

**REQUEST FOR REDESIGNATION OF THE
LIBBY
PM_{2.5} NONATTAINMENT AREA
&
APPROVAL OF AN ATTAINMENT AREA
LIMITED MAINTENANCE PLAN**



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ACRONYMS

AIRS	Aerometric Information Retrieval System
AQS	Air Quality System
ARM	Administrative Rules of Montana
BER	Board of Environmental Review
CAA	Federal Clean Air Act
CDV	Critical Design Value
CMB	Chemical Mass Balance
CV	Coefficient of Variation
DEQ	Montana Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
FR	Federal Register
HAPS	Hazardous Air Pollutants
LAER	Lowest Achievable Emission Rate
LMP	Limited Maintenance Plan
NAA	Nonattainment area
NAAQS	National Ambient Air Quality Standard(s)
NEI	National Emission Inventory
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
NO _x	Oxides of Nitrogen
PAH	Poly Aromatic Hydrocarbons
PM ₁₀	Particulate Matter of 10 Microns or Less
PM _{2.5}	Particulate Matter of 2.5 Microns or Less
PSD	Prevention of Significant Deterioration
RACM	Reasonable Available Control Method
RFP	Reasonable Further Progress
SIP	State Implementation Plan
TSP	Total Suspended Particulate
tpy	tons per year
VMT	Vehicle Miles Travelled
µg/m ³	micrograms per cubic meter

REQUEST FOR REDESIGNATION OF THE LIBBY PM_{2.5} NONATTAINMENT AREA AND APPROVAL OF A LIMITED MAINTENANCE PLAN

1. INTRODUCTION

The State of Montana would like to formally request redesignation of the Lincoln County (Libby area) nonattainment area (NAA) for particulate matter with an aerodynamic diameter of 2.5 microns or less (PM_{2.5}) from ‘nonattainment’ to ‘attainment’ with a limited maintenance plan (LMP). This document supports the request by demonstrating each of the requirements set out in Sections 107, 110 and Part D of the Clean Air Act (CAA), including:

- a determination that the area has attained the PM_{2.5} National Ambient Air Quality Standards (NAAQS);
- an approved State Implementation Plan (SIP) for the area under Section 110(k) of the CAA;
- a determination that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the SIP and other federal requirements;
- a fully-approved maintenance plan under Section 175A of the CAA; and
- a determination that all Section 110 and Part D requirements of the CAA have been met.

This section provides detail on the history of the NAA designation, major source contributors, and control plan details. Subsequent sections provide support for each of the redesignation requirements outlined above including monitoring data, SIP provisions, emission inventory, and LMP specifics.

1.1. NAA History

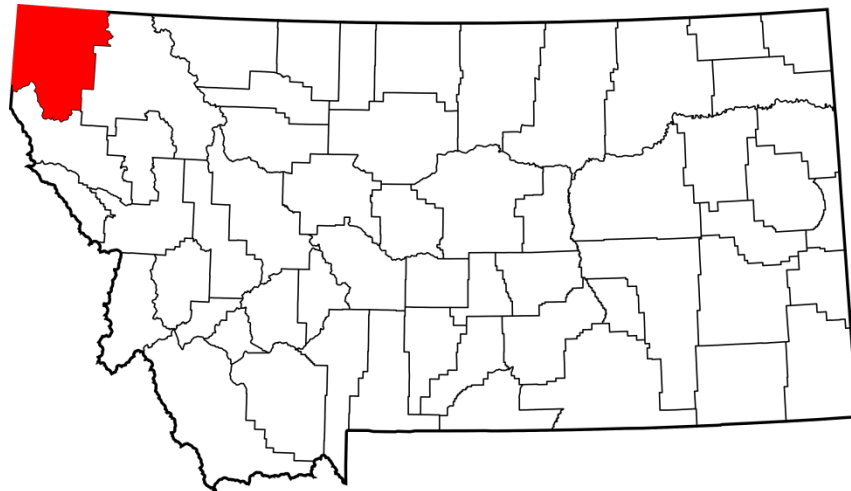
The United States Environmental Protection Agency (EPA) promulgated new PM_{2.5} NAAQS on July 18, 1997 (62 Federal Register (FR) 38652). The primary (health-based) standards were set at 65 micrograms per cubic meter (µg/m³), based on a 3-year average of the 98th percentile of 24-hour concentrations, and 15 µg/m³ annual arithmetic mean, based on a 3-year average of the annual mean concentrations. The secondary (public welfare-based) standards were set the same as the primary standard.

On January 5, 2005 (70 FR 944), the Libby area of Lincoln County was classified by the EPA as a PM_{2.5} NAA based on air quality data for calendar years 2001 through 2003. The Libby area was already NAA for particulate matter of 10 microns or less in diameter (PM₁₀). The PM_{2.5} NAA was established for only the annual 1997 standard and encompasses a much larger area than the PM₁₀ NAA.

Particulate monitoring has been conducted in Libby since the mid-1970s. Initial monitoring was for total suspended particulate (TSP) at two locations, the Brown residence (30-053-0010) and Lincoln County's courthouse (30-053-0012). An analysis of the TSP data from the Lincoln County courthouse and the Brown's residence revealed both sites were monitoring the same airshed. In August 1985, the Department of Environmental Quality (DEQ) discontinued the TSP sampling at the Brown's residence. DEQ installed the first PM₁₀ sampler in Libby at the courthouse site in May 1985. In 1986, another PM₁₀ monitoring site was established a few blocks away at the county's courthouse annex (30-053-0018). The original courthouse monitoring site was terminated in April 1995, when a comparison of its data with that collected at the annex site indicated the original courthouse PM₁₀ site was redundant. Monitoring for PM_{2.5} commenced at the county's courthouse annex in 1999 and continues to be collected there.

Libby is a small, rural community located in Lincoln County, in the northwest corner of Montana, as shown in Figure 1.1. The town sits on the valley floor at the junction of US Highway 2 and MT Highway 37.

Figure 1.1 – Lincoln County, Montana



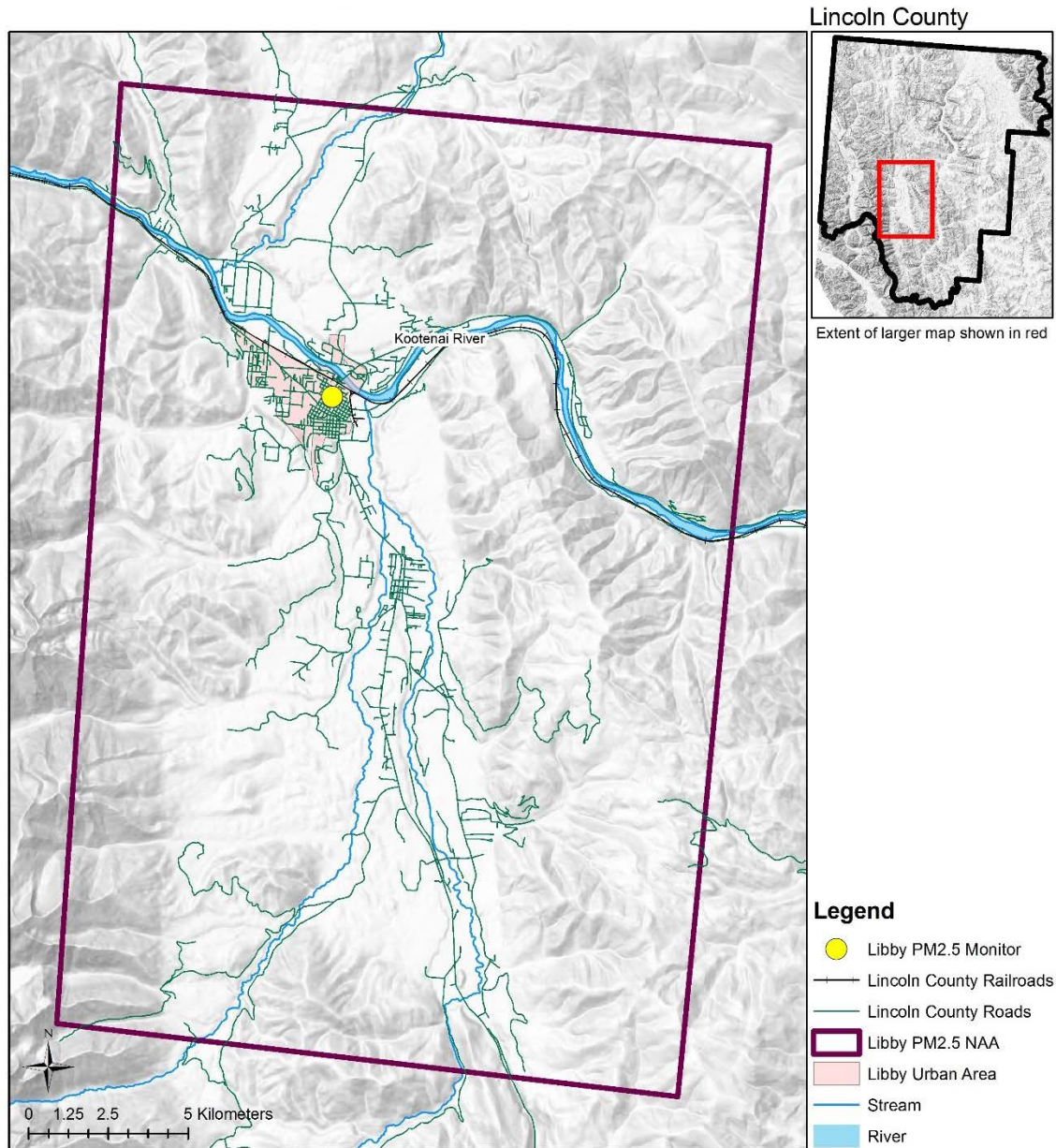
The Libby PM_{2.5} NAA is rectangularly shaped. The corners of this NAA are:

- 600,000mE, 5,370,000mN;
- 620,000mE, 5370,000mN;
- 620,000mE, 5340,000mN; and
- 600,000mE, 5,340,000mN.

Figure 1.2 shows the NAA boundary which encompasses the commercial and residential neighborhoods of Libby, nearby communities that extend along the valley floor, and much of the neighboring mountainsides. The valley floor elevation is about 2,080 feet with the Cabinet

Mountains to the west rising to over 8,000 feet, the Purcell Mountains to the north rising to 6,000 feet, and the Salish Mountains to the east rising to 6,000 feet. These steep valley walls channel air flows and during calm wind conditions easily develop temperature inversions trapping cold air (and pollution) on the valley floor.

Figure 1.2 – Libby PM_{2.5} NAA Boundary



1.2. Historical Sources of PM_{2.5}

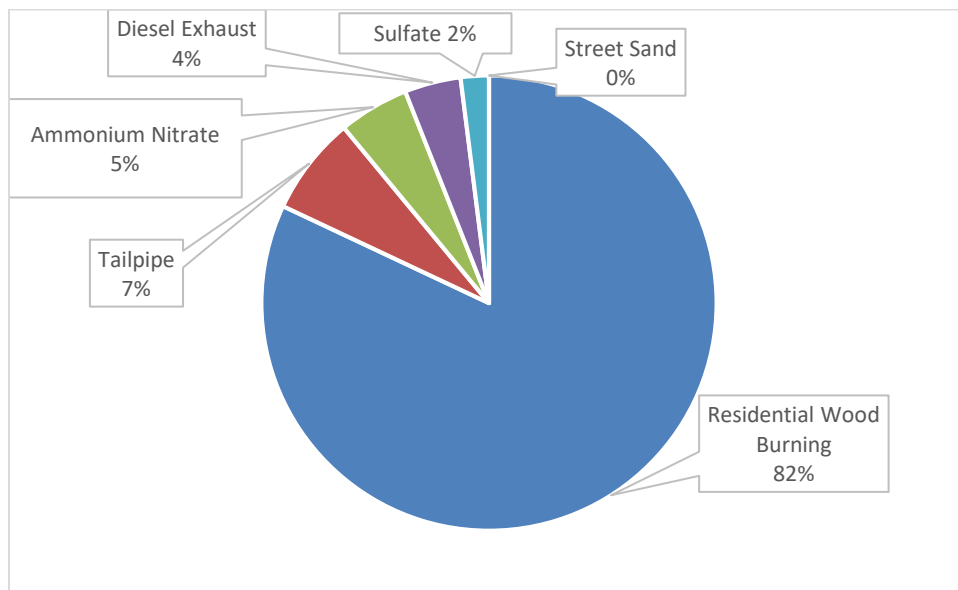
To develop strategies to reduce PM_{2.5} emissions within the NAA, DEQ investigated the composition of the PM_{2.5} during the 2003-2004 winter by conducting a chemical mass balance (CMB) study. The CMB study was a 4-month winter-time study from November 11, 2003 through

February 27, 2004, to cover the period of peak concern. Additional analyses, including polar organics and polycyclic aromatic hydrocarbon (PAH) analyses, and carbon 14 (¹⁴C) analyses were conducted as part of the CMB study to provide chemical fingerprinting and a rollback to the emission sources. The CMB studies identified the following emission sources contribute to the area's PM_{2.5} impact:

- residential wood combustion,
- tailpipe exhaust,
- ammonia nitrate,
- diesel combustion, and
- sulfate.

Figure 1.3 is a graphical representation of the CMB results and shows that the majority of PM_{2.5} impact is from residential wood combustion (82%), followed by tailpipe exhaust (7%). The chemical fingerprinting and rollback analysis confirmed the majority of PM_{2.5} impacts were from wood combustion. It should be noted that part or all the diesel exhaust source category may be from diesel vehicles and therefore vehicle tailpipe emissions could range anywhere from 7 percent to 11 percent of the emissions. Hence, the combination of residential wood burning, and vehicle exhaust could account for 89 to 93 percent of the PM_{2.5} impact.

Figure 1.3 – PM_{2.5} CMB Source Contributions in Libby During Control Plan Development (November 11, 2003 – February 27, 2004)



It's worth noting that street sand contributions were negligible in the PM_{2.5} CMB analyses, even though this was a significant source of emissions in the PM₁₀ NAA inventory and strongly regulated in Libby's PM₁₀ NAA control plan. Surprisingly, industrial impacts were not identified as an emission impact source. Only one major industrial source was operating in Libby during the 2001-

2003 years when the area was found to exceed the annual PM_{2.5} NAAQS. This facility was the Stimson Lumber Company (Stimson) which operated both a hog fuel boiler and veneer dryers. Stimson operated through December 2002 in Libby but discontinued its operation at the end of 2002. Ambient monitoring data showed no changes to the PM_{2.5} impacts when the industry closed. Libby had no other significant industry affecting the PM_{2.5} levels during the years that exceeded the NAAQS.

1.3. Control Plan Details

To develop the original control plan to reduce PM_{2.5} emission impacts within the NAA, DEQ investigated control options for the major emission sources identified in the area from the CMB study. The control plan focused on residential wood combustion emissions since they accounted for over 82 percent of the impacts. Wood combustion was controlled through local regulations. Vehicle exhaust was acknowledged to account for the next largest impact and controls relied on federal tailpipe standards.

On March 17, 2011, the EPA approved Libby's PM_{2.5} attainment plan as submitted on March 26, 2008 (76 FR 14584). The plan addressed the requirements from EPA's Clean Air Fine Particle Implementation Rule for the 1997 PM_{2.5} NAAQS of April 25, 2007 (72 FR 20586). The plan included an attainment demonstration, an analysis of Reasonably Available Control Measures (RACM), base-year and projection year emission inventories, and contingency measures. Attainment was projected in Libby by April 2010. In the SIP approval for the attainment plan, the EPA also adopted revisions to the Lincoln County Air Pollution Control Program submitted on June 26, 2006, that were part of a PM₁₀ SIP revision that were also applicable to the PM_{2.5} NAA.

The control plan is based on rules adopted by Lincoln County Environmental Health Department and the City of Libby for the Air Pollution Control District which encompasses the PM_{2.5} NAA and much more. These rules are part of the Lincoln County Health Department's Health and Environment Rules in Chapter 1. The rules contain the following subchapters, all designed to control PM_{2.5} in Lincoln County:

- Subchapter 1 - (75.1.100-106) - General Provisions;
- Subchapter 2 - (75.1.201-206, 208) - Solid Fuel Burning Device Regulations;
- Subchapter 3 - (75.1.301-308) - Dust Control Regulations; and
- Subchapter 4 - (75.1.401-408) - Outdoor Burning Regulations.

The components of the control plan are discussed below.

Local Regulations for Residential Wood Combustion

The regulations in Subchapter 2 require that solid fuel burning devices be permitted by Lincoln County Environmental Health Department. The regulations restrict the material allowed for combustion and prohibit visible emissions greater than 20 percent opacity. Lincoln County will call

Air Pollution Alerts when particulate matter concentrations are more than 80 percent of the 24-hour standard and at that time, solid fuel burning devices are not allowed to operate unless the device has received an exemption. A provision allows exempt devices to be operated during an alert, but only with an opacity of 10 percent or less.

Local Regulations for Re-Entrained Road Dust

Although re-entrained road dust is not an identified emission source category, Subchapter 3 of the county rules address re-entrained dust from roads, parking lots and commercial lots by requiring dust abatement and control. These road dust regulations apply within the regulated road sanding and sweeping district as defined in the regulation. Vehicular operations within the district are only allowed on paved surfaces within the district. To control ice on the roads, liquid de-icing agents and de-icing salts should be used. Sanding material is not allowed unless the Lincoln County Environmental Health Department declares an emergency and then only sanding material that meets specific durability, abrasion, and fines concentrations are allowed.

Roads are to be maintained using a schedule of prioritized street sweeping and flushing to remove carry-on or applied materials. Commercial operations shall also implement measures to prevent depositing material on yards/lots, suppress dust, and clean adjoining roadways.

Local Regulations to Control Outdoor Burning

Subchapter 4 of the county rules addresses outdoor burning and restricts non-essential outdoor burning, promoting alternative disposal methods and recycling, and setting standards to minimize emissions when outdoor burning is necessary. These rules apply to both the air pollution control district which is the same area as the PM_{2.5} NAA, and to Impact Zone L, which extends beyond the NAA.

The rules specify which materials and activities are prohibited for outdoor burning. Residential outdoor burning is only allowed in the month of April while management burns are allowed from April through October. Burning outside these months requires additional approval from the Lincoln County Health Department. Burners must obtain a burn permit from the department and may only conduct their burn if meteorological conditions have good air dispersion characteristics, as determined by the department.

Federal Tailpipe Standards

Federal tailpipe standards were designed to reduce vehicle emissions, including PM_{2.5}. The previous control plan did not take credit for the PM_{2.5} reductions resulting from lower federal vehicle emissions standards and vehicle fleet turnover in the NAA. The federal tailpipe standards and vehicle turnover will continue to reduce future impacts and meet the requirements of the 1990 CAA Amendments.

2. REQUEST FOR LIBBY NAA REDESIGNATION TO ATTAINMENT

Section 107(d)(3)(E) of the CAA establishes five requirements that must be met before a NAA can be considered for redesignation to attainment. Additionally, guidance from the September 4, 1992 Calcagni Memo for *Procedures for Processing Requests to Redesignate Areas to Attainment* and applicable provisions of the CAA, provide the basis for redesignation and maintenance. Although the Calcagni Memo specifically states it addresses six pollutants (criteria pollutants) including PM₁₀, PM_{2.5} was not included on this list because it was not regulated in 1992. Guidance from the Calcagni memo has been used to address this PM_{2.5} NAA because it is now a regulated criteria pollutant and this guidance has been used for other PM_{2.5} NAA redesignation requests.

This section of the document addresses each of the five requirements (as listed in Section 1) and demonstrates that the area has attained and will maintain compliance with the 1997 PM_{2.5} NAAQS. While these conditions must be met before redesignation of an area from nonattainment to attainment, the 1992 Calcagni memo allows a state to submit both the redesignation request and the maintenance plan concurrently.

2.1. CAA §107(d)(3)(E)(i) – Determination that the Area Has Attained the PM_{2.5} Standards

The 1997 PM_{2.5} annual NAAQS of 15 µg/m³ is not to be exceeded on average over 3 years. Since 2001, PM_{2.5} monitoring data has been collected in Libby and has been quality-assured to meet the requirements of 40 CFR Part 58. This data has been recorded in the EPA's Air Quality System (AQS), the successor of the Aerometric Information Retrieval System (AIRS) and is available for public review. Figure 2.1 shows all the monitored data. Table 2.1 shows the annual average for the most recent five years of quality-assured monitoring data, 2014 through 2018. Table 2.2 shows the 3-year annual average values which reflects the averaging time of the annual standard. Both tables demonstrate that Libby's PM_{2.5} monitoring data remain below the 1997 PM_{2.5} NAAQS. To be clear, the monitoring data used to create Figure 2.1 and the annual values in the tables below includes all quality-assured monitoring data, including those caused by exceptional events (wildfires). For reference, the annual average since 2007 with exceptional events above 35.4 µg/m³ removed has also been shown. DEQ has submitted to the EPA requests for concurrence of these exceptional events. The exceptional events from 2014 were submitted to EPA via mail with DEQ's letter dated October 19, 2015. DEQ submitted the 2015 and 2016 exceptional events to EPA on April 27, 2017. Exceptional events from calendar years 2017 and 2018 were submitted to EPA on April 10, 2019, and _____ (note: 2018 EE will be submitted to EPA concurrently with this request), respectively.

Figure 2.1 – Libby’s PM_{2.5} Annual Averages (µg/m³)

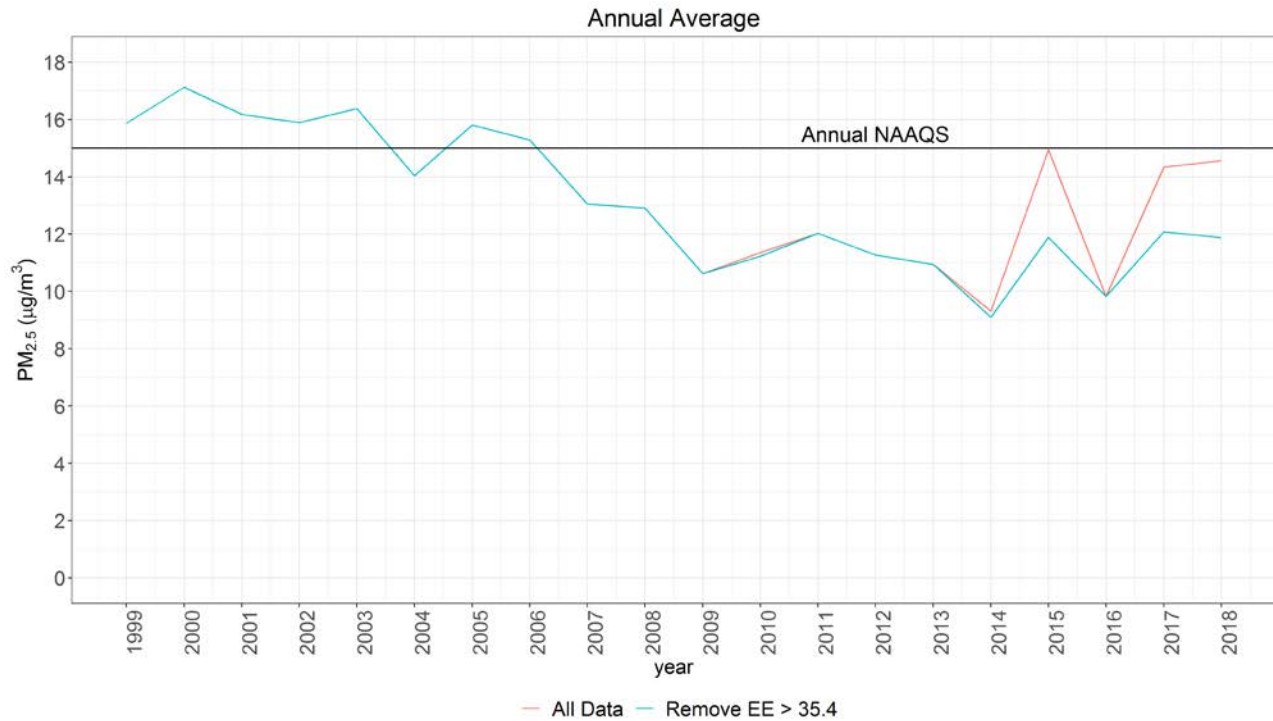


Table 2.1 – Libby’s Recent Five Years of PM_{2.5} Annual Monitoring Results (µg/m³)

	2014	2015	2016	2017	2018
PM_{2.5} Annual Average	9.3	15.0	9.8	14.3	14.6

Table 2.2 – Libby’s Recent PM_{2.5} 3-year Annual Average Monitoring Results (µg/m³) from the Past Five Years

	2014-2016	2015-2017	2016-2018	5-year Avg.
PM_{2.5} 3-year Average	11.4	13.0	12.9	12.4

The last PM_{2.5} annual average that was above 15 µg/m³ was in 2006 as shown in Figures 2.1. These results demonstrate that Libby has attained the PM_{2.5} NAAQS and meets the requirements of CAA §107(d)(3)(E)(i). Further EPA determined that the area has attained the 1997 Annual PM_{2.5} standard on July 14, 2015 (80 FR 40911) based on data from 2007-2009.

2.2. CAA §107(d)(3)(E)(ii) – Approved Implementation Plan for the Area Under Section 110(k)

Montana submitted initial SIP revisions to EPA on March 26, 2008, to provide for attainment of the PM_{2.5} NAAQS in the Libby NAA and EPA approved the plan on March 17, 2011 (76 FR 14584). Then on July 14, 2015 (80 FR 40911), EPA approved Libby's reasonable further progress.

2.3. CAA §107(d)(3)(E)(iii) – Determination that the Improvement in Air Quality is Due to Permanent and Enforceable Reductions in Emissions Resulting from Implementation of the SIP and Other Federal Requirements

This section demonstrates that ambient impact reductions in the Libby NAA are both permanent and enforceable. These reductions are a result of SIP and other federal requirements.

The control plan emission inventory was approved by the Board of Environmental Review (BER) and subsequently became federally enforceable through its adoption into the SIP on March 17, 2011 (76 FR 14584). The plan identified two fugitive area sources contributing to PM_{2.5} concentrations in the NAA: wood combustion and tailpipe emissions.

Eighty-two percent of Libby's PM_{2.5} impact during the baseline study year of 2005 was from wood combustion. Wood combustion impacts represented both residential and small commercial space heating, and outdoor open burns. This is the only source category that took credit in the attainment plan for any controls; tailpipe emissions did not take any credit for the federal tailpipe standards or fleet turnover.

Emission reductions from the wood combustion source category are attributed to the county residential wood combustion rules. As stated above, these rules control residential and small commercial wood combustion used for space heating through a wood stove permit program. The rules restrict the installation and operation of wood stove to EPA certified wood stoves and restrict the operation of wood stoves to times with good air quality dispersion. Lincoln County also has outdoor open burning rules that require burns to be permitted and approved to ensure the burns occur during favorable meteorological conditions.

SIP Provisions

The emission inventory below in Table 2.3 identifies the fugitive area sources contributing to PM_{2.5} concentrations in the NAA. The table shows the 2005 actual annual emissions, which are considered the annual baseline emissions for Libby. These baseline emissions do not account for any control plan measures. A roll-forward analysis in the control plan demonstrated the 2010 impact would be 8.37 µg/m³. However, no 2010 annual emission inventory estimate was prepared for the control plan. Table 2.3 shows the current annual emissions in Libby which are from the most recent emission information available for area sources, which is the 2014 National Emission Inventory (NEI).

Table 2.3 – Libby, MT – Summary of Annual PM_{2.5} Emissions

Area Source Categories	2005 Actual Baseline PM_{2.5} Emissions (tons)¹	2014 PM_{2.5} Emissions (tons)²
Road Dust Paved	26.82	1.26
Road Dust Unpaved	5.83	16.17
Residential Wood Burning	166.70	24.35
Locomotive	11.99	5.83
Tailpipe (diesel & non-diesel)	2.43	1.12
Other Combustion ³	1.59	0.93
Construction Dust	1.21	1.40
General Burning ⁴	32.61	12.24
Prescribed Fires ⁴	13.60	35.36
Total	262.78	98.66

1Emissions are based on those found in Table V.7.-4 of 75 FR 55713.

2Area emissions are based on the most current NEI values from 2014.

3Other represents propane, oil, and aviation.

4Emissions are from Libby, Montana, PM-2.5 annual Standard 2005 PM-2.5 Emission Inventory, Table 5.1A.

As shown in Table 2.3, the emissions in 2014 are less than 38 percent of the baseline emissions. The increase in unpaved road dust emission compared to the baseline is likely due to the methodology used to scale the 2014 NEI emissions from Lincoln County to the PM_{2.5} NAA. County emissions were scaled to the NAA based on the ratio of vehicle miles travelled (VMT) in Libby versus the VMT in the county, as detailed in Appendix A. This likely over estimates unpaved road dust within the NAA since most roads are paved within the city. Construction dust is the only other source category showing an increase, although minimal.

The SIP approved attainment plan incorporated permanent and enforceable rules from the Lincoln County Air Pollution Control Program which established rules as described above in Section 1.3 that reduced PM_{2.5} impacts in the NAA. The air pollution control rules in Chapter 1, Subchapters 1 through 4, address solid fuel burning devices, re-entrained road dust control, and outdoor burning regulations. Because these rules were adopted by Lincoln County, the BER, and included in the Montana's SIP, these rules are permanent and enforceable.

The Libby NAA air quality remains protected with federally enforceable air quality rules and permitting regulations. Among the federally enforceable DEQ permitting rules are the Administrative Rules of Montana (ARM) 17.8.901 through 17.8.906 which are *Permit Requirements for Major Stationary Sources or Major Modifications Locating within Nonattainment Areas*. The rules require all new sources or modifications to use the lowest achievable emission rates (LAER). Source must

obtain emission reduction offsets in tons per year (tpy) which provide a positive net air quality benefit in the NAA using a 1 to 1 offset and be from the same source or another emission source within the same NAA. There must be demonstrated improvement to the PM_{2.5} NAA with permanent, quantifiable and federally enforceable emission reductions. A reduction of actual emissions, not potential emissions, must occur before a new source can be permitted to operate.

Montana has a federally enforceable permitting program for minor sources in ARM, Title 17, Chapter 8, Subchapter 7. These rules require sources that emit 25 tpy or more of PM_{2.5} to ensure the NAA is not negatively affected. Beginning in May 2019, Montana began requiring registration of all sized asphalt plants, concrete plants, mineral crushers, and mineral screens. Previously, DEQ's practice for these portable sources was to require more stringent limits and conditions for their operation within a NAA or within 10 kilometers of a NAA to ensure that the portable operations do not result in additional degradation of air quality in the affected NAA. The registration program establishes conservative operational restrictions on these portable sources to prevent degradation of the air quality in NAAs and elsewhere.

These permanent and enforceable regulations have decreased the PM_{2.5} emission impacts in Libby since the initial NAAQS exceedances between 2001 and 2006, while the population of Lincoln County grew by 4.5 percent over the ten-year span from 18,837 in 2000, to 19,687 in 2010, (U.S. Census Bureau). Yet during this same period, the population census for the City of Libby remained nearly unchanged from 2,626 in 2000 to 2,628 in 2010. The US Census Bureau estimates very little change in both the Libby and Lincoln County populations since 2010 with estimated populations of 2,664 and 19,249, respectively in 2017. The NAA encompasses the City of Libby as well as portions of the county, so the population change within the NAA, at best, is a slight increase and yet the permanent and enforceable regulations have kept the PM_{2.5} impacts at or below the annual NAAQS.

Other Federal Requirements

According to the Calcagni memo, to demonstrate the improved air quality is from permanent and enforceable emission reductions, a state shall estimate the percent reduction achieved from federal measures such as the Federal Motor Vehicle Control Program and fuel volatility rules as well as control measures that have been adopted and implemented by the state. The Federal Motor Vehicle Control Program controls tailpipe emissions and evaporative emission standards for new vehicles. Tailpipe impacts were less than 1 percent of the Libby NAA impact during the 2005 baseline year. Although no emission reduction credit was attributed to the permanent and federal enforceable tailpipe regulations, the PM_{2.5} impact reductions are supported by lower vehicle fleet emissions as fleet turnover continues, all while the population of the Libby NAA has experienced minimal growth.

As required by CAA §107(d)(3)(E)(iii), the control measures described in this section are permanent and federally enforceable and have demonstrated improvement of the Libby NAA air quality.

2.4. CAA §107(d)(3)(E)(iv) – Fully Approved Maintenance Plan Under CAA Section 175A

This request for redesignation is being submitted concurrently with an LMP (Section 3.0). As described in CAA Section 175A(c), until a maintenance plan is approved, all SIP requirements for the NAA will remain applicable. Section 3.0 of this document addresses the necessary maintenance plan elements. With the EPA's concurrence, the area will have a fully approved LMP providing for continued attainment of the PM_{2.5} NAAQS for 10 years meeting the requirement of §107(d)(3)(E)(iv).

2.5. CAA §107(d)(3)(E)(v) – Determination that the Department Has Met all Requirements Applicable to the Area Under Section 110 and Part D of the CAA

Prior to redesignation, a state containing a NAA must demonstrate compliance with all requirements applicable to the area under Section 110 and Part D of the Act. This means the state must meet all requirements that applied to the area prior to, and at the time of, the submission of a complete request for redesignation to attainment.

CAA Section 110

Section 110(a) of the CAA contains the general requirements for a SIP. Only Section 110 requirements that are linked with an area's designation are the relevant measures to consider in evaluating a redesignation request. Further, DEQ believes that the other Section 110 elements that are not connected with nonattainment plan submissions and not linked with an area's attainment status are also not applicable requirements for purposes of redesignation, as a state remains subject to these requirements after an area is redesignated to attainment. The requirements of CAA Section 110(a)(2) that are statewide requirements and that are not linked to the PM_{2.5} nonattainment status of the Libby NAA are therefore not applicable requirements for purposes of review of DEQ's redesignation request.

The EPA has previously approved provisions of Montana's SIP that address Section 110 requirements, including provisions addressing PM_{2.5}. The EPA approved the control plan and proposed final revisions for the Libby SIP on March 17, 2011(76 FR 14584). It also demonstrated compliance with the requirements "applicable to the area" under CAA Section 110. CAA Section 110(a)(2) contains the general requirements or infrastructure elements necessary for the EPA approval of the SIP. These requirements include, but are not limited to, submittal of a SIP that has been adopted by the state after reasonable notice and public hearing. The approved SIP described above met these requirements.

Part D, Plan Requirements for NAAs (CAA Section 171, et seq.)

CAA Part D contains requirements applicable to all areas designated nonattainment. PM_{2.5} NAAs must meet the general provisions of Subpart 1 and the specific PM_{2.5} provisions in Subpart 4. The LMP (see Section 3.0) associated with this request for redesignation of the Libby NAA is a SIP revision for an area designated as a NAA and the plan shall meet the applicable requirements of Part D of the CAA. The Libby PM_{2.5} SIP (fully-approved by the EPA in Federal Register: March 17, 2011 (76 FR 14584) shows that the state has satisfied all requirements under section 110(a)(2) of the Act.

CAA Section 172

These provisions contain the general requirements to include NAA documents and revisions in the SIP. These include attainment demonstrations, RACM, reasonable further progress (RFP), inventory data, and permitting requirements. Submittal of a comprehensive PM_{2.5} emissions inventory is required by 40 CFR 51.1008 to meet the requirements of Section 172(c)(3) of the CAA. The Libby NAA PM_{2.5} baseline emissions inventory, which also serves as the attainment year inventory, is being submitted as part of the LMP (Section 3.0), and therefore, is submitted concurrently with this request for redesignation.

CAA Section 173

These provisions outline the requirements related to permitting of air pollution sources in NAAs. Stationary sources of air pollution are subject to the applicable regulations of the ARM, Title 17, Chapter 8. These regulations include:

- Standards of Performance for New Stationary Sources (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPs) promulgated by the EPA (ARM 17.8.102);
- Permit, Construction, and Operation of Air Contaminant Sources (ARM, Title 17, Chapter 8, Sub-chapter 7);
- Prevention of Significant Deterioration of Air Quality (ARM, Title 17, Chapter 8, Sub-chapter 8);
- Permit Requirements for Major Stationary Sources or Major Modifications Locating Within Nonattainment Areas (ARM, Title 17, Chapter 8, Sub-chapter 9);
- Preconstruction Permit Requirements for Major Stationary Sources or Major Modifications Locating Within Attainment or Unclassified Areas (ARM, Title 17, Chapter 8, Sub-chapter 10); and
- Annual Emission Statements and required emissions reporting (ARM 17.8.505).

These requirements were adopted to implement the federally mandated requirements in Sections 110, 172, 173 and 182(a) of the CAA. The EPA has approved these regulations as SIP revisions, as indicated in Table 2.4, below.

Table 2.4 – State of Montana Federally Approved Air Quality Rules

State Rule(s)	Federal Action	Action Reference
ARM 17.8.101 et seq.	approved	60 FR 36715
ARM 17.8.701 et seq.	approved	60 FR 36715
ARM 17.8.801 et seq.	approved	60 FR 36715
ARM 17.8.901 et seq.	approved	60 FR 36715
ARM 17.8.1001 et seq.	approved	60 FR 36715

CAA Section 176(c)

These provisions prohibit federal financing of projects or activities that do not conform to an approved SIP. DEQ adopted and incorporated EPA’s general conformity rule (40 CFR Part 93), on June 13, 2004, at ARM 17.8.1302. The general conformity regulation describes procedures to determine if federally-financed, transportation projects are in conformity with air quality plans. The EPA and the U.S. Department of Transportation have issued regulations regarding criteria and procedures for demonstrating and assuring conformity of transportation improvement programs, long range plans, and individual transportation projects with the requirements of the CAA and the SIP for the specific NAA. Federal actions are handled independently in 40 CFR 93, Subpart B, that prohibit the federal government from providing financial assistance, licensing, permitting or approving activities that do not conform with Montana’s SIP.

Subpart 4, Additional Provisions for Particulate Matter NAAs:

Libby has an approved control plan as required by CAA Section 191(a) for the 1997 annual PM_{2.5} NAAQS. This plan controlled PM_{2.5} impacts from area sources in the NAA. Therefore, DEQ has met the requirements of Subpart 4 of the CAA. Further, as required under Section 191(b) of the CAA, DEQ has a fully-approved New Source Review (NSR), Prevention of Significant Deterioration (PSD), and Part D permitting programs (60 FR 36715).

2.6. Redesignation Request

DEQ requests redesignation of the Libby annual PM_{2.5} NAA to attainment. The criteria applicable to redesignation are addressed in Section 2.0 of this document, above. Concurrent with the request for redesignation, DEQ is providing for maintenance of the PM_{2.5} NAAQS according to the applicable provisions of Section 175A of the CAA (Section 3.0).

3. Libby NAA PM_{2.5} Limited Maintenance Plan

On January 5, 2005 (70 FR 944), the EPA designated Libby as a NAA and on June 2, 2014 (79 FR 31566) the EPA classified Libby as a ‘moderate’ NAA for the PM_{2.5} annual NAAQS. Based on quality-assured monitoring data collected from PM_{2.5} monitoring in the area from 2007 through 2018, the Libby NAA was shown to have attained compliance with the NAAQS. Further the EPA determined on July 14, 2015, that the area had attained the standard (80 FR 40911) by the April 2010 attainment date, based on 2007-2009 data.

Section 2.0 of this document includes DEQ’s formal request for redesignation according to the requirements of Section 107(d)(3)(E) of the CAA. For the Libby NAA to be formally redesignated to attainment, DEQ must submit, and the EPA must approve, a SIP revision providing for maintenance of the PM_{2.5} NAAQS within the affected area for at least 10 years after redesignation. This maintenance plan has been developed in support of DEQ’s request for redesignation according to the EPA’s September 4, 1992 Calcagni Memo for *Procedures for Processing Requests to Redesignate Areas to Attainment*, EPA’s August 9, 2001 memo for “Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas,” applicable provisions of the CAA, additional guidance received from EPA’s Region 8 Air Quality Planning Unit, and the requirements of Section 175A of the CAA.

This maintenance plan addresses the following elements:

- attainment inventory,
- maintenance demonstration,
- control plan,
- monitoring network,
- verification of continued attainment, and
- contingency plan.

3.1. Attainment Inventory

According to the requirements of Section 107(d)(1)(A)(i) and 107(d)(1)(B)(i) and (ii) of the CAA, in establishing the final NAA boundary the EPA determined that the fugitive area sources in Table 2.3 are the major contributing emission sources relevant to the Libby NAA. Table 3.1 below shows the emission source categories from the attainment plan. The methodology for calculating the 2014 NEI emissions from within the Libby NAA from all the 2014 NEI emissions of Lincoln County can be found in Appendix A. The PM_{2.5} emissions in 2014 (see Table 3.1) are similar to the approved 2010 maintenance plan values shown in Table 2.3. Furthermore, as detailed in Section 2.1, on January 31, 2011 (76 FR 5280), the EPA determined that the Libby area attained the standard.

Table 3.1 – Libby NAA 2014 NEI PM_{2.5} Emissions

Emission Source Category	2014 NEI Emissions (tons)¹
Paved Roads	1.26
Unpaved Roads	16.17
Residential Wood Burning	24.35
Locomotives	5.83
Tailpipe Exhaust (diesel & non-diesel)	1.12
Other Combustion ²	0.93
Construction Dust	1.40
General Burning	12.24
Prescribed Fires	35.36
Total	98.66

¹Area emissions are based on the most current NEI values for Lincoln County from 2014 and apportioned to Libby as demonstrated in Appendix A.

²Other represents oil, propane, and aviation.

3.2. Maintenance Demonstration

For this redesignation request to be complete and approvable, the CAA requires that the maintenance plan provide for maintenance of the PM_{2.5} NAAQS for at least 10 years following EPA’s approval of the plan. As stated earlier in this document, attainment of the PM_{2.5} NAAQS has been demonstrated in the Libby area, and this maintenance demonstration will demonstrate continued attainment, or “maintenance” of the PM_{2.5} NAAQS through the year 2031.

For PM₁₀ NAA’s, the EPA developed guidance for a more streamlined maintenance plan approach for those NAAs that were designated ‘moderate’ and that meet certain criteria. This approach was described in the August 9, 2001 guidance memo, “Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas.” The EPA developed this guidance for areas that have been meeting the PM₁₀ NAAQS for 5 years or more, have a ‘moderate’ designation, and have a low risk of future exceedances. This policy was designed to allow both the states and the EPA to timely redesignate areas that are at little risk of PM₁₀ violations.

The guidance describes how the EPA studied PM₁₀ NAAs and found that some moderate PM₁₀ NAA have had a history of low PM₁₀ design values with very little inter-annual variation. The EPA explained that the very small amount of variation between the peaks and means in most of the data indicates a very stable relationship that can reasonably be expected to continue in the future absent any significant changes in emissions. Based on this study of data, the EPA believed they could reliably make estimates about the future variability of PM₁₀ concentrations across the country using a statistical analysis, especially in areas where the amount of emissions is not expected to change. The EPA identified threshold levels of PM₁₀ for which the design values of the studied NAAs did

not exceed. These threshold levels were 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. 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. The guidance allows NAAs to follow a LMP if their design values are below the identified threshold level or below the area specific CDV and the area also can demonstrate limited growth in on-road motor vehicle emissions (including fugitive dust) and pass a motor vehicle regional emissions analysis test. In Attachment A of the guidance memo, "Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas," the EPA describes that a CDV can be calculated for any site with a minimum of five years of data. And furthermore, the EPA states in Attachment A that since this CDV technique is very general, it can be applied to any pollutant with a minimum of five years of valid data.

DEQ has discussed with EPA Region 8 the applicability of following the LMP pathway for the Libby PM_{2.5} moderate NAA. Since the EPA has not done a comprehensive study of PM_{2.5} areas as it had done for PM₁₀, there is no design value threshold available for PM_{2.5}. Determining the Libby CDV is the only option to demonstrate whether Libby's PM_{2.5} design value is unlikely to violate the NAAQS in the future along with demonstrating there will be limited future growth in on-road motor vehicles by passing a motor vehicle regional emissions analysis test.

The following demonstrations show that Libby's PM_{2.5} NAA design value is below the site-specific CDV and that future growth in the area does not exceed the motor vehicle regional emissions analysis test requirements. The LMP will continue to implement the controls of the attainment plan.

Design Value

As described above in Section 2.1, the local design value for Libby is based on averaging three consecutive 3-year averages of monitoring data from 2014-2018. To qualify for a LMP the design value must be below the CDV discussed below.

Using the monitored values, a local design value has been calculated for Libby which is a statistic that describes the air quality relative to the level of the NAAQS. The local design value calculation excludes proposed exceptional events. The excluded values are values greater than 35.4 µg/m³ impacted by wildfires. The design value is calculated over the most recent three consecutive 3-year intervals.

Table 3.2 – Libby’s Recent 5 Years of PM_{2.5} Annual Average Monitoring Results (µg/m³), Excluding Exceptional Events

	2014	2015	2016	2017	2018
PM_{2.5} Annual Average	9.1	11.9	9.8	12.1	11.9

Table 3.3 – Libby’s Recent PM_{2.5} 3-year Annual Average Monitoring Results (µg/m³) from the Past 5 Years, Excluding Exceptional Events

	2014-2016	2015-2017	2016-2018	3-year Avg.
PM_{2.5} 3-year Average	10.2	11.2	11.2	10.9

The 5-year average design value from 2014-2018 is 10.9 µg/m³, as shown above.

Critical Design Value

As described above, the EPA has developed the CDV as an indication of the ‘likelihood of future violations of the NAAQS given the current average design value and its variability’ and applies it to areas that have a minimum of five years of valid data. The process for developing a CDV is outlined in Attachment A of the EPA guidance titled “Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas.”

The equation to calculate a CDV is as followed:

$$CDV = NAAQS / (1 + t_c * CV)$$

Where:

- CDV = Critical Design Value.
- NAAQS = National Ambient Air Quality Standard.
- t_c = Critical t-value corresponding to a probability of exceeding the NAAQS in the future and the degree of freedom in the estimate of the coefficient of variation.
- CV = Coefficient of variation (CV) of the annual design value, calculated as the ratio of the standard deviation and average design values in the past.

The EPA requires that at least five years of data be available to calculate a CDV. Libby experienced a significant data loss in 2011 with less than 50 percent of the daily average values being collected. A minimum of at least 50 percent daily data collection is required for calculating the annual average. DEQ’s data includes the years 2012 through 2018, which represents five 3-year periods of design

values, beginning with the 2012-2014 design value and ending with the 2016-2018 design value. This meets the five-year minimum required years of available data. The design value for each three-year period was calculated by averaging the three annual average values for the periods. Table 3.4 below provides the 3-year period, the annual average value for those years, and the design value for each period. The calculated annual average value excludes the proposed regulatory significant exceptional events for wildfire events whose impact was 35.4 $\mu\text{g}/\text{m}^3$ or greater. Therefore, the design values in Table 3.4 also excludes the proposed regulatory significant exceptional events.

Table 3.4 – PM_{2.5} Design Values from the Past Five 3-year Periods ($\mu\text{g}/\text{m}^3$)

3-year Period	Annual Averages for Each of the 3 Years	Design Value (3-year average)
2012-2014	11.3, 10.9, 9.1	10.4
2013-2015	10.9, 9.1, 11.9	10.6
2014-2016	9.1, 11.9, 9.8	10.2
2015-2017	11.9, 9.8, 12.1	11.2
2016-2018	9.8, 12.1, 11.9	11.2

The CV is calculated as the standard deviation of the five design values divided by the mean of the five design values. The critical t-value was derived by assuming a one-tailed distribution with a tolerable risk factor of 10 percent probability of a NAAQS violation, which matches the method used by EPA to demonstrate a CDV.

The parameter values used for the calculations are as follows:

NAAQS	= 15 $\mu\text{g}/\text{m}^3$
t_c	= 1.533206
Standard deviation of design values (2012-2018)	= 0.46 $\mu\text{g}/\text{m}^3$
Mean of design values (2012-2018)	= 10.7 $\mu\text{g}/\text{m}^3$
Coefficient of Variation [CV= StDev/Mean]	= 0.04
CDV = [NAAQS/(1+t_c*CV)]	= 14.1 $\mu\text{g}/\text{m}^3$

A CDV of 14.1 $\mu\text{g}/\text{m}^3$ for Libby PM_{2.5} is greater than the Libby PM_{2.5} design values based on monitored data from 2012 through 2018.

Regional Motor Vehicle Analysis

To qualify for the LMP option, an area must expect only limited growth in on-road motor vehicle PM_{2.5} emissions (including fugitive dust). This is accomplished by demonstrating that the regional motor vehicle growth value is below the CDV for the area. When adjusted for future on-road mobile emissions, Libby passes a motor vehicle regional emissions analysis test with design values of

11.1 $\mu\text{g}/\text{m}^3$ for the annual analysis. These results are less than the CDV of 14.1 $\mu\text{g}/\text{m}^3$ used as the margin of safety in the LMP guidance for the annual NAAQS.

The equation used to determine eligibility of Libby for the LMP is based on the U.S. EPA guidance titled “Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas.” The regional motor vehicle analysis equation set forth in this guidance is:

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

Where:

- DV = 5-year PM_{2.5} average annual design value (Five 3-year averages spanning 2012-2018), ($\mu\text{g}/\text{m}^3$)
- VMT_{pi} = Projected increase in VMT over the next 10 years (2021-2031), (%)
- DV_{mv} = Product of the design value and the fraction of the inventory represented by on-road mobile sources in the attainment year ($\mu\text{g}/\text{m}^3$); and
- MOS = Margin of safety for PM_{2.5} or CDV, which is 14.1 $\mu\text{g}/\text{m}^3$ for the annual standard as calculated above.

DEQ has assumed the attainment year to be 2018, the year for which the most recent Libby NAA emissions inventory was prepared. The project VMT_{pi} for the next 10 years following projected EPA approval in 2021 (2021-2031) are based on VMT data provided by the Montana Department of Transportation from 2013 through 2017 and projected to 2031 by DEQ (see Appendix A). The annual PM_{2.5} design values were derived from the PM_{2.5} monitoring data collected at the Lincoln County Health Department Annex site for the most recent five 3-year averaging periods spanning 2012-2018. PM_{2.5} values that were greater than 35.4 $\mu\text{g}/\text{m}^3$ due to exceptional events (e.g. wildfires) were excluded from the design value analysis. Given the criteria above, Libby qualifies for the LMP option. Details of the calculations are shown below. The parameter values used for the calculations are as follows:

Table 3.5 – Regional Motor Vehicle Analysis Parameters

Parameter	Annual
DV ($\mu\text{g}/\text{m}^3$)	10.9
VMT _{pi} (2021-2031)	11.56%
% of the 2014 EI from on-road mobile sources in 2014	18.80%
DV _{mv} ($\mu\text{g}/\text{m}^3$)	2.0
Calculated [DV + (VMT_{pi} * DV_{mv})] ($\mu\text{g}/\text{m}^3$)	11.1

As shown, the calculated regional motor vehicle analysis values (11.1 $\mu\text{g}/\text{m}^3$) are less than the annual CDV of 14.1 $\mu\text{g}/\text{m}^3$, and therefore the area passes the regional analysis criteria.

Based on the analyses above, the local design value indicates the Libby NAA is unlikely to exceed the NAAQS and there will be limited future motor vehicle growth in the area. Since local design values and regional motor vehicle analysis values are both below the CDV, Libby qualifies for the LMP option from these analyses by following the pathway established in the “Limited Maintenance Plan Option for Moderate PM_{10} Nonattainment Areas” memo.

3.3. Control Plan

The Libby area has a robust control plan adopted into local ordinances as described above in Section 1.4 designed to control $\text{PM}_{2.5}$. DEQ also has long-standing, SIP-approved major NSR and minor source permitting programs (ARM Title 17, Chapter 8, Subchapters 7, 8, 9, and 10). These administrative rules include provisions for PSD, approved in 60 FR 36715. In conjunction with all SIP-approved requirements of DEQ’s PSD permitting program, the Source Impact Analysis (ARM 17.8.820) requires that “(1) The owner or operator of the proposed source or modification shall demonstrate that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions (including secondary emissions), *would not cause or contribute to air pollution in violation of any national ambient air quality standard in any air quality control region or any applicable maximum allowable increase over the baseline concentration in any area.*” (Emphasis added.)

Further, in conjunction with all SIP-approved requirements of DEQ’s minor source permitting program, ARM 17.8.749, Conditions For Issuance or Denial of Permit, requires that “(3) A Montana air quality permit may not be issued for a new or modified facility or emitting unit unless the applicant demonstrates that the facility or emitting unit can be expected to operate in compliance with the CAA of Montana and rules adopted under that Act, the Federal CAA and rules promulgated under that Act (as incorporated by reference in ARM 17.8.767), and any applicable requirement contained in the Montana SIP (as incorporated by reference in ARM 17.8.767), *and that it will not cause or contribute to a violation of any Montana or national ambient air quality standard.*” (Emphasis added.)

DEQ will continue to implement its SIP-approved major and minor source permitting programs in the Libby maintenance area to ensure that any new or modified (or reopened) industrial source of $\text{PM}_{2.5}$ emissions will not cause or contribute to a subsequent $\text{PM}_{2.5}$ NAAQS violation in the area. Further, any appropriate changes to the ARM will be submitted to the EPA for approval as a SIP revision.

3.4. Monitoring Network

DEQ has historically operated the “Libby” $\text{PM}_{2.5}$ monitor within the Libby NAA (monitor site location 30-053-0018).

3.5. Verification of Continued Attainment

DEQ intends to continue operating the Libby PM_{2.5} monitor (monitor site location 30-053-0018) or an approved alternatively located monitor until such a time that an approved alternative monitoring method is agreed upon.

3.6. Contingency Plan

As required by Section 175A(b) of the CAA, DEQ will submit to the EPA, eight years after redesignation, a revision of this maintenance plan. This revision will contain DEQ's plan for maintaining the 1997 annual PM_{2.5} NAAQS for 10 years beyond the first 10-year maintenance period following redesignation.

As discussed in Section 3.2 of this document, any new source planning to locate within the maintenance area or existing source proposing a significant increase in PM_{2.5} emissions would be subject to Montana's SIP-approved major NSR and minor source permitting programs promulgated under ARM Title 17, Chapter 8, Subchapters 7, 8, 9, and 10. These permitting programs require a demonstration of NAAQS compliance prior to construction and operation of the source.

Section 175(A)(d) of the CAA requires that the maintenance plan contains contingency provisions to assure that the state will promptly correct any violation of the PM_{2.5} NAAQS that may occur after the redesignation of the area to attainment. The EPA's redesignation guidance notes that the state is not required to have fully adopted contingency measures that will take effect without further action by the state. As such, the contingency plan should ensure that the state has the capacity to adopt the contingency measures expediently if the need were triggered. Therefore, the primary elements of this contingency plan involve the tracking and triggering mechanisms to determine when contingency measures would be necessary and a process for implementing appropriate control measures.

Tracking

The tracking plan for the Libby maintenance area will consist of monitoring and analyzing PM_{2.5} concentrations. In accordance with 40 CFR Part 58, DEQ will continue to operate the Libby monitor (30-053-0018) or an approved alternatively located monitor until such a time that an approved alternative monitoring method is agreed upon.

Trigger and Response

Triggering of the contingency plan does not automatically require a revision of the SIP, nor is the area necessarily redesignated once again to nonattainment if a PM_{2.5} exceedance occurs. Instead, DEQ will have an appropriate timeframe to correct the violation with implementation of one or more adopted contingency measures. If violations continue to occur, additional contingency measures will be adopted until the violations are corrected.

Upon notification of a PM_{2.5} exceedance, DEQ and local government in the Libby area will develop appropriate contingency measure(s) intended to prevent or correct a violation of the PM_{2.5} standard. Information about historical exceedances of the standard, the meteorological conditions related to the recent exceedance(s), and the most recent estimates of growth and emissions will be reviewed. The possibility that an exceptional event occurred will also be evaluated. Under the 2016 revisions to the Treatment of Data Influenced by Exceptional Events Rule (81 FR 68216), DEQ would confer with EPA Region 8 regarding whether the flagged event would meet the criteria of a regulatory decision, and if so, a determination would be made on whether to move forward with producing a demonstration.

This process will be completed within twelve months of the exceedance notification. If a violation of the PM_{2.5} NAAQS has occurred, DEQ and local government will review the current control plan. If it is determined that the implementation of current local contingency measures will prevent further exceedances or violations, no changes to the control plan will be made. If, however, DEQ and the local government finds locally adopted control measures to be inadequate, DEQ and the local government will adopt state-enforceable measures as deemed necessary by DEQ to prevent additional exceedances or violations. Measures to be considered could include, implementation of Libby's Contingency Rules 75.1.208, and 75.1.307, the use of deicers, additional street cleaning, etc.

3.7. Conformity for LMP Areas

The Federal transportation conformity rule (40 CFR Parts 51 and 93, subpart A) and general conformity rule (40 CFR Part 93, subpart B) apply to nonattainment and maintenance areas. Typically, under either rule, an acceptable method of demonstrating that a federal action conforms to the applicable SIP is to demonstrate that expected emissions from the planned action are consistent with the emissions budget for the area. The EPA's LMP policy does not exempt an area from the need to demonstrate conformity; however, it allows the area to do so without submitting a transportation conformity Motor Vehicle Emissions Budget (MVEB) that would then need to be analyzed under 40 CFR 93.118. This is because data demonstrates no violation of the NAAQS will occur when accounting for reasonable growth projections for mobile sources. For transportation purposes, the emissions in a qualifying LMP area need not be capped for the maintenance period and thus no regional emissions analysis by the applicable Metropolitan Planning Organization is required. In 76 FR 14584, the EPA states that Libby PM_{2.5} does not have to perform a regional emissions analysis for either direct PM_{2.5} and oxides of nitrogen (NO_x) as part of future conformity determinations for the 1997 annual PM_{2.5} NAAQS. The EPA found that on-road directly emitted PM_{2.5} and NO_x were insignificant to regional transportation conformity purposes.

Regional transportation conformity is presumed due to the limited potential for emissions growth in the area during the LMP period. A regional emissions analysis and associated regional conformity requirements (40 CFR 93.118) are no longer necessary. Similarly, Federal actions subject to the general conformity rule would automatically satisfy the "budget test" specified in 40 CFR

93.158(a)(5)(i)(A) for the same reasons. However, since Libby will still be a maintenance area after redesignation, transportation conformity determinations are still required for transportation plans, programs and projects. The conformity determination for transportation plans and programs should state that a regional emission analysis is not required because the area has an approved LMP. Transportation plans and programs should still be made available for public review. The portions of the conformity rule that still apply are found in 40 CFR 93.112 and 93.113. In addition, transportation projects would still need to meet the criteria for PM_{2.5} hot spots (40 CFR 93.116 and 93.123) and for PM_{2.5} control measures (40 CFR 93.117). DEQ will continue to work with the affected jurisdictions and interested parties to develop an evaluation criteria and process to meet these transportation conformity requirements.

4. Public Participation

According to the applicable requirements of 40 CFR 51.102, Public Hearings, DEQ must provide the affected public with notice, opportunity for comment, and the opportunity to request a hearing regarding DEQ's request for redesignation and associated maintenance plan for the Libby PM_{2.5} NAA.

On **DATE**, 2020, DEQ issued a 30-day public notice, meeting all the above referenced public participation criteria. **A public hearing was not requested. No public comments were received during the public comment period. A copy of the public notice is included in Appendix B for reference.**

Or

On **DATE, 2020**, DEQ issued a 30-day public notice, meeting all the above referenced public participation criteria. Also, a public hearing was held on **DATE**, during the public notice period, which concluded on **DATE**. Public comments were received during the public notice period. These comments and DEQ's responses as well as a transcript of the **DATE** public hearing are included in **Appendix B** for reference.

5. Conclusion

The Libby NAA has attained the 1997 annual PM_{2.5} NAAQS over the past 12 years. Further EPA determined that the area has attained the 1997 annual PM_{2.5} standard on July 14, 2015 (80 FR 40911), based on data from 2007-2009. Current NAA PM_{2.5} emissions (2014) are less than the control plan baseline year emissions in 2005. The current impacts are not expected to change much because:

- the population has remained constant since 2000,
- there is expected to be some improvement to vehicle fleet emissions in the NAA,
- the Lincoln County Air Pollution Control Rules restricting fugitive emissions, and
- DEQ has a permitting program in place for major and minor industrial sources.

These factors will ensure compliance with the PM_{2.5} NAAQS.

Further, DEQ has demonstrated compliance with all applicable provisions of the CAA for the redesignation and maintenance of the 1997 annual PM_{2.5} NAAQS in the Libby NAA.

Documentation to that effect is contained herein.

Therefore, DEQ requests formal redesignation of the Libby PM_{2.5} NAA to attainment (Section 2.0) concurrent with EPA approval of the associated LMP (Section 3.0) ensuring ongoing PM_{2.5} NAAQS compliance in the area.

6. References

- Esworthy, Robert, *CRS Report for Congress: Particulate Matter (PM_{2.5}): Implementation of the 1997 National Ambient Air Quality Standards (NAAQS)*, Order Code RL32431, https://www.everycrsreport.com/files/20071004_RL32431_852f0f5d3312de358139eb735899f185c42497b7.pdf, Updated October 4, 2007.
- EPA, 1992, *Memorandum: Procedures for Processing Requests to Redesignate Areas to Attainment*, by John Calcagni, September 4, 1992.
- EPA, 2001, *Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas*, by Lydia Wegman, August 9, 2001.
- EPA, 2019, *Memorandum: Additional Methods, Determinations, and Analyses to Modify Air Quality Data Beyond Exceptional Events*.
- U.S. Census Bureau, Population of Libby, MT and Lincoln County, <https://population.us/mt/libby/> (November 2, 2018).
- U.S. Census Bureau, American FactFinder, Community Facts, https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk (April 1, 2019).

APPENDIX A
LIBBY PM_{2.5} EMISSION INVENTORY

DEQ has developed an emission inventory for the Libby PM_{2.5} NAA within Lincoln County. The source of the emission inventory is the 2014 NEI. The NEI catalogs emissions from 60 various sources for criteria pollutants and hazardous air pollutants (HAPs). However, the NEI only reports to county level resolution. The emissions listed in the table below are combined for all of Lincoln County, not just the NAA. This list is limited to only those sectors used in the attainment plans for each area.

Table 1. 2014 NEI Data for Lincoln County by Sector.

PM_{2.5} Emissions		
Sector	Tons/Year	Percent
Unpaved Road Dust	421.11	18.15%
Paved Road Dust	32.92	1.42%
Tailpipe (non-diesel)¹	15.38	0.66%
Tailpipe (diesel)²	13.67	0.59%
Woodstoves	51.19	2.21%
Locomotives	46.62	2.01%
Aircraft	0.53	0.02%
Construction Dust	2.95	0.13%
General Burning³	25.74	1.11%
Prescribed Fire	1,709.23	73.67%
Other Heating (oil and propane)⁴	0.84	0.04%
Total	2,320.16	100.00%

1 Non-Diesel emissions from “Mobile - On-Road non-Diesel Light Duty Vehicles” (10.79 tons/year), “Mobile - Non-Road Equipment – Gasoline” (4.47 tons/Year), and “Mobile - On-Road non-Diesel Heavy Duty Vehicles” (0.11 tons/year).

2 Diesel emissions from “Mobile - On-Road Diesel Heavy Duty Vehicles” (8.11 tons/year), “Mobile On-Road Diesel Light Duty Vehicles” (2.06 tons/year), and “Mobile – Nonroad Equipment Diesel” (3.50 tons/year).

3 General Burning emissions from the “Waste Disposal” sector.

4 Includes: Fuel Comb - Industrial Boilers, ICEs – Oil, Fuel Comb - Residential – Oil, Fuel Comb - Residential – Other, Fuel Comb - Industrial Boilers, ICEs – Other, Fuel Comb - Comm/Institutional – Oil, and Fuel Comb - Comm/Institutional – Other.

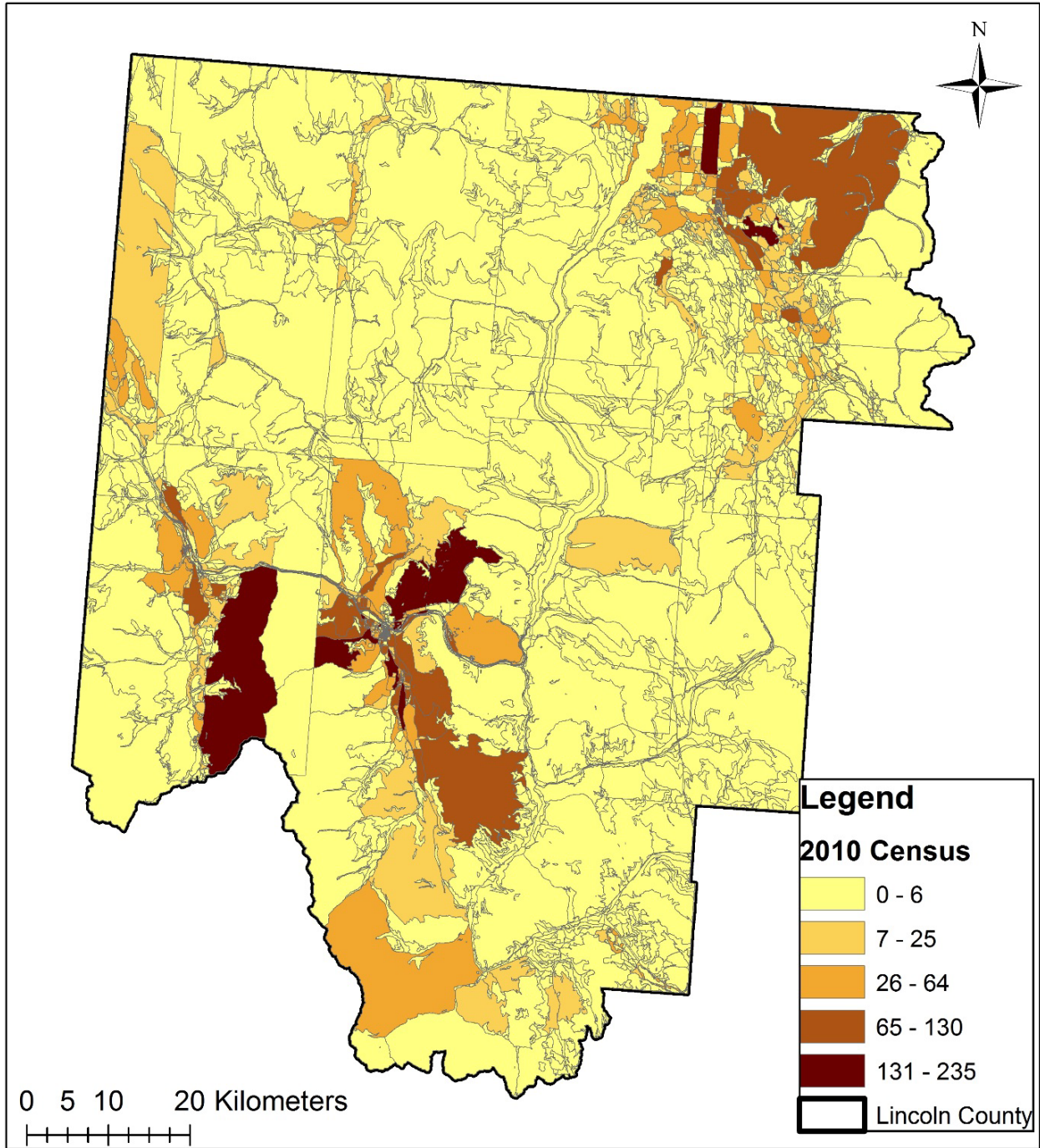
This document will outline the methodology for scaling the county level emissions to the Libby nonattainment area. These methods vary by sector.

Fuel Combustion, Construction Dust, and General Burning Emission Calculations

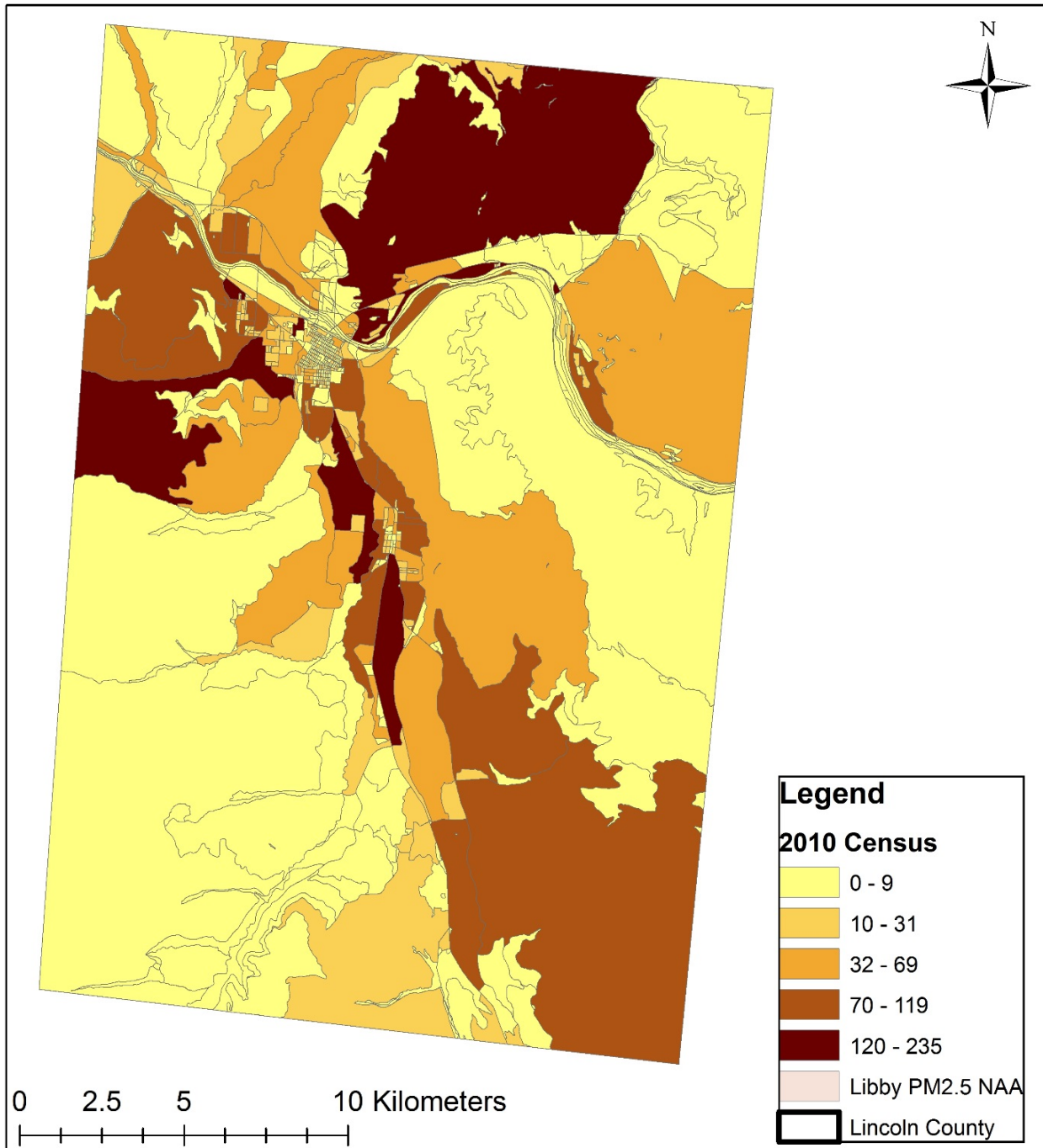
Fuel combustion source emissions, including commercial and industrial natural gas, residential natural gas, and residential wood, construction dust, and general burning are available at the county level. There are no direct emission calculations within the NAA. Since these three sectors are linked to population, the 2010 census tract data was used to estimate an appropriate scaling factor.

The NAA represents the more populated part of the county. Below shows the census track data for the county, with a higher population in the NAA and surrounding areas, compared to the more rural parts of the county.

Lincoln County Census Track Data



Libby Nonattainment Area



The table below shows the 2010 population totals of the county and the NAA. This shows that the PM_{2.5} NAA in Libby makes up 47.6% of the county population. This method uses the percent of county population within the NAA to scale the fuel combustion emissions, general burning, and construction dust. The table below shows the scaled emission estimated for each sector using this approach.

Table 2. Fuel Combustion Emission Estimate.

	2010 Pop.	% of County	2014 Emissions (tons/year)			
			Fuel Combustion – Oil and Other ¹	Fuel Combustion - Residential – Wood	General Burning	Construction Dust
Total County	19,823	100.0%	0.84	51.19	25.74	2.95
Libby NAA	9,429	47.6%	0.40	24.35	12.24	1.40

1 Includes: Fuel Comb - Industrial Boilers, ICEs – Oil, Fuel Comb - Residential – Oil, Fuel Comb - Residential – Other, Fuel Comb - Industrial Boilers, ICEs – Other, Fuel Comb - Comm/Institutional – Oil, Fuel Comb - Comm/Institutional – Other

Road Dust and Vehicle Emission Calculations

A reasonable emissions estimate from paved and unpaved road dust, mobile on-road gasoline light duty vehicles, and diesel emissions, including heavy duty, light duty, and non-road vehicles, would be scaling the NEI emissions to the ratio of VMT within the county to the VMT in the NAA.

Unfortunately, VMT data within the NAA is not available. The method outlined below demonstrates the best available estimate to scale county-level vehicle emissions to the NAA within Lincoln County.

2017 daily VMT data is available through the Montana Department of Transportation for Lincoln County and the Libby urban area. The Libby urban area is not identical to the NAA, but the best available representation of the NAA. The table below shows the total daily VMT in the county compared to the Libby urban area in 2017 and the percentage of these VMT within Libby urban area.

Table 3. 2017 VMT Data by County and City.

	2017 Daily VMT	Percent of County
Lincoln County	540,188	100%
Libby Urban Area	20,745	3.8%

Based on the percentage of VMT in Libby relative to the county, a 3.8% scaling applies to all roadway emissions in Lincoln County. Table 4 estimates representative roadway emissions by source category for the Libby NAA.

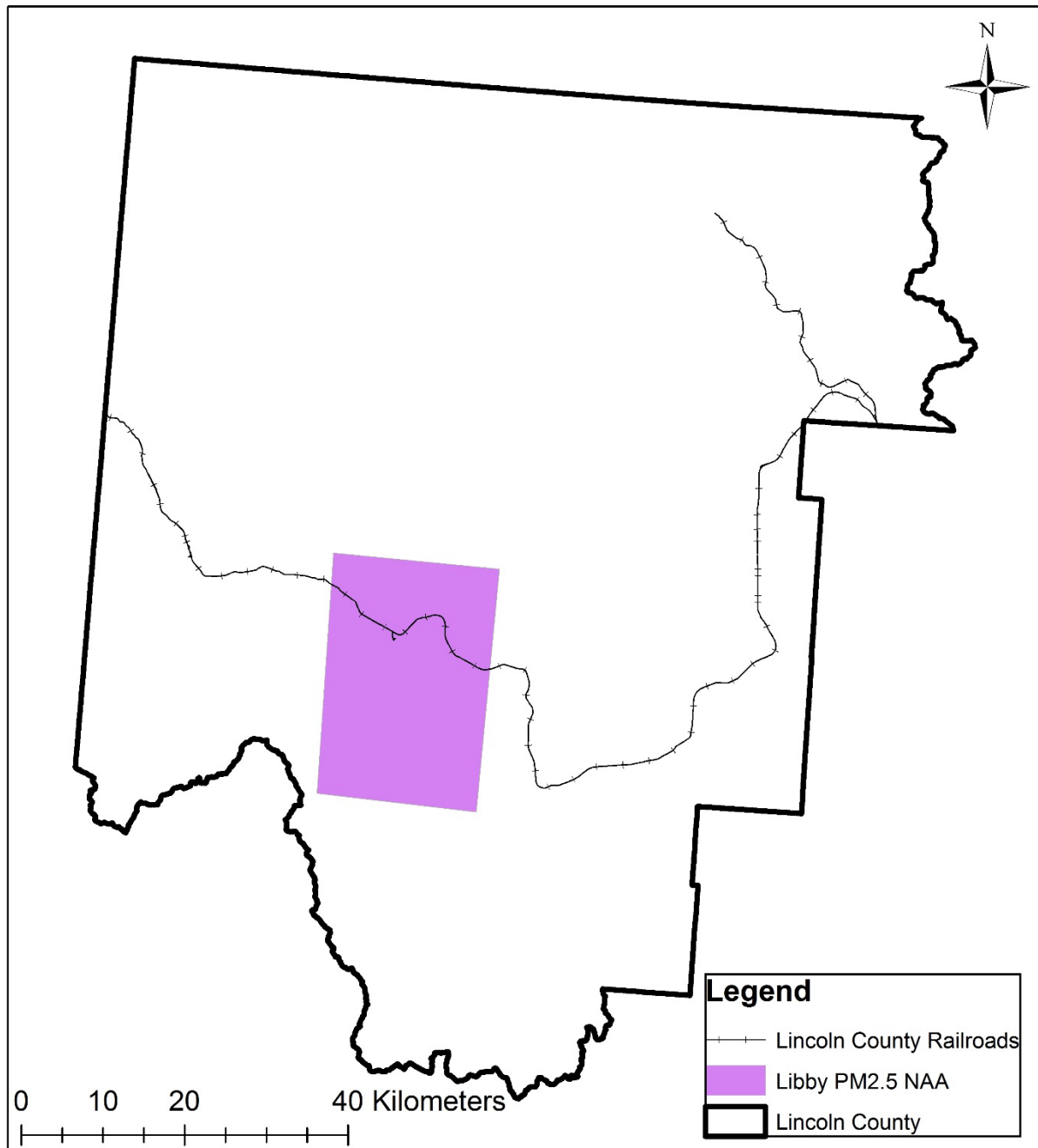
Table 4. Roadway Emission Estimates Based on VMT Scaling.

Source	Lincoln County (2014 NEI) (tons)	Libby Urban Area (tons)
Paved Road Dust	32.92	1.26
Unpaved Road Dust	421.11	16.17
Road Dust (paved & unpaved) Total	454.03	17.44
Mobile – On-road Gasoline LDV	10.80	0.41
Mobile – Non-road Equipment – Gasoline	4.47	0.17
Mobile – On-Road Non-diesel Heavy Duty Vehicles	0.11	0.00
<i>Tailpipe (non-diesel) Total</i>	<i>15.38</i>	<i>0.59</i>
Mobile – On-road Diesel Heavy Duty Vehicles	8.12	0.31
Mobile – On-road Diesel Light Duty Vehicles	2.06	0.08
Mobile – Non-road Equipment – Diesel	3.50	0.13
<i>Tailpipe (diesel) Total</i>	<i>13.67</i>	<i>0.53</i>
Tailpipe (diesel & non-diesel) Total	29.05	1.12
Road Emissions Total	483.08	18.55

Locomotive Emission Calculation

A railroad runs through Lincoln County, including the NAA. The location of the railroad track is shown below.

Lincoln County Railroad Tracks



The locomotive emissions are available at the county level. Emission data within the NAA is not available. Since the key industrial sources are no longer active in the Libby NAA, industrial railroad use, including loading and unloading, and idling is expected to be minimal. There is an Amtrak station in Libby with one eastbound and one westbound train daily. Since most of the locomotive traffic through the NAA is not expected to stop, the emissions were scaled based on the length of track in Lincoln County versus the NAA.

Table 5. Locomotive Emission Estimate.

	Track Length (miles)	% of County	Scaled Emissions (tons/year)
Lincoln County	144	100.0%	46.62
Libby NAA	18	12.5%	5.83

Aviation Emission Calculation

The Libby Airport is located within the PM_{2.5} NAA. Therefore, 100% of the 2014 NEI aviation PM_{2.5} emissions for Lincoln County (0.53 tons) were assigned to the NAA.

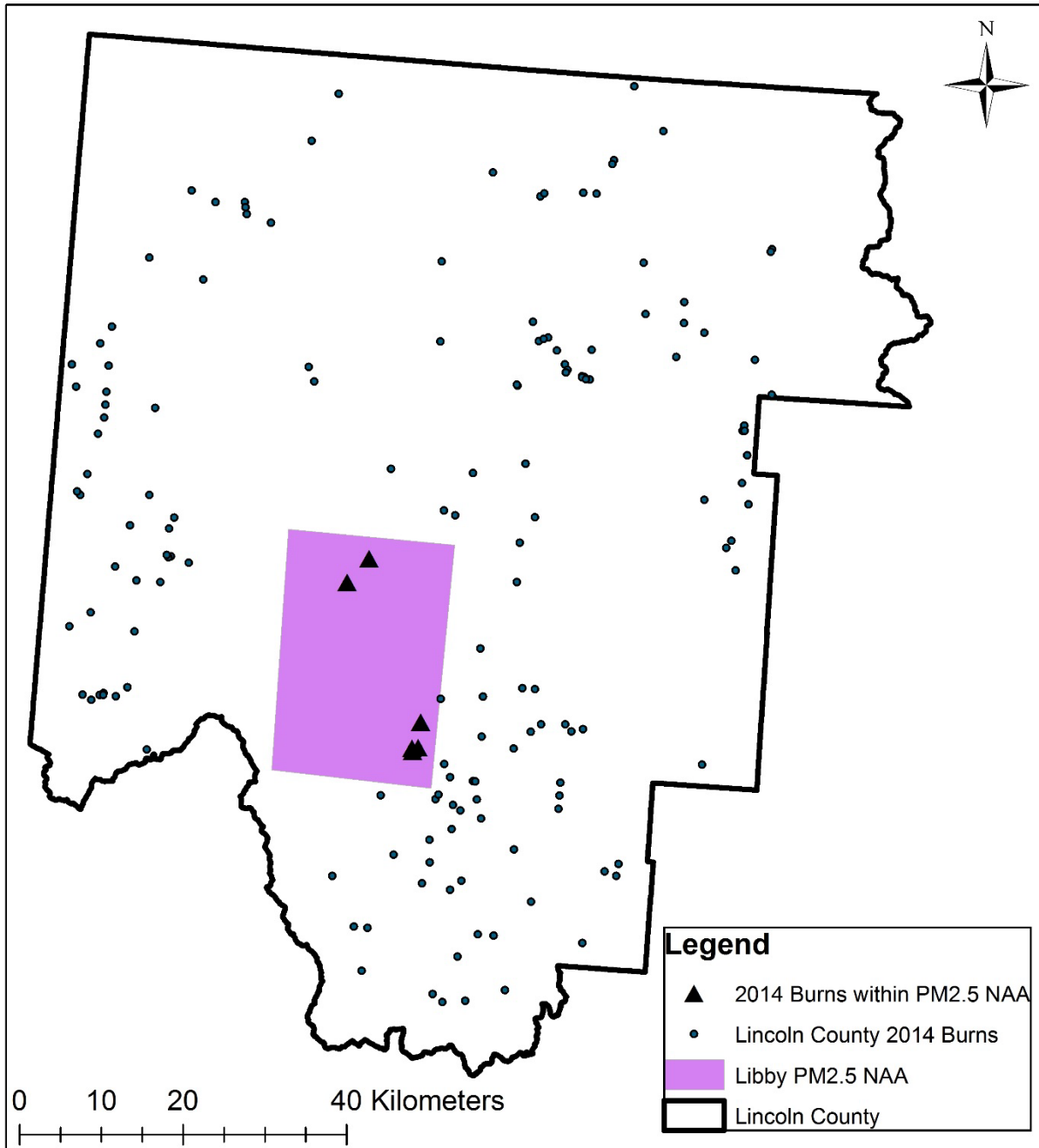
Prescribed Fire Emission Calculation

There is a significant amount of prescribed burning conducted within Lincoln County, totaling over 1,700 tons of PM_{2.5} in 2014. Montana DEQ’s Open Burning Rules require all major burners to report the location and amount burned each year. To determine the percentage of prescribed fire emissions within the NAA compared to the county, DEQ looked at the location of all 2014 major open burns in Lincoln County. DEQ tracks acres burned and tons of material consumed per acre, allowing the DEQ to estimate total tons of material consumed. The tons of material consumed within the NAA compared to outside the NAA was used to scale the emissions. Table 6 shows the estimated PM_{2.5} emissions from prescribed fire in the NAA. The graphic below shows the location of the burns in Lincoln County.

Table 6. 2014 Prescribed Fire Emission Estimate.

	Total Tons Consumed	Percent of Tons Consumed	Prescribed Fire Emissions (tons/year)
Lincoln County	131,582	100.0%	1709.23
Libby NAA	2,722	2.1%	35.36

Lincoln County 2014 Prescribed Burns



Projected Motor Vehicle Activity in Libby

The daily vehicle miles traveled (DVMT) for Libby from 2011 through 2017 are based on data from the Montana Department of Transportation and shown in Table 5. The annual growth rate has been calculated for purposes of projecting the DVMT by the end of the maintenance period. Two annual growth rates have been calculated for the years 2011 through 2017, and 2013 through 2017. The

shorter 5-year time frame shows a larger growth rate and has been selected to conservatively project future vehicle activity in Libby.

Table 7. Libby Compound Annual DVMT Growth Rates.

Year	Libby DVMT in City Limits	Compound Annual DVMT Growth Rate for 2011 through 2017	Compound Annual DVMT Growth Rate for 2013 through 2017
2017	20,745	-0.18%	1.10%
2016	19,907		
2015	19,079		
2014	19,381		
2013	19,860		
2012	20,839		
2011	20,967		

Using the 2013-2017 annual DVMT growth rate, the Libby area vehicle activity has been projected to the end of the expected maintenance period, 2031. Based on the projected vehicle activity there will be an 11.56 percent increase in vehicle activity in Libby during the maintenance period.

Table 8. Projected Libby Vehicle Activity Throughout the Expected Maintenance Period

Year	DVMT in Libby	10-Year Growth of DVMT _{pi}
2017	20,745	11.56%
2018	20,974	
2019	21,204	
2020	21,438	
2021	21,673	
2022	21,912	
2023	22,153	
2024	22,397	
2025	22,643	
2026	22,892	
2027	23,144	
2028	23,398	
2029	23,656	
2030	23,916	
2031	24,179	

APPENDIX B

**PUBLIC NOTICE DOCUMENTATION, TRANSCRIPT OF PUBLIC HEARING,
COMMENTS, AND DEQ'S RESPONSE TO COMMENTS**