainment Area and Pinehurst Expansion PM10 Nonattainment Area in Idaho* explains how the areas have attained PM10 national air quality standards and will maintain compliance for the next 10 years.

PM10 is airborne particulate matter 10 microns or smaller in diameter. When inhaled, these particles can reach deep into lung tissue and cause respiratory disease and lung damage.

The Pinehurst area first violated PM10 air quality standards in the 1980s and was formally designated a moderate PM10 nonattainment area with passage of the Clean Air Act in 1990. The nonattainment designation was expanded to include additional area in 1994.

In response to the nonattainment designations, DEQ developed a State Implementation Plan that included various control measures to reduce the area's pollution. As a result of those measures, no air quality standards violations have occurred since 2001. Both areas have been attaining PM10 air quality standards since August 2001. However, the areas remain designated as moderate nonattainment until DEQ meets the Clean Air Act requirements for redesignations to attainment. DEQ is now requesting redesignation for both areas by submitting a limited maintenance plan for PM10 per the Clean Air Act.

A public hearing on the plan will be held August 11, 2017, at 5:30 p.m. PDT at Pinehurst City Hall, 106 N. Division St. Written and oral comments will be accepted at the hearing.

The plan is available for review at DEQ's state office in Boise and on DEQ's website (download at right).

The deadline for submitting written comments on the plan outside of the public hearing is August 11, 2017, at 4 p.m. PDT.

Submit comments electronically on DEQ's website or by mail or email to:

Pascale Warren
DEQ State Office
Air Quality Division
1410 N. Hilton
Boise, ID 83706
Email: pascale.warren@deq.idaho.gov

Media Contact

Airshed Management Analyst
Pascale Warren
DEQ State Office
Air Quality Division
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Boise, ID 83706
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Related Documents

- » [Public Notice](#)
- » [PM10 Limited Maintenance Plan and Request for Redesignation of the Pinehurst PM10 Nonattainment Area and Pinehurst Expansion PM10 Nonattainment Area in Idaho - Draft](#)

Related Pages

[West Silver Valley Air Quality](#)

[West Silver Valley Air Quality Improvement Projects](#)

DEQ's Response to Comments on the PM10 Limited Maintenance Plan and Request for Redesignation of the Pinehurst PM10 Nonattainment Area and Pinehurst Expansion PM10 Nonattainment Area

Commenter 1 - Idaho Conservation League

Commenter	Comment	Response
1	<p>Summary of comment:</p> <p>Lack of permanent and enforceable control measures</p> <p>Although there have been reductions in PM10 in the Pinehurst and Pinehurst Expansion PM10 NAAs, section 107 of the Clean Air Act precludes these NAAs from being redesignated to attainment because DEQ's request failed to demonstrate that the improvement in air quality is due to permanent and enforceable reductions in emissions. The request lists the control measures that have been implemented in the Pinehurst and not one ensures permanent and enforceable emissions reductions. Indeed, the award of the Targeted Airshed Grant, which will significantly contribute to ongoing and future programs, will not secure permanent and enforceable emission reductions. For example, the Request does not detail if or how PM10 reductions through control measures on residential wood combustion will be maintained over time. Uncertified woodstoves continue to be replaced, but the resulting emissions reductions can only be made permanent if the woodstoves are properly cared for and maintained. Nowhere in the Request does it describe control measures, programs, or funding that ensure proper maintenance of woodstoves and long-term efficiency. Moreover, other control measures like the wood burning curtailment program are completely voluntary. Redesignation of PM10 NAAs in Bonner County, Idaho was partly based on approved and issued ordinances that create permanent and enforceable emission reductions. This Request provides no examples of Shoshone County or the city of Pinehurst taking actions that secure permanent and enforceable emission reductions. Pursuant to §107(d)(3)(E)(iii) of the Clean Air Act, the Pinehurst and Pinehurst Expansion PM10 NAAs may not request redesignation to attainment. We recommend the Request be delayed until control measures can be cited that ensure permanent and enforceable emission reductions.</p>	<p>On August 25, 1994 EPA issued a notice in 59 FR 43745 approving DEQ's control strategy as satisfying the RACM (including RACT) requirement and determined that the implementation of the Pinehurst, Idaho PM10 nonattainment control strategy would result in the attainment of the PM10 NAAQS by the attainment date. EPA concluded that DEQ adequately justified the control measures to be implemented. Since then all control measures approved by EPA in 1994 have been implemented and remain in place. These control measures include a residential wood stove program consisting of a voluntary episodic wood burning curtailment program, a public awareness campaign, uncertified wood stove change outs, and home weatherization. The combined control measures have been effective in reducing PM10 emissions, with the last recorded PM10 NAAQS violation occurring in 1998.</p> <p>Energy audits have enabled income-qualified households to permanently reduce their energy bills by helping to make their homes more energy efficient by improving heating systems and insulation. Per federal law, manufacturers are not able to ship any stove that does not meet EPA requirements, nor are Idaho retailers able to offer uncertified stoves for sale to homeowners. Permanent reductions in PM10 emissions occurred from the replacement of 163 uncertified woodstoves with permanently installed non-solid fuel heating appliances and EPA certified pellet and woodstoves. DEQ wood stove change-out programs have required documentation of stove replacement, including proof that the stove replaced was destroyed or recycled. The public awareness campaign, which centered on improving burning practices, also contributed to emissions reductions from wood burning stoves in the NAA through behavior changes, better appliance maintenance and care. These adopted control measures will be expanded during the first half of the maintenance period to include additional permanent reductions in PM10</p>

Commenter	Comment	Response
		<p>and PM2.5 from the replacement of another 188 uncertified woodstoves in the NAA and surrounding airshed, and implementation of even stronger outreach components.</p> <p>While the control strategy approved by EPA to reduce PM10 emissions from the Pinehurst NAA relied on voluntary measures, DEQ made an enforceable commitment in its SIP to monitor, assess and report on the emission reductions resulting from the adopted measures and to remedy any shortfalls from forecasted emission reductions in a timely manner or else be subject to a findings letter of non-implementation of an approved part of the plan (59 FR 43745). DEQ has upheld all its SIP commitments and has achieved the necessary reduction in PM10 emissions in order to request redesignation.</p>
1	<p>Summary of comment: Submittal of a full maintenance plan Should DEQ continue to pursue redesignation for the Pinehurst and Pinehurst Expansion NAAs, we recommend that a full maintenance plan be developed and submitted rather than the current LMP. The lack of long-term certainty for the present control measures warrants a more robust maintenance plan. If DEQ, indeed, pursues redesignation, we also request DEQ explain how its Request meets the criteria for redesignation under of the Clean Air Act.</p>	<p>DEQ has based its request for redesignation for the Pinehurst PM10 NAA on EPA guidance set forth in the 2000 Wegman Memo. This memo waives the full maintenance demonstration requirement for moderate nonattainment areas that attain the NAAQS and meet two qualifying criteria [1) a 5-year design value below 98 µg/m³ and 2) meet the mobile source emissions growth test]. If an area meets both of these criteria, in addition to attaining the NAAQS, a limited maintenance plan (LMP) is allowed.</p> <p>The first criterion is based on a statistical demonstration that areas meeting certain air quality conditions have a high likelihood of maintaining compliance with the NAAQS 10 years into the future. EPA has studied PM10 air quality data information for the entire country over the past eleven years (1989-1999) and has determined that some moderate PM10 nonattainment areas have had a history of low PM10 design values with very little inter-annual variation. The data indicate that most of the average design values at all the monitoring sites reporting data fall below 98 µg/m³ for the 24-hr PM10 NAAQS, which is below the individual site-specific critical design values (CDV). The CDV is an indicator of the likelihood of future violations of the NAAQS given the current average design value and its variability and is the</p>

Commenter	Comment	Response
		<p>highest average design value an area could have before it may experience a future exceedance of the NAAQS with a certain probability (1 in 10). The final criterion is related to mobile source emissions. The Pinehurst PM10 NAA expects only limited growth in on-road motor vehicle PM10 emissions (including fugitive dust) and passed the motor vehicle regional emissions analysis test as noted in the Wegman memo guidance.</p> <p>Section 4.1 of the LMP provides a full description of how the request for Redesignation meets all five criteria of the CAA Section 107(d)(3)(E). Section 3 of the LMP describes how the area meets the requirement under §107(d)(3)(E)(iii).</p>



IDAHO
CONSERVATION
LEAGUE

208.265.9565 • PO Box 2308, Sandpoint, ID 83864 • www.idahoconservation.org

Pascale Warren
DEQ Air Quality Division
1410 N. Hilton
Boise, ID 83706

Submitted via email to: pascale.warren@deq.idaho.gov

August 11, 2017

RE: Base Year Emission Inventory for the West Silver Valley NAA and the LMP and Redesignation Request for the Pinehurst and Pinehurst Expansion PM10 NAAs

Dear Ms. Warren:

Thank you for the opportunity to comment on the West Silver Valley (WSV) Nonattainment Area (NAA) Base Year Emission Inventory and the Pinehurst and Pinehurst Expansion PM10 NAAs Limited Maintenance Plan (LMP) and Request for Redesignation (Request). Since 1973, the Idaho Conservation League has been Idaho's leading voice for clean water, clean air and wilderness—values that are the foundation for Idaho's extraordinary quality of life. The Idaho Conservation League works to protect these values through public education, outreach, advocacy and policy development. As Idaho's largest state-based conservation organization, we represent over 25,000 supporters, many of whom have a deep personal interest in protecting Idaho's human health and environment.

Attached, please find my comments on behalf of the Idaho Conservation League.

Thank you for your time and consideration. Please do not hesitate to contact me at (208) 265-9565 or mnykiel@idahoconservation.org if you have any questions regarding our comments or if we can provide you with any additional information on this matter.

Sincerely,

Matthew Nykiel
Conservation Associate

ICL Comments

As an initial matter, we would like to commend the efforts of the West Silver Valley residents and public and agency officials, which have resulted in reductions of PM2.5 and PM10 emissions in the West Silver Valley and in the Pinehurst and Pinehurst Expansion NAAs. Programs like the woodstove replacement program and the focused engagement of DEQ staff and local residents are finding success in reducing emissions. We strongly encourage and hope that these efforts will continue and strengthen further to ensure that the WSV and Pinehurst NAAs do not again violate the National Ambient Air Quality Standards. This is critical given the many elderly residents of the West Silver Valley, who are particularly vulnerable to PM2.5 and PM10.

Redesignation Request

Although there have been reductions in PM10 in the Pinehurst and Pinehurst Expansion PM10 NAAs, section 107 of the Clean Air Act precludes these NAAs from being redesignated to attainment because the Request failed to demonstrate that the improvement in air quality is due to permanent and enforceable reductions in emissions. Until air quality improvements are founded on permanent and enforceable reductions, DEQ should delay requesting redesignation.

Section 107 of the Clean Air Act states:

“The Administrator may not promulgate a redesignation of a nonattainment area (or portion thereof) to attainment unless...the Administrator determines that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the applicable implementation plan and applicable Federal air pollutant control regulations and other permanent and enforceable reductions...”

CAA §107(d)(3)(E)(iii).

Section 3.4 of the Request lists the control measures that have been implemented in the Pinehurst and Pinehurst Expansion NAAs, including:

- Public awareness campaign;
- Uncertified woodstove replacement program;
- Home weatherization program; and
- Voluntary episodic wood burning curtailment program.

While we applaud these actions and their impact, not one ensures permanent or enforceable emissions reductions. Indeed, the award of the Targeted Airshed Grant, which will significantly contribute to ongoing and future programs, will not secure permanent and enforceable emission reductions. For example, the Request does not detail if or how PM10 reductions through control measures on residential wood

combustion will be maintained over time. Uncertified woodstoves continue to be replaced, but the resulting emissions reductions can only be made permanent if the woodstoves are properly cared for and maintained. Among the recommended maintenance for woodstoves, maintenance measures include: replacing the catalytic combusters and baffles every 1-4 years, replacing the gaskets on airtight stove doors regularly, and repairing seams on the stove that leak and reduce efficiency. Nowhere in the Request does it describe control measures, programs, or funding that ensure proper maintenance of woodstoves and long-term efficiency.

Moreover, other control measures like the wood burning curtailment program are completely voluntary. Redesignation of PM10 NAAs in Bonner County, Idaho was partly based on approved and issued ordinances that create permanent and enforceable emission reductions.¹ This Request provides no examples of Shoshone County or the city of Pinehurst taking actions that secure permanent and enforceable emission reductions.

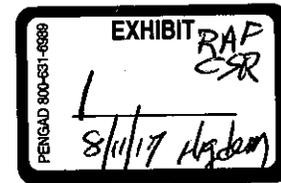
Pursuant to §107(d)(3)(E)(iii) of the Clean Air Act, the Pinehurst and Pinehurst Expansion PM10 NAAs may not request redesignation to attainment. We recommend the Request be delayed until control measures can be cited that ensure permanent and enforceable emission reductions.

In the alternative, should DEQ continue to pursue redesignation for the Pinehurst and Pinehurst Expansion NAAs, we recommend that a full maintenance plan be developed and submitted rather than the current LMP. The lack of long-term certainty for the present control measures warrants a more robust maintenance plan. If DEQ, indeed, pursues redesignation, we also request DEQ explain how its Request meets the criteria for redesignation under §107(d)(3)(E)(iii) of the Clean Air Act.

¹ The city of Sandpoint in Bonner County was designated in attainment for PM10 and based its request for redesignation, in part, on ordinances passed by the city. See City of Sandpoint Ordinance No. 939 and No. 965 as Amended by Ordinance 1237 and 1258 available at <https://yosemite.epa.gov/r10/airpage.nsf/8be3ce98191c7f0988256c140074ee64/46290d390c6c9eb188257b56006dfda3!OpenDocument>.

Pascale Warren
DEQ State Office, Air Quality Division
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Boise, ID 83706

Re: Pinehurst PM 10 & PM 2.5 Documents
Presented at a Public Hearing on August 11, 2017 at the Pinehurst City Hall



August 11, 2014

Thank you for the opportunity to comment on IDEQ's Pinehurst's Request for Redesignation to PM 10 Attainment & Limited Maintenance Plan and its 2013 Base Year Inventory for the West Silver Valley PM2.5 Nonattainment Area & Clean Data Determination. My name is Jann Hgdem. My address is 360 Lahde Hill, Pinehurst. It was the Shoshone County Board of Commissioners that asked me to research, analyze and validate the air quality issues in Shoshone County. It is likely due to my research that we are here today. All opinions expressed are my own.

Introduction. IDEQ's actions, and lack of actions, have unnecessarily painted a black eye on our communities for decades. Pinehurst has not violated the PM 10 standard since 1988 (almost 30 years ago) and IDEQ has failed since at least 2001 to present the document it is presenting to us today. It could go back as far as 1994 when the area met its first attainment deadline. There is absolutely logical no excuse for this prolonged lack of action, and they offer none.

The West Silver Valley would never have gone into PM 2.5 non-attainment if they had just continued to use the same monitor they were using here and everywhere else in Idaho. Instead on day 1 of the evaluation period, IDEQ switched Pinehurst (& Salmon) to a different type of monitor that the EPA had told them was reading illegally higher than actual and not to use if Pinehurst was teetering on nonattainment. The amount it read higher violated CFR's, and IDEQ chose to continue to break the law rather than use the accurate monitor, for 4 years straight. In 2015 IDEQ decided to switch Pinehurst (& Salmon) back to the same monitor the rest of the state (& most of the nation) was using...to have consistency.

Although we do greatly appreciate their completing these documents, the black eye(s) has now transferred to IDEQ and perhaps EPA for allowing these travesties to occur.

2013 Base Year Inventory for the West Silver Valley PM2.5 Nonattainment Area & Clean Data Determination

Incorrect Boundaries. The Introduction states in part, "The area was designated as the WSV nonattainment area (NAA) in April 2015 and includes the cities of Pinehurst, Smelterville, Kellogg, and Wardner. Figure 1 shows the outer boundary of the WSV NAA in Shoshone County." This is an erroneous statement, corroborated by Figure 1, which shows the boundaries actually continue westward including the communities of Kingston and the portion of Cataldo that lies in Shoshone County. IDEQ has been chastised for breaking its "airshed" policy in favor of geopolitical boundaries and is now trying to make it appear that it is not. The true is that much of our trans-County air flows here from Kootenai County, through the western portion of the airshed. **Recommendation:** IDEQ should correct the final draft to include "Kingston and the eastern portion of Cataldo" since both were cited in the original documentation and Kingston was involved in the Uofl Home Heating Survey. It should note why none of its tables/figures include these two communities, or calls them "remaining NAA households", since it depicts nearly as many as the cited community households.

Housekeeping: Table 1 should have the 808 tabbed to conform with the column.

2011 & 2014 NEI. The initial West Silver Valley (WSV) NAA Technical Support Document (TSD) employed the 2011 National Emissions Inventory (NEI), modeled without replicatable values, a portion of Shoshone County's portion of NEI. Assumably due to the more urban location, or household ratios, the TSD demonstrated that Residential Wood Combustion (RWC) was the most prevalent non-point source of emissions, rather than Shoshone County's far more prevalent Prescribed Burn emission source. I do not see this information anywhere in the document. Recommendation: IDEQ should add the variation in NEI comparisons between Shoshone County and the WSV models.

This document employs 2014 NEI data, which was just published this year, I am almost certain. It was not published in 2014, which misleads the reader. Recommendation: IDEQ should include the year it published in its final document.

The 2014 NEI data was used for this document. Reviewing Table 30, it is very interesting to note that the main emission source is no longer RWC, but is back to Prescribed Burns. Prescribed burn emissions are estimated at 88.91 tons/year, while RWC is just 52.61. Other than unpaved roads, there are virtually no other PM 2.5 sources affecting our air. This information flies in the face of IDEQ's insistence that RWC is the main cause of our nonattainment. Recommendation: If it is indeed true that Prescribed Burns are the main source, then IDEQ should state this and provide assistance to reduce RWC rather than blaming everyone for having old wood stoves.

Wildfire and Prescribed Burn Smoke.

Wildfires. It is beyond belief that IDEQ devotes so little attention to forest wildfire smoke and its emissions! One single paragraph! The WSV and the entire county, is extremely suseptible to wildfire smoke blown in from ID, WA, MT, Canada the Coeur d' Alene Tribal Reservation and even locally in the summer and fall months (half the year). In 2015, the Grizzly Complex wildfire located just northeast of the NAA in Shoshone County burned for over a month, taking in over 28,000 acres of forests. The degradation of air quality was so immense that sporting and other outdoor events and work were cancelled or curtailed and surely those even a bit sensitive to smoke were economically encumbered with medical visits and felt perhaps trapped in their homes . Certainly the area's economy also took a drastic plunge as tourists decided to recreate in an area where they could see something other than smoke!

The daily monitor values for days exceeding 12.0 µg/m3 are immediately flagged by IDEQ and worked up as "Exceptional Events" (EE), three years later. These EE days can then be deleted from the annual and 3-year means. Egs. There were 45 EE days in 2015 that should be removed from the annual mean by next year. IDEQ fails to mention Exceptional Events at all. Because these days can be erased from the written record, these days surely occurred and had emissions.

These forest wildfire smoke emissions were included in the NAA Designation's Technical Support Documents, albeit an outrageously small amount, due to the basically secretive modeling of the "manufactured" WSV. NARSTO has vehemently criticized the EPA's NEI's modeling because: the weighting of various factors is unknown and the same results cannot then be replicated as true science dictates. We just have to trust their work is accurate. I do not trust any of the models IDEQ used to designate nonattainment. for the very same reasons. Below is a table depicting a portion of an IDEQ emissions spreadsheet on the two entities' emissions that was used as supporting facts in the TSD; the public was not privy to the Shoshone County Sources section in the TSD. It certainly would have created conflicts.

Shoshone County Source	Tons per Year	WSV Source	Tons per Year
1) Prescribed Burning	2242.47	1) Residential Wood Combustion	547.42
2) Unpaved Roads	314.11	2) Prescribed Burning	426.72
3) Forest Wildfires	307.10	3) Unpaved Roads	25.46
4) Residential Wood Combustion	157.20	7) Forest Wildfires	7.23

It is interesting to note that the combined smoke emissions from other than RWC, compared to RWC in Shoshone County was a staggering 2,549.57 tpy vs 157.20. Put another way, RWC smoke was just 5% of the combined three smoke sources. IDEQ's model for the WSV, other than showing the forest fire smoke circumvents the urban areas, depicts other smoke as 433.95 tpy vs 547.42 for RWC, or RWC was 55% of the smoke sources. This proved to be wrong.

Recommendations: IDEQ needs to devote much more attention to forest wildfire smoke emissions that greatly impact our area. IDEQ must include forest wildfire smoke emissions in its Table 39 and elsewhere.

Prescribed Burns. IDEQ states in part, "Prescribed burning of forest lands and forest slash waste is known to cause elevated PM2.5 concentrations at the Pinehurst monitor during the fall, peaking around late October when the Idaho Department of Lands (IDL) permit period ends." Prescribed burn smoke is the leading emission source in the WSV. IDEQ has misled the reader completely with this untrue statement. The vast majority of prescribed fires of any size come from commercial logging and the end of the permit period is NOT the end of the prescribed burning period. It is the end of the "documented" prescribed burning. From October through May, is the primary time for the logging companies to burn their slash, not May through October, which is when they are logging. I am sure if IDL comments, they will address this as well. Recommendation: Reword this passage to be correct; prescribed burns occur year-round, but permits are not required from October through May, which makes tracking cumbersome and possibly inaccurate. Or remove the sentence.

It is unclear why Tribal information is less accurate than U.S. information and why IDEQ modelled all burns as a single burn. This will skew the model's accuracy. Recommendation: Get accurate information from the Tribe so that your model can be accurate.

IDEQ says in part, "FPA locations coinciding with ASG and IDL permits and NEI burn locations were removed to avoid double counting." Could it be that there were multiple burns or burn dates at FPA locations? If so, does this skew the data?

Overall it must be noted by myself, since IDEQ did not: the Primary PM 2.5 Emission Source for the WSV was NOT the originally thought Residential Wood Combustion, it was Prescribed Burn smoke. (See Appendix for the graphs) IDEQ was wrong. I have told them this for almost the entire time I have been researching this issue; their response has always been: "we believe we are right". I feel like IDEQ owes this area an apology for blaming our poor air quality on old wood stoves. The heating survey itself showed that only a small portion of the residents in Kingston, Pinehurst, Page, Smeltonville, Kellogg and Wardner wood stoves for heat at all, let alone non-certified ones.

This entire process again was completely unnecessary. If IDEQ had only left the gold standard monitor (FRM) as the Primary reporting monitor, the area would not have gone into nonattainment and the area would not have been given the stigma of having the 5th worst PM 2.5 air quality in the nation. Returning to the FRM has proven this to be true. IDEQ MUST retain the FRM as the Primary reporting monitor, and its daily values as long as the monitoring station is in Shoshone County. Personally, I hope the Kellogg School District evicts IDEQ from their premises; other schools have.

Pinehurst's Request for Redesignation to PM 10 Attainment & Limited Maintenance Plan

I am very happy to see this document be nearly completed. IDEQ has known for decades that Pinehurst's PM 10 values have met the NAAQS. The last year the standards were violated was 1988. They added an area after the fact (Pinehurst Expansion) and against the advice of the EPA. Since IDEQ had no public comments to say "don't add it" (or "add it"), they

added it. I am unable to locate any publication that told the public there was a comment period. This Expansion was separately listed and had a separate attainment deadline by the EPA. Pinehurst had a date of 12/31/1994 and the Expansion's date was 12/31/2001. The EPA for some reason waited until both areas had met their deadlines before issuing a Clean Data Determination (CDD) in 2002. At that point, it was up to IDEQ to draft what it has drafted today. All other PM 10 nonattainment areas in Idaho saw their paperwork submitted within two years of the CDD. IDEQ's website even states in part, "Redesignation is a complicated and lengthy process that can take up to 2 years for each area." (emphasis added) With this policy, IDEQ should have presented today's documentation in 2003. It has failed to give any meaningful reasons for waiting 13 years to get to today. I have seen their documents that depict neither IDEQ, nor the EPA, "were in any hurry" for Pinehurst's documentation.

Even more egregious than discriminating against Shoshone County by delaying today's documentation for so long, is the fact that IDEQ has admitted that they never published that Pinehurst had met the PM 10 NAAQS and our air quality was no longer impaired by this criteria pollutant. They did not mention it in their Annual Monitoring Reports that are available on line. They did not mention it on their website anywhere. This delay was obviously intentional and it is obvious that them not doing their mandated work was a deep dark secret. I suppose their dereliction of duty funded a career or two with EPA (taxpayer) funds.

There are certain economic hits that come with this designation, such as highway funding, increased regulations, emission restrictions for new businesses and a drop in tourism and recreation spending. IDEQ seemed not to care.

It would almost appear that perhaps IDEQ at a certain time may have realized that they could not keep Pinehurst in PM 10 nonattainment for much longer and began looking for a way to the area in nonattainment in another manner. I can see the lightbulb turn on: Since Pinehurst is always close to PM 2.5 nonattainment values, we can switch out the gold standard monitor with the very monitor EPA told us it reads higher than. That noted increase of 2-5 $\mu\text{g}/\text{m}^3$ would surely put them in nonattainment. Who cares if the EPA told us it violates the comparability CFR's. No one will know. Wrong.

Respectfully submitted,

Jann Higdem

Shoshone County & Pinehurst resident
Shoshone County's Air Quality Expert

APPENDIX

West Silver Valley PM 2.5 Annual Tons Per Year 2013

Vs

West Silver Valley PM 2.5 Annual Tons Per Year 2017

or

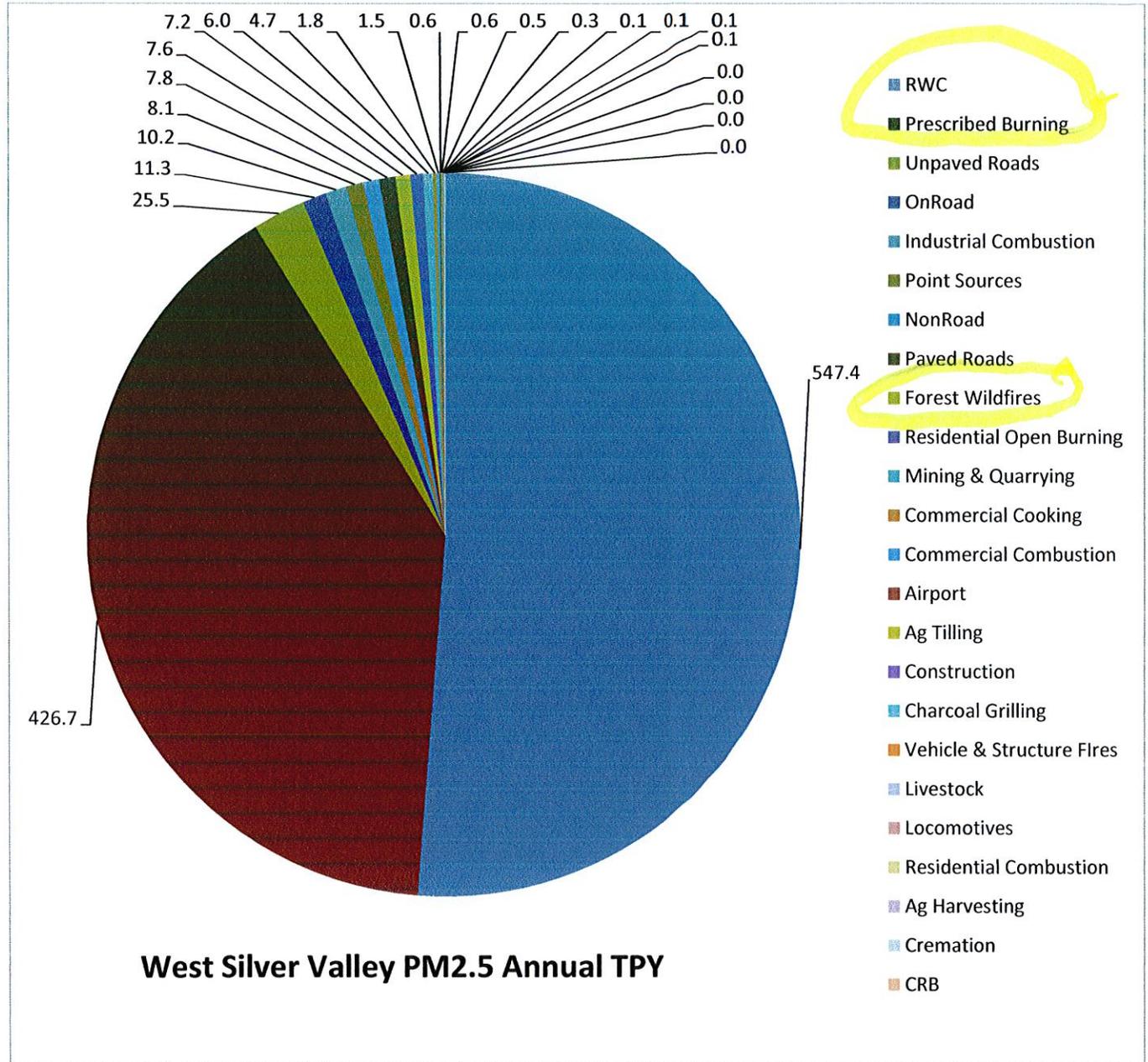
Residential Wood Combustion Emissions

Vs

Prescribed Burn Emissions

sulfates and nitrates. Overall, in all counties organic mass is by far the largest constituent of primary PM_{2.5} emissions followed to a lesser extent elemental carbon and crustal matter. This is consistent with the speciation data in that both the county-level emissions and monitored PM_{2.5} are dominated by organic carbon. It furthermore supports the conclusion that secondary ammonium sulfate and ammonium nitrate are not large contributors to the violating monitor.

Figure 5a-1. West Silver Valley, Idaho nonattainment Area Emissions Inventory, Annual PM_{2.5}



WSV NAA PM₂₅ Top Six Categories

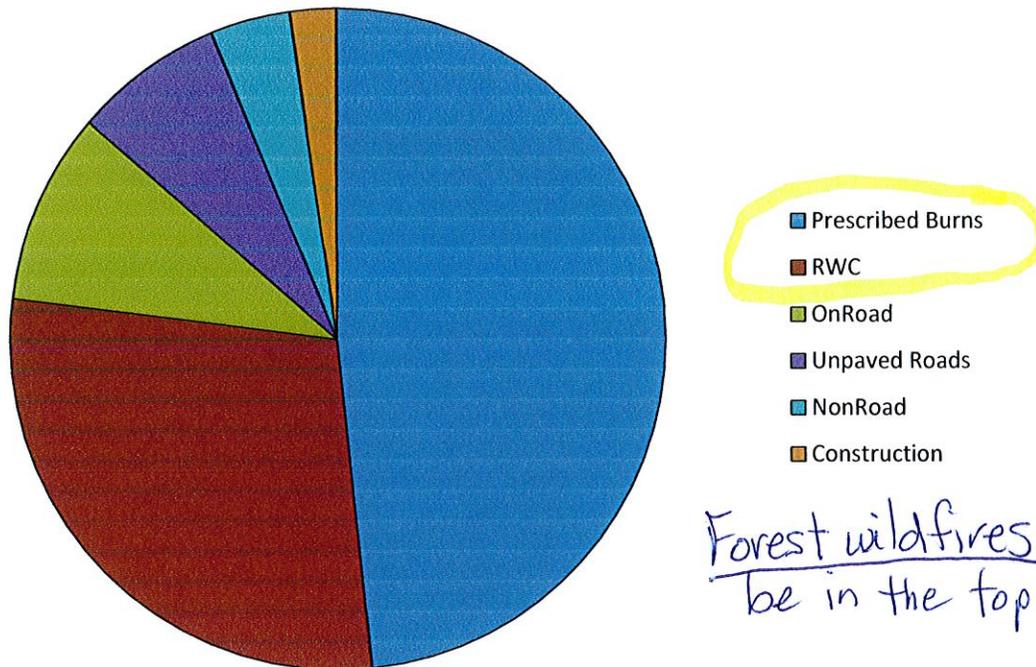


Figure 3. WSV NAA PM_{2.5} top six PM_{2.5} contribution categories.

8 References

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PUBLIC HEARING)
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PUBLIC HEARING REGARDING THE BASE YEAR
EMISSION INVENTORY OF THE WEST SILVER VALLEY
NONATTAINMENT AREA AND THE LIMITED MAINTENANCE PLAN
AND REDESIGNATION REQUEST OF THE PINEHURST EXPANSION
PM10 NONATTAINMENT AREAS

AT PINEHURST, IDAHO

AUGUST 11, 2017, 5:30 P.M.

REPORTED BY:

RON FERNICOLA, RPR, CCR, CSR #3380
Notary Public

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A P P E A R A N C E S

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THE STATE OF IDAHO, DEPARTMENT OF ENVIRONMENTAL QUALITY

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MEMBER OF PUBLIC:

JANN HIGDEM

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I N D E X

HEARING AND PUBLIC COMMENTS

PAGE
4

NUMBER	DESCRIPTION	MARKED
1	Higdem Comment Letter	22

1 THE PUBLIC HEARING was taken on behalf of
2 STATE OF IDAHO, DEPARTMENT OF ENVIRONMENTAL QUALITY on
3 this 11th day of August 2017, at Pinehurst City Hall,
4 106 North Division Street, Pinehurst, Idaho 83850,
5 before M&M Court Reporting, LLC, by Ron Fernicola, Court
6 Reporter and Notary Public within and for the State of
7 Idaho

8 AND THEREUPON, the following hearing was
9 adduced, to wit:

10 THE HEARING OFFICER: My name is Richard
11 Wallace. I'm from Coeur d'Alene, Idaho. I'm the
12 Hearing Officer tonight. And I'm going to read a
13 statement here. And this is the -- what we're going to
14 do.

15 Thank you everyone for attending. This is a
16 public hearing regarding the Base Year Emission
17 Inventory for the West Silver Valley Nonattainment Area
18 and the Limited Maintenance Plan and the Redesignation
19 Request for the Pinehurst and Pinehurst Expansion PM10
20 Nonattainment Areas.

21 We're at the Pinehurst City Hall, and it's
22 5:30 p.m., August 11th. I already said that I was the
23 Hearing Officer. I'm appointed to conduct this hearing
24 at 5:30. Okay. Notice of this hearing has appeared in
25 the Shoshone News Press, July 5th, 2017.

1 This is the time and place to receive oral
2 comments on the Base Year Emission Inventory for the
3 West Silver Valley Nonattainment Area and the Limited
4 Maintenance Plan and Redesignation Request for the
5 Pinehurst and Pinehurst Expansion PM10 Nonattainment
6 Areas.

7 Please limit your comments to air quality
8 concerns relating to these issues. Written comments
9 will also be accepted at the -- this hearing. The
10 written comment deadline is today, August 11th, 2017.
11 Those of you attending this proceeding who are -- are
12 asked to sign the sign-in sheet and indicate if you wish
13 to provide comments. After a brief statement by DEQ,
14 each person will be given an opportunity to provide
15 comments for the record. Because these proceedings are
16 being recorded, I ask that those who provide comments
17 state their name and spelling, if necessary.

18 So at this time, we'll have the DEQ statement
19 for the record.

20 MR. SWEETAPPLE: All right. Mr. Hearing
21 Officer, ladies and gentlemen, my name is Shawn
22 Sweetapple, Regional Air Quality Manager for the Idaho
23 Department of Environment Quality, Coeur d'Alene
24 regional office. This is the hearing for two separate
25 documents that we intend to submit to the U.S.

1 Environmental Protection Agency, or EPA, for approval,
2 the Base Year Emissions Inventory for PM2.5 and the
3 Limited Maintenance Plan and Redesignation Request for
4 the Pinehurst and Pinehurst Expansion PM10 Nonattainment
5 Areas.

6 DEQ is proposing to submit the Base Year
7 Emissions Inventory for the West Silver Valley
8 Nonattainment Area to EPA as required by 40 CFR 51.1008.
9 The Base Year Inventory is an estimate of actual
10 emissions that occurred at the time the area was
11 designated nonattainment. The West Silver Valley was
12 designated nonattainment for the 2012 fine particulate,
13 which is PM2.5, National Ambient Air Quality Standards,
14 in April of 2015. The nonattainment area includes the
15 cities of Pinehurst, Smeltonville, Kellogg and Wardner.
16 In response to the nonattainment designation, Idaho
17 began developing the required State Implementation Plan,
18 or SIP, S-I-P, for the area in 2015.

19 However, based on certified air quality
20 monitoring data for the 2014 through 2016 years, the
21 area has attained the 2012 PM2.5 NAAQS, N-A-A-Q-S, with
22 a design value which is a three-year average of 11.98
23 micrograms per cubic meter. To be in compliance with
24 the NAAQS, N-A-A-Q-S, the three-year average must not
25 exceed 12.0 micrograms per cubic meter. In accordance

1 with the Clean Data Policy and the PM2.5 Implementation
2 Rule, which is in 40 CFR 51.1015, the West Silver Valley
3 Nonattainment Area qualifies for a clean data
4 determination. Under the clean data determination, most
5 of the State Implementation Plan Requirements are
6 suspended as long as the area continues to attain the
7 NAAQS. However, the base-year Emissions Inventory
8 requirement is still applicable.

9 DEQ is also proposing to submit to EPA the
10 Limited Maintenance Plan and Redesignation Request for
11 the Pinehurst and Pinehurst Expansion PM10 Nonattainment
12 Areas. The intent of the submittal is to document that
13 air quality in the area has attained the PM10 NAAQS and
14 to outline how the area intends to maintain compliance
15 with the PM10 NAAQS for the next 10 years. The EPA
16 designated Pinehurst and Pinehurst Expansion Areas as
17 moderate nonattainment areas for the PM10 NAAQS in 1990
18 and in 1994, due to violations of the PM10 NAAQS in the
19 1980s. In response to the nonattainment designation, DEQ
20 developed a SIP, S-I-P, which included various control
21 measures to reduce the area's pollution. As a result of
22 the implementation of these measures, there have been
23 no measured violations of the PM10 NAAQS since 2001. On
24 August 23, 2001, EPA published a finding that the two
25 areas had attained the PM10 standard by their respective

1 attainment dates. However, the areas remained
2 designated as moderate nonattainment until DEQ met the
3 Clean Air Act requirements for redesignation to
4 attainment. DEQ is now seeking redesignation to
5 attainment for PM10 for both nonattainment areas. As
6 part of the redesignation request, DEQ is submitting a
7 Limited Maintenance Plan, LMP, for PM10 pursuant with
8 Clean Air Act Section 107(d)(3)(E).

9 These documents now out for public comment are
10 the subject of this public hearing.

11 DEQ is very interested in receiving input on
12 the PM2.5 Emissions Inventory and the PM10 Limited
13 Maintenance Plans. DEQ takes public input very
14 seriously, and your comments are appreciated.

15 We are constrained in this hearing to consider
16 only comments relevant to these documents.

17 Following consideration of all public
18 comments, DEQ will submit the Emissions Inventory and
19 Limited Maintenance Plans to EPA for approval.

20 And that's my comment.

21 THE HEARING OFFICER: Anything else from DEQ?

22 MR. SWEETAPPLE: No, not at this time.

23 THE HEARING OFFICER: Okay. Then we'll go on
24 to public comments.

25 Two documents are open for public comment.

1 No. 1 is the 2013 Base Year Emission Inventory for the
2 West Silver Valley Nonattainment Area. No. 2 is the
3 PM10 Limited Maintenance Plan and Request for
4 Redesignation of the Pinehurst PM10 Nonattainment Area
5 and Pinehurst Expansion PM10 Nonattainment Area in
6 Idaho.

7 So if you're going to make comments, please
8 specify which of these documents your comments are
9 addressed to.

10 I think we have one party that's signed up.
11 So you want to -- if you don't mind coming up and sign
12 your name and --

13 MS. HIGDEM: The chair is pretty comfy.

14 THE HEARING OFFICER: Go ahead and give your
15 comments. Thank you for coming.

16 MS. HIGDEM: You're welcome.

17 THE HEARING OFFICER: Thank you.

18 MS. HIGDEM: Thank you, Mr. Commissioner, for
19 having me and allowing me to make comments. My name is
20 Jann Higdem, J-a-n-n H-i-g-d-e-m, David, Edward, Mary.
21 I live in Pinehurst, or just north of it.

22 It was the Shoshone County Board of
23 Commissioners that asked me to research, analyze and
24 validate the air quality issues in Shoshone County.
25 It's likely due to my research that we are here today.

1 All opinions expressed are my own.

2 Stop me when I say something I'm not supposed
3 to.

4 IDEQ's actions, and lack of actions, have
5 unnecessarily painted a black eye on our communities for
6 decades. Pinehurst has not violated the PM10 standard
7 since 1988, almost 30 years ago, and DEQ has failed
8 since at least 2001 to present the document it's
9 presenting to us today, which is the -- I'm talking --
10 this is a summary -- of the MP10 document. It could go
11 back as far as 1994 when the area met its first
12 attainment deadline, which was Pinehurst. There is
13 absolutely no logical excuse for this prolonged action,
14 lack of action, and they offer none. They should have
15 done this at least in 2000 -- they got the Clean Data
16 Determination in 2001, they should have, according to
17 their stated policy on their website, had this -- this
18 paperwork -- this meeting in 2003. That's a long time
19 ago.

20 The West Silver Valley would never have gone
21 into PM2.5 nonattainment if they had just continued to
22 use the same monitor they were using here and everywhere
23 else in Idaho. Instead, on Day 1 of the evaluation
24 period, IDEQ switched Pinehurst and Salmon to a
25 different type of monitor that the EPA had told them was

1 reading illegally higher than actual and not to use if
2 Pinehurst was teetering on nonattainment. The amount it
3 read higher violated the CFRs, and IDEQ chose to
4 continue to break the law rather than use the accurate
5 monitor for 4 years straight. In 2015, IDEQ decided to
6 switch Salmon and Pinehurst back to the same monitor the
7 rest of the state and most of the nation was using to
8 have consistency.

9 Although we really do greatly appreciate these
10 documents being completed in here, the black eye seems
11 now transferred to IDEQ and perhaps EPA for allowing
12 these travesties to have occurred.

13 Regarding the 2013 Base Year Inventory for the
14 West Silver Valley PM2.5 Nonattainment Area and Clean
15 Data Determination, comments on the document, the
16 boundaries are incorrect. The introduction states in
17 part, "The area was designated as the West Silver Valley
18 Nonattainment Area in April 2015 and includes the cities
19 of Pinehurst, Smeltonville, Kellogg and Wardner.
20 Figure 1 shows the outer boundary of the West Silver
21 Valley NAA in Shoshone County." Those are in quotes.
22 This is an erroneous statement, corroborated by
23 Figure 1, which shows the boundaries actually continue
24 westward, including the communities of Kingston and the
25 portion of Cataldo that lies in Shoshone County. IDEQ

1 has been chastised for breaking its airshed policy in
2 favor of geopolitical boundaries and is now trying to
3 make it appear that it is not. The truth -- the
4 truth -- the truth is that much of our trans-county air
5 flows here from Kootenai County through the western
6 portion of the airshed to 4th of July, bottom of 4th of
7 July. Recommendation: IDEQ should correct the final
8 draft to include Kingston and the eastern portion of
9 Cataldo, since both were cited in the original
10 documentation and Kingston was involved in the U of I
11 Home Heating Survey. It should note why none of its
12 tables and figures include these two communities or
13 calls them the remaining NAA households, since it
14 depicts nearly as many as the cited community households
15 that are separately listed.

16 Housekeeping: Table 1 should have 808 tabbed
17 to conform to the rest of that column.

18 The 2011 and 2014 NEI. The initial West
19 Silver Valley NAA Technical Support Document employed
20 the 2011 National Emissions Inventory modeled without
21 replicatable values, a portion of Shoshone County's
22 portion of the NEI. So they had -- they had Shoshone
23 County and then this model that came up with the urban
24 area of -- of the -- the communities here. Who knows
25 how they came up with that. Assumably, due to the more

1 urban location, or household ratios, the TSD
2 demonstrated that residential wood combustion was the
3 most prevalent non-point source of emissions, rather
4 than Shoshone County's far more prevalent prescribed
5 burn emission source. I do not see this information
6 anywhere in the document. Recommendation: IDEQ should
7 add the variation in NEI comparisons between Shoshone
8 County and the West Silver Valley models.

9 This document employs 2014 NEI data, which was
10 just published this year, I am almost certain. It was
11 not published in 2014, which misleads the reader.
12 Recommendation: IDEQ should include the year it was
13 published in its final document.

14 The NEI -- the 2014 NEI data was used for this
15 document. Reviewing Table 30, it is interesting to note
16 that the main emission source is no longer residential
17 wood combustion, but is back to prescribed burns.
18 Prescribed burn emissions are estimated at 88.91 tons
19 per year, while residential wood combustion is 52.61
20 tons per year. Other than unpaved roads, there are
21 virtually no other PM2.5 sources affecting our air.
22 This information flies in the face of IDEQ's insistence
23 that residential wood combustion is the main source of
24 our nonattainment. Recommendation: If it is indeed
25 true that prescribed burns are the main source, then

1 IDEQ should state this and provide assistance to reduce
2 residential wood combustion rather than blaming everyone
3 for having old wood stoves.

4 The wildfire and prescribed burn smoke
5 section. Wildfires, it is beyond belief -- beyond
6 belief that IDEQ devotes so little attention to forest
7 wildfire smoke and its emissions. One single paragraph.
8 The West Silver Valley and the entire county is
9 extremely susceptible to wildfire smoke blown in from
10 Idaho, Washington, Montana, Canada, the Coeur d'Alene
11 Tribe and even locally in the summer and fall months, or
12 half the year. In 2015, the Grizzly Complex wildfire
13 located just northeast of the NAA in Shoshone County
14 burned for over a month, taking in over 28,000 acres of
15 forest. The degradation of air quality was so immense
16 that sporting and other outdoor events and work were
17 cancelled or curtailed, and surely those even a bit
18 sensitive to smoke were economically encumbered with
19 medical visits and felt trapped in their homes.
20 Certainly, the area's economy also took a tragic --
21 drastic plunge, as tourists decided to recreate in an
22 area where they could see something other than smoke.

23 The daily monitor values for days exceeding
24 12.0 micrograms per cubic meter are immediately flagged
25 by IDEQ and worked up as exceptional events, three years

1 later. These EE -- exceptional event -- days can then
2 be deleted from the annual and three-year means.
3 Examples, there were 45 EE days in 2015 that should be
4 removed from the annual mean by next year. IDEQ fails
5 to mention exceptional events at all. Because these
6 days couldn't be erased from the written record, these
7 days surely occurred and had emissions.

8 These forest fire -- forest wildfire smoke
9 emissions were included in the NAA Designation's
10 Technical Support Documents, albeit an outrageously
11 small amount, due to the basically secretive modeling of
12 the manufactured West Silver Valley. NARSTO -- stands
13 for something, and these guys are -- are the bomb -- has
14 vehemently criticized the EPA's NEI's modeling, because
15 the weighting of various factors is unknown, and the
16 same results cannot be replicated, as true science
17 dictates. We have -- we just have to trust their work
18 is accurate. I do not trust any of the models IDEQ used
19 to designate nonattainment for the very same reasons.
20 Below is a table depicting a portion of an IDEQ
21 emissions spreadsheet on the two entities' emissions
22 that was used as supporting facts in the technical
23 support document. The public was not privy to the
24 Shoshone County sources section in the TSD. It
25 certainly would have created conflicts.

1 What it shows in here is what Shoshone
2 County -- the whole county prescribed burning is 2242.47
3 tons per year emissions; unpaved roads is 314 and some;
4 forest wildfires is 307.10; and residential wood
5 combustion comes in fourth at 157.20 tons per year.
6 Then this modeled West Silver Valley thing shows
7 residential wood combustion at 547.42 tons per year;
8 prescribed burning right underneath it at 426.72. It's
9 not a big difference. Unpaved roads, 25.46. And clear
10 down No. 7 on the list is forest fires at 7.23 tons per
11 year. Where they got that is just beyond me.

12 It's interesting to note that the combined
13 smoke emissions from other than residential wood
14 combustion, compared to residential wood combustion, in
15 Shoshone County was a staggering 2,549.57 tons per year
16 versus 157.20 tons per year. Put another way,
17 residential wood smoke was just five percent of the
18 combined three smoke sources. IDEQ's model for the West
19 Silver Valley, other than showing the forest fire smoke
20 circumvents the urban areas, depicts other smoke as
21 433.95 tons per year versus 547.42 for residential wood
22 combustion, or residential wood combustion was 55
23 percent of the smoke sources. This proved to be wrong.

24 Recommendations: IDEQ needs to devote much
25 more attention to forest wildfire smoke emissions that

1 greatly impact our area. IDEQ must include forest
2 wildfire smoke emissions in its Table 39 and elsewhere.

3 Prescribed Burns. IDEQ states, in part,
4 "Prescribed burning of forest lands and forest slash
5 waste is known to cause elevated PM2.5 concentrations at
6 the Pinehurst monitor during the fall, peaking around
7 late October when the Idaho Department of Lands permit
8 period ends", unquote. Prescribed burn smoke is the
9 leading emission source in the West Silver Valley. IDEQ
10 has misled the reader completely with this untrue
11 statement. The vast majority of prescribed fires of any
12 size come from commercial logging, and the end of the
13 permit period is not the end of the prescribed burning
14 period. It is the end of the documented prescribed
15 burning. From October through May is the primary time
16 for the logging companies to burn their slash, not May
17 through October, which is when they're logging. I'm
18 sure if IDL comments, they will address this as well.
19 Recommendation: Reword this passage to be correct,
20 prescribed burns occur year-round, but permits are not
21 required from October through May, which makes tracking
22 cumbersome and possibly inaccurate, or remove the
23 sentence.

24 It's unclear why Tribal information is less
25 accurate than U.S. information and why IDEQ modelled all

1 burns as a single burn. This will skew the model's
2 accuracy. Recommendation: Get accurate information
3 from the Tribe so that your model can be accurate.

4 IDEQ says, in part, "FPA, Forest Practice Act,
5 locations coinciding with ASG and IDL permits and NEI
6 burn locations were removed to avoid double counting."
7 Could it be that there were multiple burns or burn dates
8 at FPA locations? If so, does this skew the data?

9 Overall, it must be noted by myself, since
10 IDEQ did not, the Primary PM2.5 emission source for the
11 West Silver Valley was not the originally thought
12 residential wood combustion, it was prescribed burn
13 smoke. See Appendix for the graphs. IDEQ was wrong. I
14 have told them this almost the -- for almost the entire
15 time I have been researching this issue. Their response
16 has always been, "We believe we are right." I feel like
17 IDEQ owes this area an apology for blaming our poor air
18 quality on old wood stoves. The heating survey itself
19 showed that only a small portion of the residents in
20 Kingston, Pinehurst, Page, Smeltonville, Kellogg and
21 Wardner used wood stoves for heat at all, let alone
22 non-certified ones.

23 The entire process again -- this entire
24 process, again, was completely unnecessary. If IDEQ had
25 only left the gold standard monitor, the FRM, as the

1 primary reporting monitor, the area would not have gone
2 into nonattainment, and the area would not have been
3 given the stigma of having the fifth worst PM2.5 air
4 quality in the nation. Returning to the FRM has proven
5 this to be true. IDEQ must retain the FRM as the
6 primary reporting monitor and its daily values, as long
7 as the monitoring station is in Shoshone County.
8 Personally, I hope the Kellogg School District evicts
9 IDEQ from their premises. Other schools have.

10 Okay. Pinehurst's Request for Redesignation
11 to PM10 Attainment and the Limited Maintenance Plan.

12 I'm almost done.

13 I'm very happy to see this document be nearly
14 completed, which, you know, you got -- you're not done.
15 IDEQ has known for decades that Pinehurst's PM10 values
16 have met the NAAQS. The last year the standards were
17 violated was 1988. They added an area after the fact,
18 Pinehurst Expansion, and against the advice of the EPA.
19 Since IDEQ had no comment -- public comments to say
20 "Don't add it" or "Add it", they added it. I am unable
21 to locate any publication that told the public there was
22 a comment period. This Expansion was separately listed
23 and had a separate attainment deadline by the EPA.
24 Pinehurst had a date of 12/31/94, and the Expansion's
25 date was 12/31/2001 -- or 2000 -- typo -- The EPA, for

1 some reason, waited until both areas had met their
2 deadlines before issuing a Clean Data Determination, or
3 a CDD, in 2002. At that point, it was up to IDEQ to
4 draft what it has drafted today. All other states' --
5 or all other PM10 nonattainment areas in Idaho show
6 their paperwork submitted within two years of the CDD.
7 IDEQ's website even states, in part, "Redesignation is a
8 complicated and lengthy process that can take up to two
9 years for each area", emphasis added. With this policy,
10 IDEQ should have presented today's documentation in
11 2004. And I got that messed up because the typo's
12 there. So it should have been done in 2003. Another
13 typo. It has failed to give any meaningful reasons for
14 waiting 13 years to get to today. I have seen this --
15 their documents that depict neither IDEQ nor the EPA
16 were in any hurry for Pinehurst's documentation.

17 Even more egregious than discriminating
18 against Shoshone County by delaying today's
19 documentation for so long is the fact that IDEQ has
20 admitted that they never published that Pinehurst had
21 met the PM10 NAAQS and our air quality was no longer
22 impaired by this criteria pollutant. They do not
23 mention in their annual monitoring reports that are
24 available on-line. They do not mention it on their
25 website anywhere. This delay was obviously intentional,

1 and is -- and it is obvious that them not doing their
2 mandated work was a deep dark secret. I suppose that
3 their dereliction of duty funded a career or two with
4 EPA or taxpayer funds.

5 There are certain economic hits that come with
6 this designation, such as highway funding, increased
7 regulations, emissions restrictions for new businesses
8 and a drop in tourism and recreation funding. IDEQ
9 seemed not to care.

10 It would almost appear -- last paragraph -- it
11 would almost appear that, perhaps, IDEQ at a certain
12 time may have realized that they could not keep
13 Pinehurst in PM10 nonattainment for much longer and
14 began looking for a way to put the area in nonattainment
15 in another manner. I can see the light bulb turn on.
16 Since Pinehurst is always close to PM2.5 nonattainment
17 values, we can switch out the gold standard monitor with
18 the very monitor EPA told us it reads higher. That
19 noted increase of two to five micrograms would surely
20 put them in nonattainment. Who cares if the EPA told us
21 it violates the comparability CFRs. No one will know.
22 Wrong.

23 Then I have an appendix, which shows two
24 graphs of -- from the 2012 and 2000 -- and it's
25 identical to the 2015 final draft of the -- whoever

1 wrote this technical support document, it depicts
2 residential wood combustion as the major source. Short
3 behind it is prescribed burning. Way down is forest
4 fires, which is one of them little guys. That one,
5 actually.

6 Then the current one that's in today's
7 document switches, and prescribed burn is here,
8 residential wood combustion is here. Forest fires are
9 not even on there. They're not even in the document
10 anywhere. And the only way you can get smoke, is you
11 can see.

12 That concludes my remarks.

13 THE HEARING OFFICER: Do you want to mark that
14 and have it in the record?

15 MS. HIGDEM: Yes, sir.

16 THE HEARING OFFICER: Okay. Thank you.

17 (Exhibit 1 was marked for identification.)

18 THE HEARING OFFICER: Okay. Thank you.

19 So you're concluding your comments?

20 MS. HIGDEM: Pardon?

21 THE HEARING OFFICER: Are you done with your
22 comments?

23 MS. HIGDEM: Yes, sir, I am -- I am done. I
24 think I've said enough.

25 MR. SWEETAPPLE: Thank you, Jann.

1 MS. HIGDEM: Don't tell Dan what I said.

2 THE HEARING OFFICER: So, anyway, we're going
3 to go off -- since there are no other speakers that are
4 offering testimony, we're going to go off the record
5 until 6:30, at which time we'll close the hearing.

6 So if there's anyone else that would like to
7 add anything before we do that, because everything else
8 will be off the record until we adjourn at 6:30. We're
9 going to be here until 6:30.

10 (There was a recess taken.)

11 THE HEARING OFFICER: I'm going to go call it,
12 6:30. So I appreciate everyone for coming. And we're
13 going to close this hearing. And it's now 6:30 p.m. and
14 the hearing is closed. Thank you.

15 (Proceedings concluded at 6:30 p.m.)

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REPORTER'S CERTIFICATE

I, Ron Fericola, Certified Shorthand Reporter,
do hereby certify:

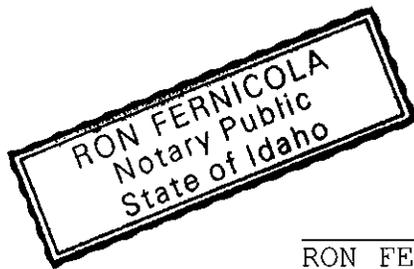
That the foregoing proceedings were taken
before me at the time and place therein set forth, at
which time any witnesses were placed under oath;

That the testimony and all objections made were
recorded stenographically by me and were thereafter
transcribed by me or under my direction;

That the foregoing is a true and correct record
of all testimony given, to the best of my ability;

That I am not a relative or employee of any
attorney or of any of the parties, nor am I financially
interested in the action

IN WITNESS WHEREOF, I have hereunto set my hand
and seal this 18th day of August, 2017.



Ron Fericola

RON FERNICOLA, ID CSR No. SRT-1062
Notary Public
816 Sherman Avenue, Suite 7
Coeur d'Alene, ID 83814

My Commission Expires October 11, 2022

A

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