

**REQUEST FOR REDESIGNATION OF THE
WHITEFISH PM₁₀
NONATTAINMENT AREA
&
ATTAINMENT AREA LIMITED
MAINTENANCE PLAN**



September 2020



Air Quality Bureau

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ACRONYMS

AIRS	Aerometric Information Retrieval System
ARM	Administrative Rules of Montana
BER	Board of Environmental Review
CAA	Federal Clean Air Act
CDV	Critical Design Value
CMB	Chemical Mass Balance
DEQ	Montana Department of Environmental Quality
DV	Design Value
EPA	U.S. Environmental Protection Agency
FCHE	Flathead County Health Department
FR	Federal Register
LMP	Limited Maintenance Plan
MDT	Montana Department of Transportation
MOS	Margin of Safety
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
PM ₁₀	Particulate Matter of 10 Microns or Less
PSD	Prevention of Significant Deterioration
RACM	Reasonable Available Control Method
RACT	Reasonably Available Control Technology
RFP	Reasonable Further Progress
SIP	State Implementation Plan
tpy	tons per year
VMT	Vehicle Miles Traveled
µg/m ³	micrograms per cubic meter

REQUEST FOR REDESIGNATION OF THE WHITEFISH PM₁₀ NONATTAINMENT AREA AND APPROVAL OF A LIMITED MAINTENANCE PLAN

1. INTRODUCTION

The purpose of this document is to formally request redesignation of the Flathead County (Whitefish area) nonattainment area (NAA) for particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) from ‘nonattainment’ to ‘attainment’ with a limited maintenance plan (LMP). This document supports the request by demonstrating each of the redesignation 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 PM₁₀ 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 PM₁₀ NAAQS on July 1, 1987 (52 Federal Register (FR) 24634). The primary (health-based) standards were set at 150 micrograms per cubic meter (µg/m³), not to be exceeded more than once per year on average over a 3-year period, and 50 µg/m³ annual arithmetic mean, averaged over 3 years. The secondary (public welfare-based) standards were set the same as the primary standard.

On October 19, 1993, in 58 FR 53886, the EPA designated a portion of Flathead County, including the City of Whitefish and its vicinity, from ‘unclassified’ to a ‘moderate’ PM₁₀ NAA for the 24-hour PM₁₀ NAAQS, effective November 18, 1993. This designation resulted from eight exceedances of the 24-hour PM₁₀ NAAQS recorded between February 4 and March 13, 1992, ranging from 163 to 333 µg/m³. Following the NAA designation, Whitefish had five exceedance of the 24-hour PM₁₀ NAAQS in 1994. Since this time, the Whitefish area has always achieved the annual PM₁₀ NAAQS.

On June 26, 1997, Montana's Governor Racicot submitted the initial Whitefish control plan to EPA for adoption into the Montana SIP. This submission included the Flathead County Air Pollution Control Program of June 20, 1997 (40 CFR 52.1370(66)(ii)(A)). EPA subsequently requested that Montana withdraw all but the control measures and enforceability chapters of the PM₁₀ control plan to align with EPA's policy to redesignate NAAs under an administrative revocation policy. So, on February 28, 1999, Governor Racicot requested withdrawal of the June 26, 1997 submission except for the Board of Environmental Review (BER) adopted control strategies and enforceability chapters. Subsequently, a court decision concerning the validity of the revised NAAQS eliminated the administrative revocation process. It was then determined that Montana could request approval of the corrected Whitefish PM₁₀ control plan and emission inventory under the Clean Data Areas Approach policy. On June 13, 2000, Governor Racicot submitted a request for approval of a revised Whitefish NAA control plans and emissions inventory. On April 24, 2008 (73 FR 22057), EPA approved the Whitefish control plan submissions of June 26, 1997 and June 13, 2000.

Whitefish is a small, rural community located in the northwest corner of the Flathead Valley in Flathead County. The county is located in northwestern Montana as shown in Figure 1.1. The city sits on the valley floor at the south end of Whitefish Lake at about 3,000 feet. The Whitefish Range of mountains sits to the north and east sides of the city and the Salish Mountain Range due west; both ranges have peaks reaching higher than 6,000 feet. The large Flathead Valley extends south from Whitefish for over 50 miles. Figure 1.2 shows the rectangular NAA and the irregular outline of the City of Whitefish which extends beyond the NAA in a few directions.

The NAA is comprised of the area inside of these Universal Transverse Mercator (UTM) coordinates:

695000 mE, 5370000 mN,
east to 699000 mE, 5370000 mN,
south to 699000 mE, 5361000 mN,
west to 695000 mE, 5361000 mN, and
north to 695000 mE, 5370000 mN.

Particulate monitoring in Whitefish dates back to the 1980's. Total Suspended Particulate (TSP) sampling was conducted from 1981 to 1983, which showed compliance with the TSP NAAQS. Since 1991, PM₁₀ monitoring data has been collected in Whitefish and this data 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. The first PM₁₀ monitor was installed in the central business district at Markus Foods, 9 Baker Avenue (station number 30-029-0039) in April 1991. Numerous exceedances were recorded, and a source apportionment study conducted between January 1993 and March 1994 indicated that re-entrained road dust was the largest particulate source. An eleven-site saturation study was conducted from February to April of 1993 that confirmed the Markus Foods site showed the maximum concentration. Structural changes at the Markus Foods site and a growing

roasted chicken business nearby forced the station closure in March 2001. In September 2001, a replacement site was established off U.S. 93, at the end of 10th Street, off Park Avenue (station number 30-029-0009), where it currently operates.

Figure 1.1 – Flathead County, Montana

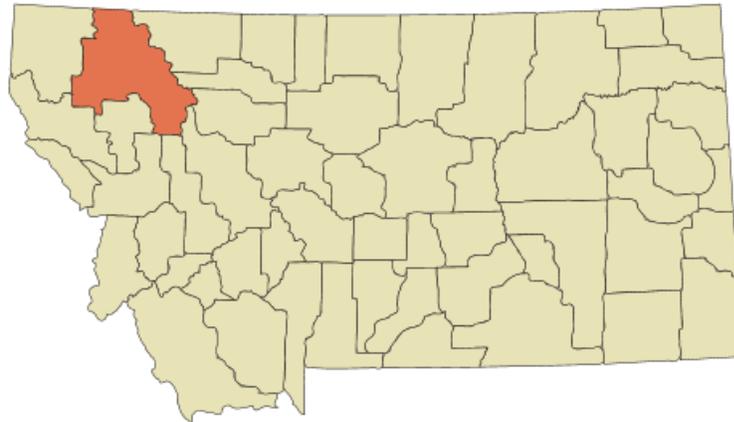
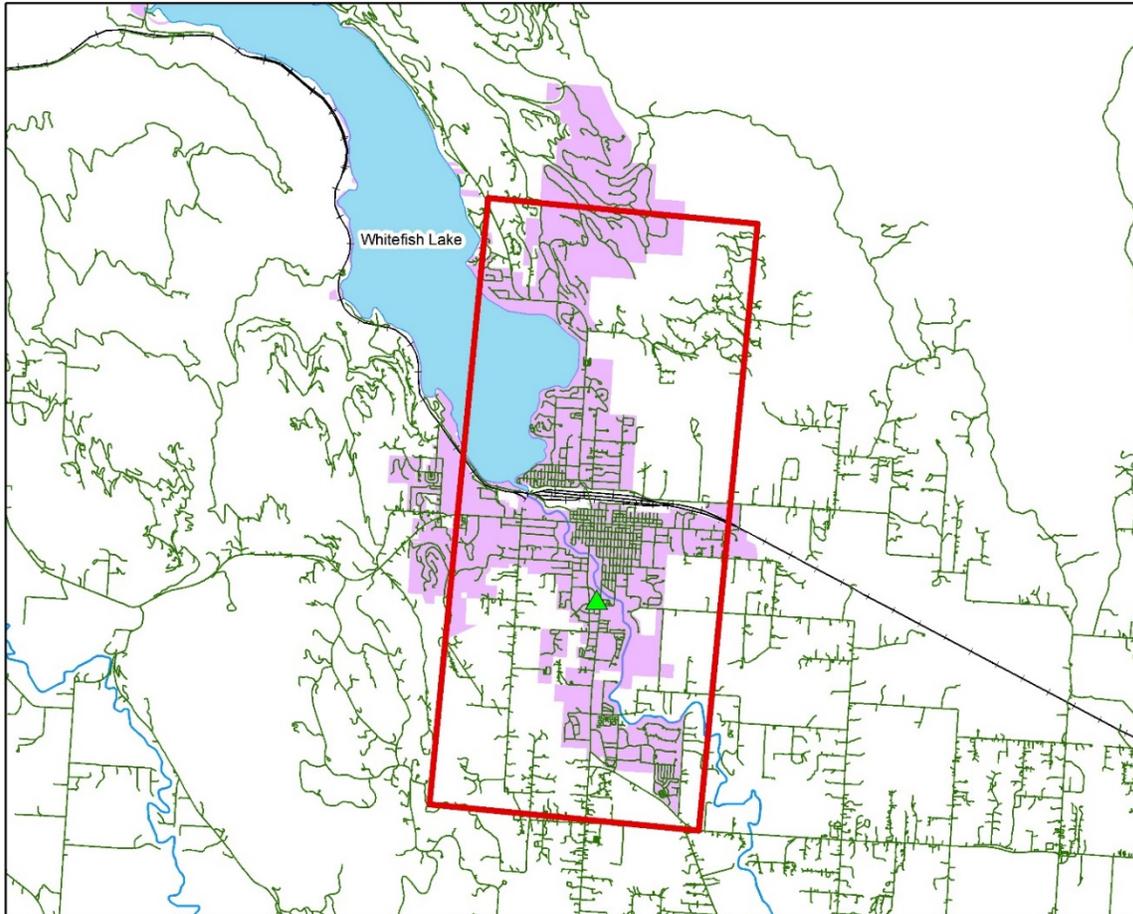


Figure 1.2 – Whitefish PM₁₀ NAA Boundary

Whitefish Nonattainment Area



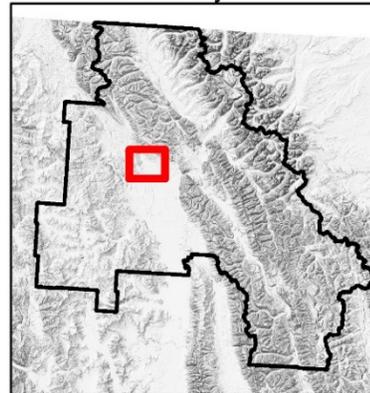
0 1 2 4 Kilometers

Legend

-  PM10 Monitor
-  Whitefish NAA
-  Roads
-  Railroads
-  Incorporated City of Whitefish



Flathead County



Extent of larger map shown in red

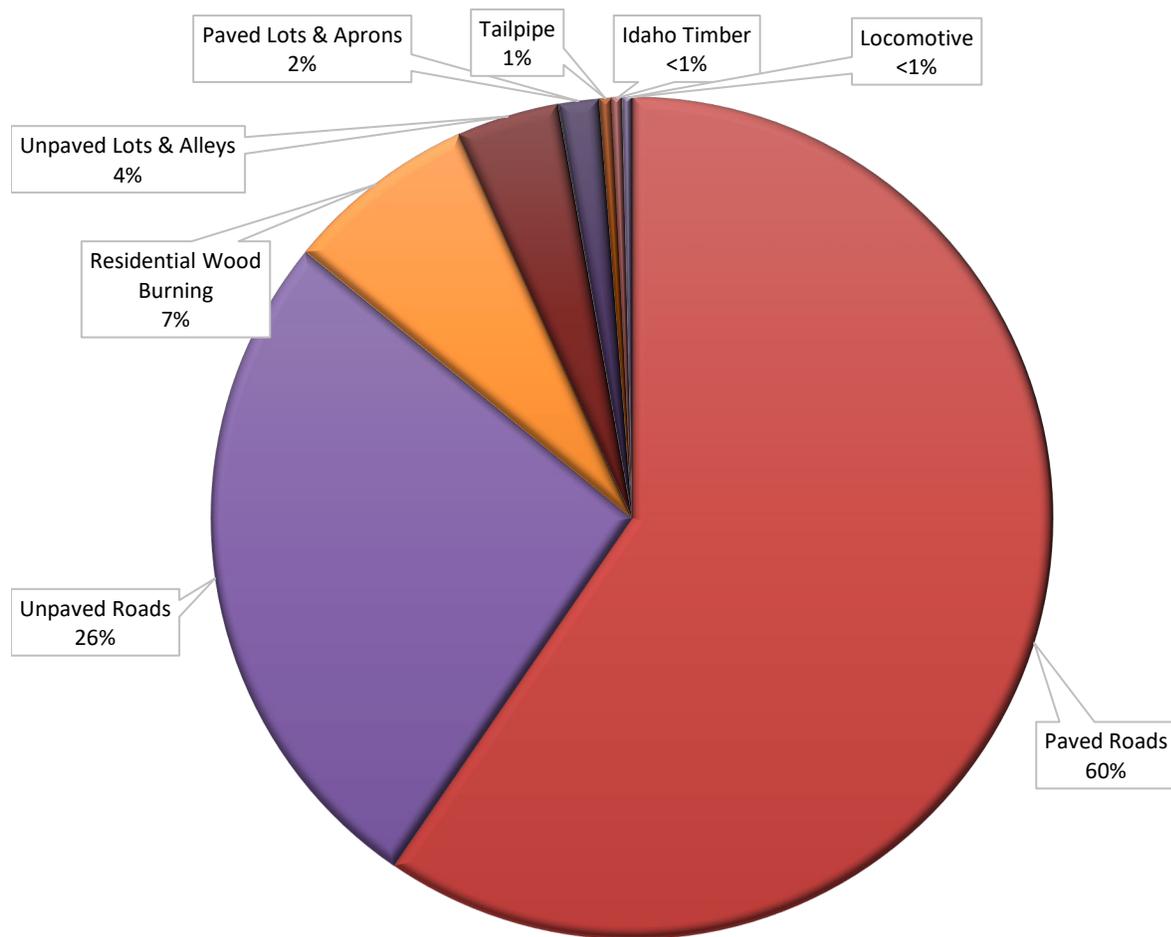
Much of the commercial development of Whitefish is along MT Highway 93 that lies from the middle of the southern boundary to the center of town and then exits the NAA in the middle of the western boundary. Additional commercial development sits in the center of the NAA running north-south along Central Avenue and Baker/Wisconsin Avenue. Residential development is generally located immediately adjacent to these commercial districts within the NAA. The one large industrial source addressed by the implementation plan was the Idaho Timber Company sawmill that was situated several blocks south of Whitefish Lake.

1.2. Historical Sources of PM₁₀

To develop strategies to reduce PM₁₀ emissions within the newly identified NAA, Montana Department of Environmental Quality (DEQ) investigated what the major emission sources were in the area during the 1993 baseline year. The Whitefish PM₁₀ implementation plan included a gaussian dispersion modeling analysis with supporting documents from a Whitefish wood stove survey, a chemical mass balance (CMB) analysis, an optical microscopy report, and the baseline emission inventory. The approved implementation plan consists of an emission control plan that controls fugitive dust emissions from roads, parking lots, construction and demolition projects, and barren ground. Only one industrial source, Idaho Timber Company, located in the Whitefish city limits was identified as contributing to PM₁₀ impacts.

As shown in the June 26, 1997 SIP submittal, the majority of emissions are from area sources. The industrial source contributed less than 1 percent of the emissions. Re-entrained road dust from paved and unpaved roads had the largest contribution at 86 percent of the annual emissions. A breakdown of 1993 baseline emission sources is shown in Figure 1.3. The 1997 submitted implementation plan also described that 91.8 percent of the PM₁₀ source contribution was crustal emissions while 8.2 percent were from combustion emissions.

Figure 1.3 – 1993 PM₁₀ Emissions in Whitefish During Control Plan Development



1.3. Control Plan Details

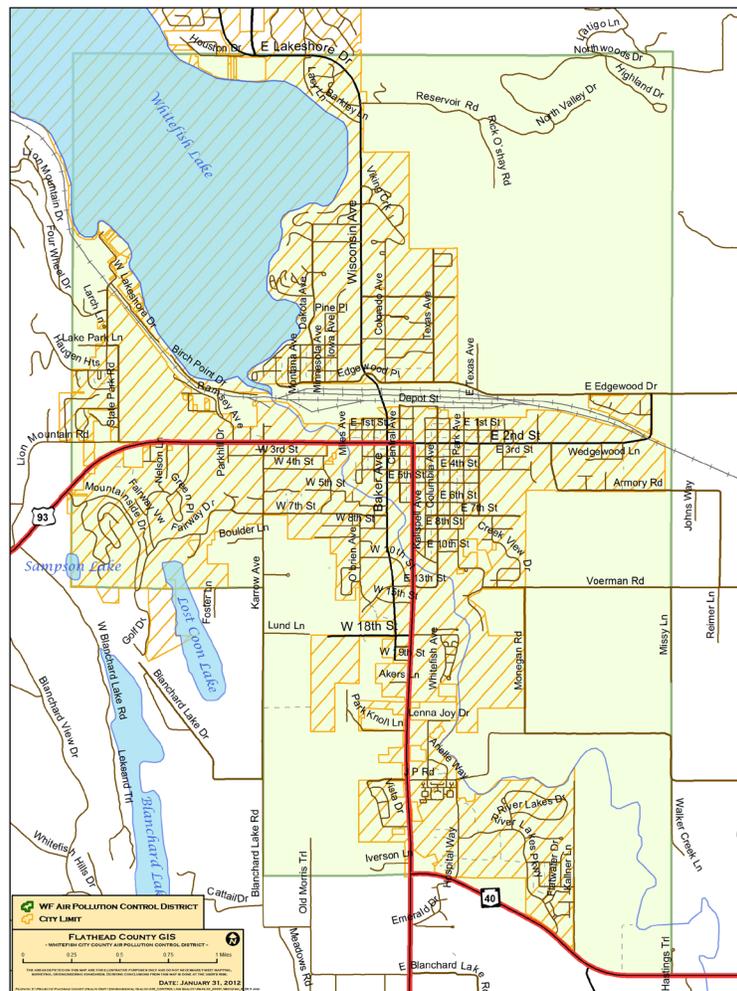
As described above, the Whitefish PM₁₀ implementation plan was initially submitted to the EPA on June 26, 1997, and revisions were submitted on June 13, 2000. EPA approved the implementation plan on April 24, 2008 (73 FR 22057). The approved control plan satisfied the requirements for reasonably available control measures (RACM) of area sources and reasonably available control technology (RACT) for the stationary source. The control plan focused on reducing fugitive dust emissions from roads, parking lots, construction and demolition projects, and barren ground as well as stipulations on industrial emissions. The control plan for fugitive dust is based on rules adopted by the Flathead County Health Department (FCHD) and the City of Whitefish. These rules are part of the Flathead County Air Pollution Control Program. The components of the control plan are discussed below:

Local Regulations to Control Re-Entrained Road Dust

Specific to Whitefish, the Flathead County Air Pollution Control Program Rules 701 and 705 are designed to control PM₁₀ emissions from re-entrained dust due to winter sanding. These are the only two rules whose control actions received emission reduction credit in the control strategy. Rule 701 (material to be used on roads and parking lots-standard) requires the use of sanding and chip seal material that has a durability as defined by the Montana Modified L.A. Abrasion test of less than or equal to 9 and has a content of material smaller than 200 mesh, as determined by standard wet sieving methods, which does not exceed 4.0 percent oven dry weight. Rule 705 (street sweeping and flushing) requires a prioritized street sweeping and flushing program that commences on the first working day after any streets become either temporarily or permanently ice-free and temperatures are above 35 degrees Fahrenheit. The prioritized sweeping program is in effect from November through April.

These re-entrained road dust rules are applicable within the Whitefish City/County Air Pollution Control District (see the figure below). This district represents the city of Whitefish and much of the NAA.

Figure 1.4 – Whitefish Air Pollution Control District



Rule 707 is a re-entrained road dust contingency plan that would be enacted if the EPA notifies DEQ that the SIP for Whitefish failed to timely attain the PM₁₀ NAAQS or make reasonable further progress towards attainment. Rule 707 provides that the following will occur if the contingency measure is triggered:

Within the Whitefish Air Pollution Control District, only de-icer agents shall be placed on any road or parking lot with the exception of priority routes with extraordinary circumstances existing. During extraordinary circumstances, priority routes must use sanding material which has a durability, as defined by the Montana Modified L.A. Abrasion test, of less than or equal to 9, and has a content of material greater than 200 mesh, as determined by standard wet sieving methods, which is less than 4.0 percent oven dry weight.

The rule defines extraordinary circumstances to be a specific period of time when the thickness of ice on a road, the air temperature, and/or the slope of a road would preclude the effective use of liquid de-icer.

Local Regulations to Control Dust from Construction, Paving, and Land Clearing

Rules 702, 703, 704, and 706 control dust from construction and demolition activity, paving of roads and parking lots, and land clearing. The construction and demolition rules require a permit that describes the project and contains a dust control plan which constitutes reasonably available control technology (RACT). RACT techniques prevent the emission and/or airborne transport of dust and dirt from the site and includes application of water or other liquid, limiting access to the site, securing loads, enclosing, shrouding, compacting, stabilizing, planting, cleaning vehicles as they leave the site, and scheduling projects for optimum meteorological conditions or other such measures.

The paving regulation requires a plan and schedule of implementation to improve unpaved roads and parking lots by paving, routine application of dust suppressants, or other effective measures that control dust. New streets or roads and parking lots meeting certain specifications must be paved.

The owner or operator of any land greater than 0.25 acres in size that has been cleared or excavated, shall use RACT to control dust emissions. In this instance, RACT means techniques to prevent the emission and/or airborne transport of dust and dirt from any disturbed or exposed land including: planting vegetative cover, provided synthetic cover, water and/or chemical stabilization, covering the coarse aggregate, installing wind breaks, or other equivalent method or technique approved by the FCHD.

Local Regulations to Control Open Burning

The control plan also includes open burning regulations in the Flathead County Air Pollution Control Plan in Subchapter 2, that is designed to mesh with the Montana Smoke Management Plan, but under some circumstances is more stringent. The regulations require that open burning sources be limited to the maximum degree achievable for the source. Minimization techniques and methods include the following:

- scheduling of burning during periods and seasons of good ventilation;
- applying dispersion forecasts;
- utilizing predictive modeling results performed by and available from the FCHD to minimize smoke impacts;
- limiting the amount of burning to be performed during any one period of time;
- using ignition and burning techniques, which minimize smoke production;
- selecting fuel preparation methods that will minimize dirt and moisture content;
- promoting fuel configurations which create an adequate air to fuel ratio;
- prioritizing burns as to air quality impact and assigning control techniques accordingly;
- and
- promoting alternative treatment and use of materials to be burned.

Local Regulations to Control Solid Fuel Burning Devices

There is also a voluntary solid fuel burning device curtailment program regulation in Subchapter 3 of the Flathead County Air Pollution Control Program. This program is intended to establish guidelines which may be utilized to control emissions of air contaminants from solid fuel burning devices (residential wood stoves). When the PM₁₀ levels exceed or are expected to exceed 100 µg/m³, as measured with a nephelometer, the FCHD will call an air pollution alert. The public will be informed that an air pollution alert has been called and will be requested to curtail burning until the alert has passed.

Industrial Stipulations

The Idaho Timber Company was the only industrial (or stationary) source found to contribute to the PM₁₀ impacts within the Whitefish NAA at the time of the NAAQS exceedances in the 1990's. The EPA found that PM₁₀ precursors were insignificant to the PM₁₀ concentration because of the business nature of the stationary source.

In 2009, this millwork facility shut down its Whitefish operation for business reasons. The property was not redeveloped for industrial use. The Idaho Timber Company had PM₁₀ emissions below the DEQ permitting threshold of 10 tons per year (tpy) or more, so no permit was ever issued for the facility. No facility specific stipulations were placed on this source.

The Flathead County Air Pollution Control Program rules have proven to be effective control because Whitefish has not incurred a PM₁₀ NAAQS exceedance for several decades.

2. REQUEST FOR WHITEFISH 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. 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 of the 1987 24-hour PM₁₀ NAAQS for the Whitefish NAA.

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 1987 PM₁₀ NAAQS. While these conditions must be met before redesignation of an area from nonattainment to attainment may occur, the Calcagni memo allows that a state may submit both the redesignation request and maintenance plan concurrently.

2.1. CAA §107(d)(3)(E)(i) – Determination that the Area Has Attained the PM₁₀ Standards

The Calcagni memo indicates that determining if an area has attained a NAAQS is based on two components. First, the area may be considered attaining the NAAQS if the number of expected exceedances per year for PM₁₀ is equal to or less than 1.0. In making this PM₁₀ showing, data must rely on three complete, consecutive calendar years of quality-assured air quality monitoring data, collected in accordance with 40 CFR Part 50, Appendices H and K. The second component of this demonstration relies upon supplemental, EPA-approved air quality modeling. However, when dealing with a limited number of initial PM₁₀ NAAs that were designated as moderate NAAs, dispersion modeling is not required. The Whitefish NAA followed the federal adoption of the PM₁₀ standard, and received the designation of being a moderate NAA without using dispersion modeling. Therefore, no air quality modeling is required for this demonstration of attainment.

The PM₁₀ 24-hour standard of 150 µg/m³ is not to be exceeded more than once per year on average over 3 years. Since 1991, PM₁₀ monitoring data has been collected in Whitefish and has been quality-assured to meet the requirements of 40 CFR Part 58. Table 2.1 shows the number of monitored exceedances per year for the most recent five years of quality-assured monitoring data, 2015 through 2019. Table 2.1 shows both the number of exceedances and the number of exceedances with concurred exceptional events removed. Table 2.2 shows the 3-year average of these exceedances along with the 5-year average. Both tables demonstrate that when concurred exceptional events are removed from the dataset, the remaining data are below the 1987 PM₁₀ NAAQS.

Table 2.1 – Whitefish’s Recent 5-year 24-hour PM₁₀ Exceedances

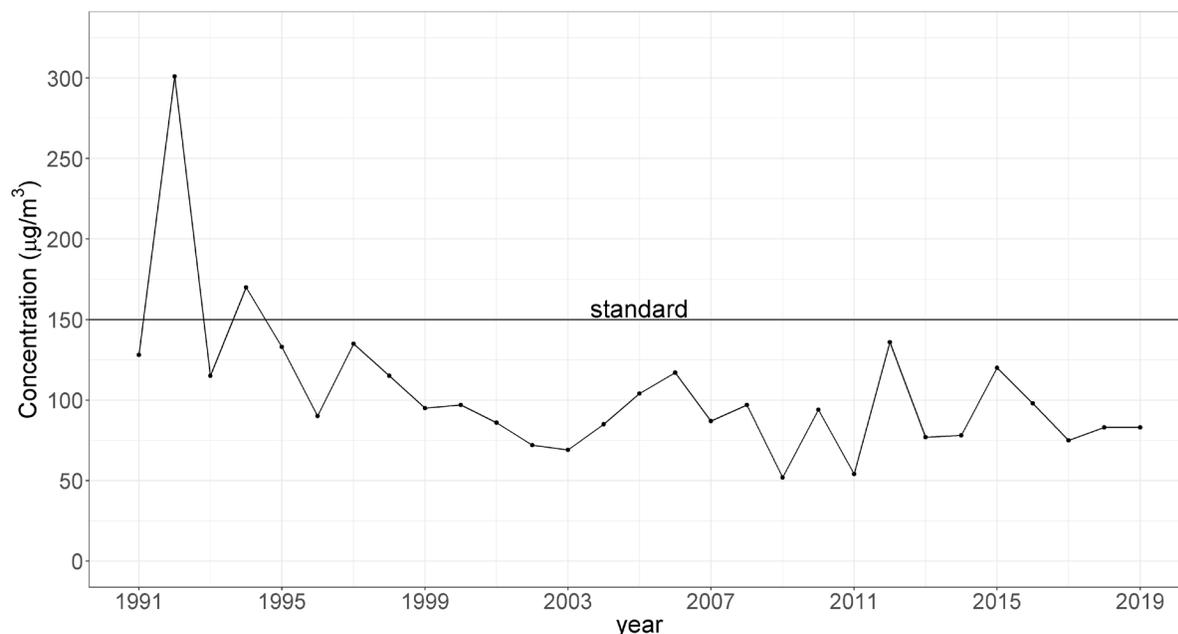
	2015	2016	2017	2018	2019
Number of Exceedances	0	0	3	1	0
Number of Exceedances Excluding Exceptional Events	0	0	0	0	0

Table 2.2 – Whitefish’s Recent 3-year Averages of the 24-Hour PM₁₀ Exceedances

	2015-2017	2016-2018	2017-2019	5-year Avg.
3-year Exceedance Averages	1	1.3	1.3	1.2
3-year Exceedance Averages Excluding Exceptional Events	0	0	0	0

The data in Figure 2.1 has been collected and reported in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A. All flagged events have been removed both with and without EPA regional concurrence. This figure is for informational purposes only and does not represent the area’s design value, but the second highest 24-hour value of PM₁₀ recorded during each calendar year. As shown in the figure, the second highest value recorded annually that was not influenced by wildfires has consistently remained below the PM₁₀ NAAQS since 1994.

Figure 2.1 – Whitefish’s Second Highest PM₁₀ 24-hour Averages (µg/m³) with Flagged Exceptional Events Removed



Using the monitored values, a local design value has been calculated for Whitefish which is a statistic that describes the air quality relative to the level of the NAAQS. The design value is calculated over the most recent three consecutive 3-year intervals. As shown in Table 2.3, Whitefish’s 5-year average design value is 130 µg/m³ using the “table lookup” method outlined in the 1987 *PM₁₀ SIP Development Guidance*. The table lookup method identifies which monitored data value is to be used as the design value. This is based on the number of measurements collected by the monitor during the 3-year period. The design value calculation excludes regionally concurred exceptional events. Concurred exceptional events only include events where the NAAQS has been exceeded. Additional days with wildfire impact below the NAAQS are still included in the design value calculation, and accounts for why the design value seems larger than the values in Figure 2.1.

Table 2.3 – Whitefish’s Recent 5-year 24-hour PM₁₀ Design Value Excluding Regionally Concurred Exceptional Events

	2015-2017	2016-2018	2017-2019	5-year Avg.
Number of Measurements	1,057	1,077	1,086	--
Data Value to Use	4 th Highest	4 th Highest	4 th Highest	--
Design Value (µg/m³) (Table Lookup Method)	131	130	130	130

Note: Only concurred exceptional events greater than 154 µg/m³ were excluded from the data.

In addition to the monitoring results demonstrating that Whitefish has attained the 24-hour PM₁₀ NAAQS since 1995, the EPA has determined that the Whitefish PM₁₀ NAA has attained the PM₁₀ NAAQS by December 31, 1999, per 40 CFR 52.1374 under the clean data area approach. This determination was based on air quality monitoring data from 1997, 1998, and 1999, per 66 FR 55102. Therefore, Whitefish meets the requirement of CAA §107(d)(3)(E)(i).

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

On June 26, 1997, DEQ submitted the initial control plan. Revisions to the control plan were submitted on June 13, 2000. The EPA approved the Whitefish implementation plan on April 24, 2008 (73 FR 22057) meeting the requirement of CAA §107(d)(3)(E)(ii).

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 emission reductions in the Whitefish NAA are both permanent and enforceable, and are a result of SIP and other federal requirements.

SIP Provisions

The initial emission inventory was established in the *Whitefish PM-10 Emission Inventory* prepared by DEQ on October 1995 and used in the June 20, 1997 *Whitefish PM-10 Control Plan*. The approved control plan's use of the 1993 emissions as the baseline year represented the year immediately following the NAAQS exceedances in 1992 and the precedes the 1994 exceedance.

These 1993 emissions are shown in Table 2.4 along with the most current available emissions for the area that are from the 2017 national emission inventory (NEI) (as described in Appendix B). The emissions have decreased to less than 20 percent of the 1993 baseline levels. These reductions represent the effectiveness from control measures of the approved attainment plan that incorporate permanent and enforceable rules from the Flathead County Air Pollution Control Program. These county rules are described above in Section 1.3. Specific to Whitefish, Rule 701 specifies the allowed material to be placed on roads and parking lots for sanding and chip sealing. Rule 705 specifies street sweeping and flushing requirements during both winter and summer months to reduce fugitive road dust. The benefit of these federally enforceable rules shows that fugitive dust emissions on paved roads were much less in 2017 even though the area has seen a population increase since 1993. Unpaved roads show an increase in emissions; however, this estimate is conservative due to scaling from the county-level emission inventory. The NEI emissions were scaled based on vehicle miles traveled (VMT) in Whitefish relative to VMT in Flathead County. See Appendix B for more details.

Residential wood burning emissions have also gone down since 1993 as a result of voluntary solid fuel burning device curtailment program in Subchapter 3 of the Flathead County Air Pollution

Control Program which requires the FCHD to call Air Pollution Alerts when the PM₁₀ level exceeds or is expected to exceed 100 µg/m³. At the EPA Region 8's request, DEQ included light and heavy-duty on-road and non-road diesel emissions from the 2017 NEI emission inventory in Table 2.4, although there are no comparative 1993 values. Despite increasing the number of source categories from those approved for the baseline year in the control plan, the 2017 PM₁₀ area emissions are shown to be well below the 1993 levels in total.

Table 2.4 – Whitefish, MT - PM₁₀ Emission Summary

Source Categories	Actual Annual Baseline PM ₁₀ Emissions 1993 (tons)	2017 PM ₁₀ Emissions (tons)
<i>Area Sources</i>		
Paved Roads	657.4	25.27
Unpaved Local Roads	290.6	967.37
Residential Wood Burning	81.6	16.08
Unpaved Lots & Alleys	43.2	NA
Paved Lots & Aprons	17.2	NA
Tailpipe	5.4	5.03
Diesel	NA	3.03
Locomotive	4.0	8.75
Natural Gas (Commercial/Institutional/Residential)	NA	0.38
<i>Industrial Source</i>		
Idaho Timber Company*	4.4	NA
Total	1,103.8	1,025.91

* Idaho Timber Company was sold in 2009. No industrial operations are occurring at the site.

Emissions from the locomotives in the 2017 NEI show an increase above the 1993 emissions. This most likely represents a strong national economy, more so than a change in local population or change in local economy because much of the rail activity is simply passing through Whitefish and not activity that originates in the area.

The 1993 baseline year emission inventory includes the Idaho Timber Company which was found to contribute only crustal particulates resulting from vehicle operation. The Idaho Timber Company operated a sawmill just south of Whitefish Lake along the Whitefish River until 2009 when the property was sold. It now appears to be owned by Wayside Property Holdings Inc. which is a real estate company and the land has no industrial operations occurring.

The Whitefish NAA has remained protected from air quality impacts with federally enforceable air quality rules and permitting regulations. DEQ has permitting rules in Administrative Rules of Montana (ARM) 17.8.901 through 17.8.906 for major stationary sources or major modifications locating within NAAs. The rules require all new sources or modifications to use the lowest achievable emission rates (LAER). The source must obtain emission reduction offsets in tpy which provide a positive net air quality benefit in the NAA using a 1 to 1 offset and be from other emission sources within the same NAA. There must be demonstrated improvement to the PM₁₀ 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 that emit 25 tpy or more of PM₁₀ to ensure the NAAQS are protected. In April 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.

These significant emission reductions have occurred since the baseline year, all while the population of Whitefish grew by 46 percent from 4,368 in 1990 to 6,357 in 2010 (U.S. Census Bureau) and the county growth since 2010 has been 12.3 percent (Flathead Beacon). Flathead County's growth has been significant enough to put in within the top 3 largest gaining micropolitan areas in the US in the past 2 years. The NAA encompasses the City of Whitefish as well as portions of the county, so the population change within the NAA is tough to predict, but likely to be on par with the growth within Whitefish and the county.

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 emissions and fuel vaporization were a small fraction of the Whitefish NAA emissions during the baseline year of 1993. Although the overall tailpipe emissions have grown from the baseline year, the tailpipe emissions are just 6 percent of the current total emissions.

These emission changes demonstrate that the control measures adopted by the SIP and other federal requirements for fugitive area sources have effectively lowered the PM₁₀ levels in Whitefish through permanent and enforceable requirements meeting the requirement of CAA §107(d)(3)(E)(iii).

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 a maintenance plan (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 maintenance plan providing for continued attainment of the PM₁₀ 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 PM₁₀ nonattainment status of the Whitefish 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 PM₁₀. The EPA approved the control plan for Whitefish on April 24, 2008 (73 FR 22057). CAA Section 110(a)(2) contains the general requirements or infrastructure elements necessary for 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 Nonattainment Areas (CAA Section 171, et seq.)

CAA Part D contains requirements applicable to all areas designated nonattainment. PM₁₀ NAAs must meet the general provisions of Subpart 1 and the specific PM₁₀ provisions in Subpart 4. The maintenance plan (see Section 3.0) associated with this request for redesignation of the Whitefish 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 Whitefish PM₁₀ SIP, fully-approved by EPA in 73 FR 22057 on April 24, 2008, 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 PM₁₀ emissions inventory is required by 40 CFR 51.1008 to meet the requirements of Section 172(c)(3) of the CAA. The Whitefish NAA PM₁₀ baseline emissions inventory, which also serves as the attainment year inventory, is being submitted as part of the maintenance plan (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, Subchapter 7);
- Prevention of Significant Deterioration of Air Quality (ARM, Title 17, Chapter 8, Subchapter 8);
- Permit Requirements for Major Stationary Sources or Major Modifications Locating Within Nonattainment Areas (ARM, Title 17, Chapter 8, Subchapter 9);
- Preconstruction Permit Requirements for Major Stationary Sources or Major Modifications Locating Within Attainment or Unclassified Areas (ARM, Title 17, Chapter 8, Subchapter 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 2.5, below.

Table 2.5 – 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, Subpart A) on June 13, 2004, at ARM 17.8.1302. The general conformity regulation describes procedures to determine if federally-financed, non-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.

Subpart 4, Additional Provisions for Particulate Matter Nonattainment Areas:

Whitefish has an approved control plan as required by CAA section 191(a) for the PM₁₀ NAA. This plan controlled PM₁₀ emissions from area sources and an industrial source which impacted 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 Whitefish PM₁₀ 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 PM₁₀ NAAQS according to the applicable provisions of section 175A of the CAA (Section 3.0).

3. Whitefish NAA PM₁₀ LMP

On October 19, 1993, in 58 FR 53886, the EPA codified the designation and classification of Whitefish as a ‘moderate’ NAA for the PM₁₀ 24-hour NAAQS, effective November 18, 1993. The Whitefish area has achieved the annual PM₁₀ NAAQS. EPA determined Whitefish had attained the PM₁₀ NAAQS based on air quality monitoring data from 1997, 1998, and 1999, per 40 CFR 52.1374. As shown above, Whitefish has continued to demonstrate attainment based on quality assured monitoring data collected from PM₁₀ monitoring in the area from 2015 through 2019.

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 Whitefish NAA to be formally redesignated to attainment, DEQ must submit, and the EPA must approve, a SIP revision providing for maintenance of the PM₁₀ 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 the 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 Sections 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 and the industrial source listed in Table 2.4 of the previous section are the major contributing emission sources relevant to the Whitefish NAA. Table 3.1 below shows the approved emission categories from the attainment plan and additionally DEQ has included light and heavy-duty diesel emissions in the emission inventory as previously requested by EPA. Only one industrial source, Idaho Timber Company, was included in the baseline emission inventory for the attainment plan. Idaho Timber Company’s emissions were below the required threshold for permitting, so when the millwork company permanently closed in 2009 for business reasons, there was no permit to revoke. Emissions associated with the attainment inventory are based on the 2017 NEI emissions for area sources. The methodology for calculating the 2017 NEI emissions from within the Whitefish NAA

of Flathead County can be found in Appendix B. Despite increasing the level of emission detail over the original approved attainment plan, PM₁₀ emissions are lower than the approved 1993 maintenance plan baseline values shown in Table 2.4.

Table 3.1 – Whitefish Attainment Sources and 2017 NEI PM₁₀ Emissions

Source Category	2017 NEI Emissions (tons)
Paved Roads	25.27
Unpaved Local Roads	967.37
Residential Wood Burning	16.08
Unpaved Lots & Alleys	NA
Paved Lots & Aprons	NA
Tailpipe	5.03
Diesel	3.03
Locomotives	8.75
Natural Gas (Commercial/Institutional/Residential)	0.38
Total	1,025.91

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 PM₁₀ NAAQS for at least 10 years following EPA’s approval of the plan. As stated earlier in this document, attainment of the PM₁₀ NAAQS has been demonstrated in the Whitefish area, and this maintenance demonstration shows continued attainment, or “maintenance” of the PM₁₀ NAAQS through the year 2032. The maintenance plan will continue to implement the controls of the attainment plan. The following are the criteria that must be met to demonstrate maintenance and meet the LMP requirements.

Design Value

To qualify for the LMP option, an area must have an average design value below 98 µg/m³ or the site-specific critical design value. The average design value is calculated using the most recent 5 years of data (2015-2019) by averaging the three consecutive 3-year design values.

Using the monitored values, a local design value has been calculated for Whitefish which is a statistic that describes the air quality relative to the level of the NAAQS. The local design value calculation excludes regionally concurred exceptional events and regionally concurred values from 2015 and 2017. EPA’s concurrence letters for the 2015 and 2017 exceptional events can be found in Appendix A. In March 2020, DEQ submitted to EPA the *PM₁₀ 2018 Exceptional Events due to Wildfires*.

Although EPA has not acted on the 2018 exceptional events submission at the time this document was prepared, DEQ has removed the 2018 exceptional events from the data set when calculating the design value. Data substitution was not necessary for this data set, as all applicable quarters had greater than 75% data capture. The concurred exceptional events are monitored values above the NAAQS impacted by wildfires. The excluded regionally concurred values are values between 98 $\mu\text{g}/\text{m}^3$ and 154 $\mu\text{g}/\text{m}^3$ impacted by wildfires. The design value is calculated over the most recent three consecutive 3-year intervals. As shown in Table 3.2, the Whitefish design value uses the “table lookup” method outlined in the 1987 PM₁₀ SIP Development Guidance. The table lookup method identifies which monitored data value is to be used as the design value. This is based on the number of measurements collected by the monitor during the 3-year period.

Table 3.2 –Whitefish’s Average 24-hour PM₁₀ Design Value Using the Most Recent 5 Years of Data (Excluding Regionally Concurred Exceptional Events and Regionally Concurred Values

	2015-2017	2016-2018	2017-2019	5-year Avg.
Number of Measurements	1,057	1,077	1,086	--
Data Value to Use	4 th Highest	4 th Highest	4 th Highest	--
Design Value ($\mu\text{g}/\text{m}^3$) (Table Lookup Method)	118	91	90	100

The 5-year average design value from 2015-2019 is 100 $\mu\text{g}/\text{m}^3$, as shown above.

Critical Design Value

The EPA has determined that some PM₁₀ NAAs have little inter-annual variation. This has led the EPA to develop a ‘Critical Design Value’ (CDV) that is an indication of the ‘likelihood of future violations of the NAAQS given the current average design value and its variability. 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.” In this guidance, the EPA states that an area “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.”

The equation to calculate a CDV is as followed:

$$\text{CDV} = \text{NAAQS} / (1 + t_c * \text{CV})$$

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).
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.

DEQ has defined ‘the past’ as eleven 3-year periods of design values, beginning with the 2007-2009 design value and ending with the 2017-2019 design value. The table lookup method, described in Section 2.1, was used to calculate design values for each of these three-year periods. Table 3.3 below provides the number of measurements, lookup ranking, and design value for each period. The design value calculation excludes regionally concurred exceptional events, regionally concurred values, and those proposed for concurrence including values from 2007 and 2018 that have not been acted upon. EPA’s letters of concurrence are in Appendix A. The exceptional events and values exclude all wildfire impacts events above $98 \mu\text{g}/\text{m}^3$.

Table 3.3 – Design Values from the Past Eleven 3-years Periods ($\mu\text{g}/\text{m}^3$)

3-year Period	Count	Lookup Ranking	Design Value
2007-2009	615	2	97
2008-2010	313	1	106
2009-2011	271	1	96
2010-2012	559	2	136
2011-2013	858	3	103
2012-2014	1,049	4	103
2013-2015	1,045	4	118
2014-2016	1,043	4	118
2015-2017	1,057	4	118
2016-2018	1,077	4	91
2017-2019	1,086	4	90

The low number of measurements in 2008-2011 is due to a change in monitoring equipment in July 2008. Continuous monitors were replaced by filter-based monitors from July 2008 until August

2011, when continuous monitors were once again used to measure PM₁₀ in Whitefish.

The coefficient of variation is calculated as the standard deviation of the eleven design values divided by the mean of the 11 design values. The critical t-value was derived by assuming a one-tailed distribution with a tolerable risk factor of 10% 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	= 150 µg/m ³
t _c	= 1.372
Standard deviation of design values (2005-2017)	= 14.2 µg/m ³
Mean of design values (2007-2019)	= 106.9 µg/m ³
Coefficient of Variation [CV= StDev/Mean]	= 0.132
CDV [NAAQS/(1+t_c*CV)]	= 126.9 µg/m³

A CDV of 126.9 µg/m³ will be used to determine if the Whitefish area qualifies for an LMP.

Regional Motor Vehicle Analysis

To qualify for the LMP option, an area must expect only limited growth in on-road motor vehicle PM₁₀ emissions (including fugitive dust) as described in the EPA guidance titled *Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas*. Limited growth is demonstrated when the regional motor vehicle growth value is below the CDV for the area. When adjusted for future on-road mobile emissions, Whitefish has a motor vehicle regional emissions analysis test design value of 122.3 µg/m³. These results are less than the CDV of 126.9 µg/m³ used as the margin of safety in the LMP guidance. The equation used to determine eligibility of Whitefish for the LMP is based on the regional motor vehicle analysis equation set forth in the guidance:

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

Where:

DV	=	5-year PM ₁₀ design value (2015-2019), (µg/m ³)
VMT' _{pi}	=	Projected increase in vehicle miles traveled (VMT) over the next 10 years (2022-2032), (%)
DV _{mv}	=	Product of the design value and the fraction of the inventory represented by on-road mobile sources in the attainment year (µg/m ³); and
MOS	=	Margin of safety for PM ₁₀ or CDV, which is 126.9 µg/m ³ for the 24-hour standard, as calculated above.

DEQ has assumed the attainment year to be 2017, the year for which the most recent Whitefish NAA emissions inventory was prepared. The Montana Department of Transportation projected VMT_{pi} for the next 10 years following projected EPA approval in 2021 (2022-2032) and provided that data to DEQ. The design value was derived from the PM_{10} monitoring data collected at the Whitefish site at the end of 10th St. for the most recent 5 years (2015-2019). PM_{10} values that were greater than $98 \mu\text{g}/\text{m}^3$ due to exceptional events (e.g. wildfires) were excluded from the design value analysis based on EPA guidance. Based on the criteria given above, Whitefish qualifies for the LMP option for the 24-hour standard for all considered cases. Details of the calculations are described above, and the parameter values used for the calculations are as follows:

Table 3.4 – Regional Motor Vehicle Analysis Parameters

Parameter	Value
DV ($\mu\text{g}/\text{m}^3$)	100
VMT_{pi} (2022-2032)	23.34%
% of the 2017 EI from on-road mobile sources in 2017	97.3%
DV_{mv} ($\mu\text{g}/\text{m}^3$)	97.0
Calculated [DV + (VMT_{pi} * DV_{mv})] ($\mu\text{g}/\text{m}^3$)	122.3

As shown, the calculated regional motor vehicle analysis value is less than the CDV of $126.9 \mu\text{g}/\text{m}^3$, and therefore the area passes the regional analysis criteria.

Based on the analyses above, the local design value and the regional motor vehicle analysis values are both below the CDV. The Whitefish NAA qualifies for the LMP option from these analyses according to the *Limited Maintenance Plan Option for Moderate PM_{10} Nonattainment Areas* memo.

3.3. Control Plan

The Whitefish area has a robust control plan adopted into local ordinances of the Flathead County Air Pollution Control Program. A discussion of these ordinances is included above in Section 1.3.

DEQ 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 Clean Air Act of Montana and rules adopted under that Act, the Federal Clean Air Act 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 Whitefish maintenance area to ensure that any new or modified (or reopened) industrial source of PM₁₀ emissions will not cause or contribute to a subsequent PM₁₀ 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

As mentioned above, particulate monitoring has been conducted in Whitefish since the early 1990's. Initial monitoring for PM₁₀ was conducted at Markus Foods, 9 Baker Ave. (30-029-0039) from April 1991 through March 2001 and then monitoring was resumed six months later from September 2001 to present at the end of 10th Street off Park Ave (30-029-0009).

3.5. Verification of Continued Attainment

DEQ intends to continue operating the Whitefish monitor (30-029-0009) or an approved alternatively located monitor until such a time that an approved alternative monitoring method is agreed upon. DEQ will request approval of an alternative monitoring methodology in a separate request.

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 1987 24-hour PM₁₀ 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 PM₁₀ 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 PM₁₀ 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 expeditiously 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 Whitefish maintenance area will consist of monitoring and analyzing PM₁₀ concentrations. In accordance with 40 CFR Part 58, DEQ will continue to operate the Whitefish monitor (30-029-0009).

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 PM₁₀ 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 PM₁₀ exceedance, DEQ and Whitefish's local government will develop appropriate contingency measure(s) intended to prevent or correct a violation of the PM₁₀ 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 PM₁₀ 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 Whitefish's contingency rule 707, the use of deicers, additional street cleaning, etc.

3.7. Conformity for PM₁₀ Limited Maintenance Plan 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 Whitefish area does not have a Metropolitan Planning Organization (MPO); transportation conformity by default goes to MDT in consultation with DEQ. As per the EPA's PM₁₀ Limited Maintenance Plan policy, the area does not require a motor vehicle emissions budget (MVEB).

Regional transportation conformity is presumed due to the limited potential for vehicle emission growth in the area during the maintenance plan period. A regional emissions analysis and associated regional conformity requirements (40 CFR 93.118) are not required. 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 Whitefish will still be a maintenance area after redesignation, transportation conformity determinations are still required for transportation plans, programs and projects.

Transportation plans and the 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 PM₁₀ hot spots (40 CFR 93.116 and 93.123) and for PM₁₀ 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 Whitefish PM₁₀ NAA.

After Public Comment period ends, include date of 30-day public notice, if a hearing was requested, if public comments were received, and any response or changes required from the hearing or public comments. Include any additional information in Appendix D.

5. Conclusion

The Whitefish NAA has attained the 1987 24-hour PM₁₀ NAAQS for 24 years. Attainment is demonstrated by the monitoring data from 1995 through 2019 which shows compliance with the standards. The current emissions are expected to increase at a rate no greater than the population growth rate or annual average VMT increases, as appropriate. Because of improved vehicle fleet emissions and the Flathead County Health Department rules that restricting fugitive emissions compliance with the PM₁₀ NAAQS will be maintained.

Further, DEQ has demonstrated compliance with all applicable provisions of the CAA for the redesignation and maintenance of the 1987 PM₁₀ NAAQS in the Whitefish NAA. Documentation to that effect is contained herein.

Therefore, DEQ requests formal redesignation of the Whitefish PM₁₀ NAA to attainment (Section 2.0) concurrent with EPA approval of the associated maintenance plan (Section 3.0) ensuring ongoing PM₁₀ NAAQS compliance in the area.

6. References

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- U.S. Department of Commerce, Economic and Statistics Administration, Bureau of the Census, *1990 Census of Population, General Population Characteristics, Montana*, <https://www2.census.gov/library/publications/decennial/1990/cp-1/cp-1-28.pdf>. (1990 CP-1-28)

APPENDIX A

**EPA REGION 8 LETTERS CONCURRING SPECIFIC WILDFIRE EXCEPTIONAL
EVENTS**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

1505 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region8

RECEIVED

NOV 13 2018

MT Dept. of Environmental Quality
Air, Energy & Mining Division
Air Quality Bureau

NOV - 1 2018

Ref: 8P-AR

Mr. Dave Klemp, Bureau Chief
Air Resources Management Bureau
Montana Department of Environmental Quality
P.O. Box 200901
Helena, Montana 59620-0901

Dear Mr. Klemp:

This letter is in response to your letter of April 24, 2017, requesting the U.S. Environmental Protection Agency's concurrence on exceptional event claims for fine ($PM_{2.5}$) and coarse (PM_{10}) particulate matter data impacted by wildfires in 2015 and 2016. The Montana Department of Environmental Quality (DEQ) determined that regional wildfire smoke events caused exceedances of the 24-hour $PM_{2.5}$ and PM_{10} National Ambient Air Quality Standards (NAAQS) at monitoring sites across Montana in 2015 and 2016. In addition, the DEQ determined that the smoke events caused multiple sites to exceed $98 \mu\text{g}/\text{m}^3$, which is the eligibility threshold for the use of a limited maintenance plan (LMP) for a nonattainment area redesignation. The DEQ has flagged these data to support future plans to redesignate PM_{10} nonattainment areas using the LMP Policy.

The EPA concurs with the Montana DEQ's determination that the 24-hour PM_{10} exceedance at the Libby monitoring site on August 24, 2015, and the PM_{10} exceedances at the Missoula monitoring site on August 28 and August 29, 2015, meet the criteria for an exceptional event in the Exceptional Events Rule (EER). The basis for this concurrence is set forth in the enclosed technical support document. Concurrence flags have been entered for these data in the EPA's Air Quality System (AQS) database. For those PM_{10} values in August 2015 and the one value in August 2016 that exceeded the LMP Policy eligibility threshold, ($98 \mu\text{g}/\text{m}^3$) but were under the minimum value that is determined to be an exceedance of the PM_{10} NAAQS ($155 \mu\text{g}/\text{m}^3$), the EPA concurs that the elevated PM_{10} concentrations meet the general definition and criteria for exceptional events, and thus in accordance with EPA guidance, those values may be excluded when considering whether the areas are eligible for use under the LMP Policy for PM_{10} .

The EPA, at this time, has not reviewed the $PM_{2.5}$ exceptional event requests. 40 CFR 51.14(a)(1)(i) limits the applicability of the EER to data concerning NAAQS exceedances or violations that are relevant to regulatory determinations by the EPA. Data in AQS flagged as exceptional events that are not relevant to regulatory determinations will not be reviewed by the EPA for concurrence. The EPA has determined that the $PM_{2.5}$ data do not have any regulatory significance. In the event that any of the data on which the EPA is deferring action become significant for a future regulatory action, the EPA will retain the demonstration for potential



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future consideration.

The determination conveyed in this letter does not constitute final action regarding any matter on which the EPA is required to provide an opportunity for public comment. In particular, this applies to determinations regarding the attainment status or classification of this area. Final actions will take place only after the EPA completes notice and comment rulemaking on those determinations.

If you have any questions on this matter, you may contact me at (303) 312-6776 or your staff may contact Ethan Brown, of my staff, at (303) 312-6403.

Sincerely,



Martin Hestmark
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

Enclosure

cc: Annette Williams, Montana DEQ



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REGION 8**

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Denver, CO 80202-1129
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FEB - 8 2019

Ref: 8P-AR

Mr. Dave Klemp, Bureau Chief
Air Resources Management Bureau
Montana Department of Environmental Quality
P.O. Box 200901
Helena, Montana 59620-0901

Re: Exceptional Event Requests Regarding Exceedances of the 24-hour PM₁₀ NAAQS and the LMP Eligibility Threshold at Montana Monitoring Sites within PM₁₀ Nonattainment Areas

Dear Mr. Klemp:

This letter is in response to your letter of June 1, 2018, requesting the U.S. Environmental Protection Agency's (EPA) concurrence with the Montana Department of Environmental Quality's (DEQ) request to exclude PM₁₀ data impacted by wildfires in 2017 as exceptional events. The DEQ determined that regional wildfire smoke events caused exceedances of the 24-hour PM₁₀ National Ambient Air Quality Standard (NAAQS) at monitoring sites across Montana in 2017. In addition, the DEQ determined that the smoke events caused multiple sites to exceed 98 µg/m³, an eligibility threshold for EPA's Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas (the LMP Policy),¹ and the DEQ flagged these data as exceptional events to support future plans to redesignate PM₁₀ nonattainment areas using the LMP Policy.

In 2016, the EPA revised sections of the Exceptional Events Rule (EER) found in 40 CFR 50.14 and 51.930. After careful consideration of the information provided, the EPA concurs, based on the weight of evidence, that the state has made the demonstrations referred to in 40 CFR 50.14(a)(2), (b)(1) and (b)(4) of the EER. In addition, the state has met the schedule and procedural requirements in section 50.14(c) with respect to the same information. The EPA has reviewed the documentation provided by the DEQ to demonstrate that the exceedances identified in the submitted demonstration meet the criteria for an exceptional event in the EER. The basis for this concurrence is set forth in the enclosed technical support document. Concurrence flags have been entered for these data in the EPA's Air Quality System (AQS) database. For those values included in the DEQ's demonstration that exceeded the LMP eligibility threshold of 98 µg/m³ but were under 155 µg/m³, the EPA concurs that the elevated PM₁₀ concentrations were caused by wildfire smoke, and that these data may be excluded when considering whether the areas are eligible for use of the LMP Policy.

¹ <https://www.epa.gov/sites/production/files/2016-06/documents/2001lmp-pm10.pdf>.

September 2020

The determination conveyed in this letter does not constitute final action regarding any matter on which the EPA is required to provide an opportunity for public comment. In particular, this applies to EPA determinations regarding PM₁₀ attainment status or classification. Final actions will take place only after the EPA completes notice and comment rulemaking on those determinations.

If you have any questions on this matter, you may contact me at (303) 312-6776 or your staff may contact Ethan Brown, at (303) 312-6403.

Sincerely,

A handwritten signature in black ink, appearing to read "Martin Hestmark". The signature is fluid and cursive, with a prominent loop at the end.

Martin Hestmark
Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

Enclosure

cc: Annette Williams, Montana DEQ

APPENDIX B
WHITEFISH EMISSION INVENTORY

Emission Inventory Calculations

DEQ has developed an emission inventory for the Whitefish nonattainment area (NAA). The emission inventory data is from the 2017 National Emission Inventory (NEI). The NEI catalogs emissions from 60 various sources for Criteria pollutants and HAPs. However, the NEI only reports to county level resolution. The emissions listed in the table below are for all of Flathead County. This list is limited to only those sectors used in the attainment plan for Whitefish as well as diesel emissions from mobile sources.

Table 1. 2017 NEI Data for Flathead County by Sector

PM₁₀ Emissions		
Source Categories	2017 NEI Emissions (Tons)	Percent
Paved Road Dust	445.08	2.49%
Unpaved Road Dust	17,040.29	95.46%
Residential Wood Burning	190.21	1.07%
Tailpipe¹	81.89	0.46%
Diesel²	46.08	0.26%
Locomotives	43.27	0.24%
Natural Gas Combustion	4.48	0.03%
Total Area	17,851.30	100.00%

¹ Tailpipe emissions from “Mobile - On-Road Non-Diesel Light Duty Vehicles” (67.19 Tons/year), and “Mobile - On-Road Non-Diesel Heavy Duty Vehicles” (0.80 Tons/year), and “Mobile - Non-Road Equipment – Gasoline” (13.9 Tons/year).

² Diesel emissions from “Mobile - On-Road Diesel Heavy Duty Vehicles” (21.92 Tons/year), “Mobile On-Road Diesel Light Duty Vehicles” (9.38 Tons/year), and “Mobile – Non-Road Equipment Diesel” (14.78 Tons/year)

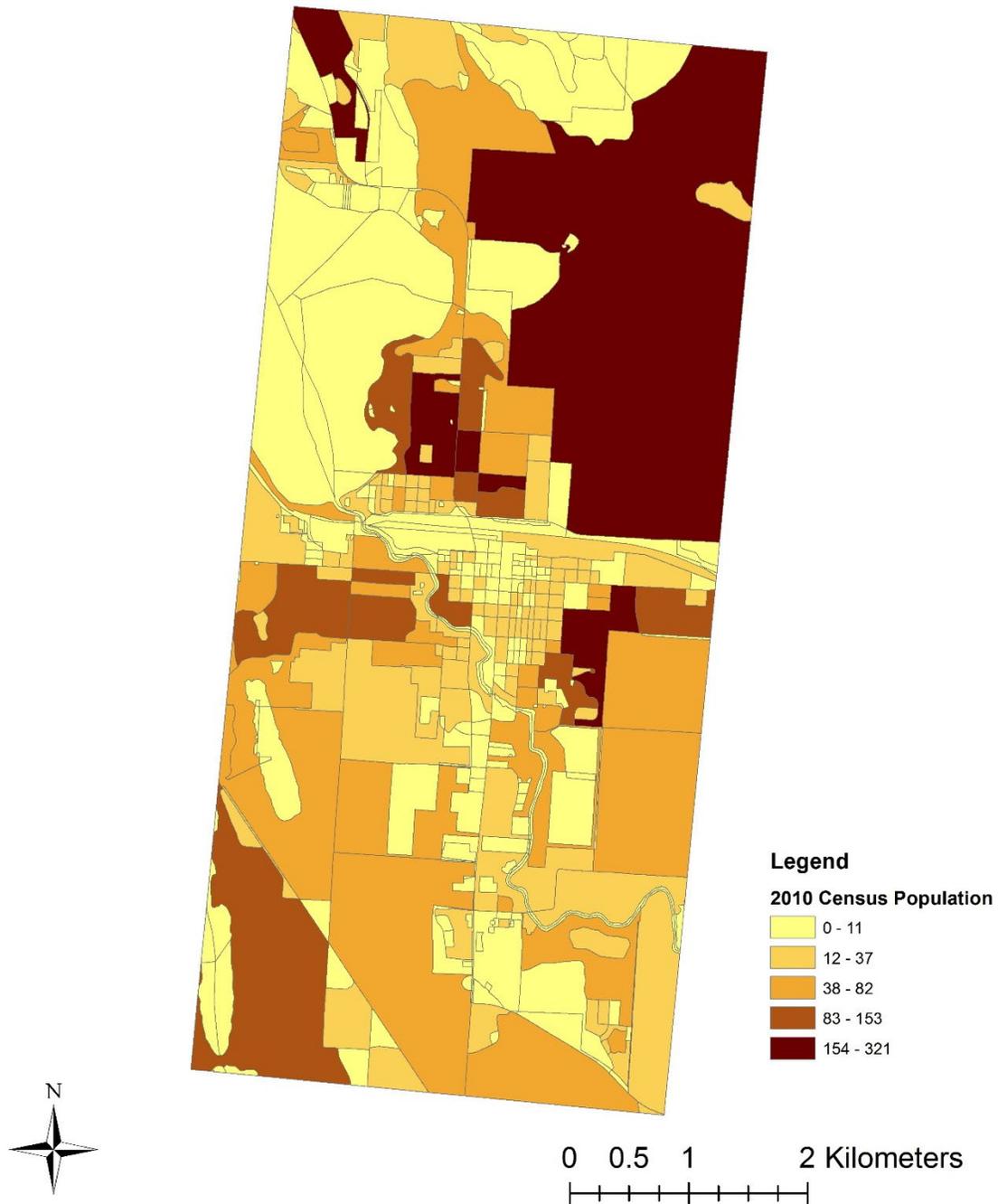
This document will outline the methodology for scaling the county level emissions to each NAA. These methods vary by sector.

Fuel Combustion and Non-road Emission Calculations

Fuel combustion source emissions, including commercial and institutional natural gas, residential natural gas, and residential wood, are available at the county level. There are no direct emissions available that are specific to the smaller NAA. Since this emission sector is linked to population, the 2010 census tract data was used to estimate an appropriate scaling factor.

The NAA includes many densely populated regions. as shown below in the census track data.

Figure 1. Population Densities within Whitefish NAA



The table below shows the 2010 population totals of the county and the NAA. This shows that the PM₁₀ NAA in Whitefish makes up 8.45 percent of the county population. The fuel combustion and non-road emissions were scaled by the percentage of county population within the NAA.

Table 2 - Fuel Combustion and Non-Road Emissions Estimates.

	2010 Pop.	% of County	Emissions (tons/year)			
			Natural Gas Combustion	Residential Wood Combustion	Mobile - Non-Road Equipment - Gasoline	Mobile - Non-Road Equipment - Diesel
Total County	90,928	100.00%	4.48	190.21	13.90	14.78
Whitefish NAA	7,687	8.45%	0.38	16.08	1.17	1.25

Road Dust and Vehicle Emission Calculations

A reasonable emission estimate from paved and unpaved road dust, mobile on-road gasoline light and heavy-duty vehicles, and mobile on-road diesel light and heavy-duty emissions, would scale the NEI emissions to the ratio of vehicle miles traveled (VMT) within the county to the VMT in the NAA. This produces a conservative estimate of the unpaved road dust contributions, as the unpaved roads only take up a small fraction of the roads in the NAA, with the majority of the county's unpaved road dust occurring outside the urban areas.

2017 daily VMT data is available through the Montana Department of Transportation (MDT) for Flathead County and the city of Whitefish. County level data is provided through the MDT website, while the city estimate was provided to DEQ in August 2018 via email. The table below shows the total daily VMT in the county compared to Whitefish in 2017 and the percentage of these VMT.

Table 4. 2019 VMT Data by County and Urban Area.

	2019 Daily VMT	Percent of County
Flathead County	2,819,961	100%
Whitefish Urban Area	160,088	5.68%

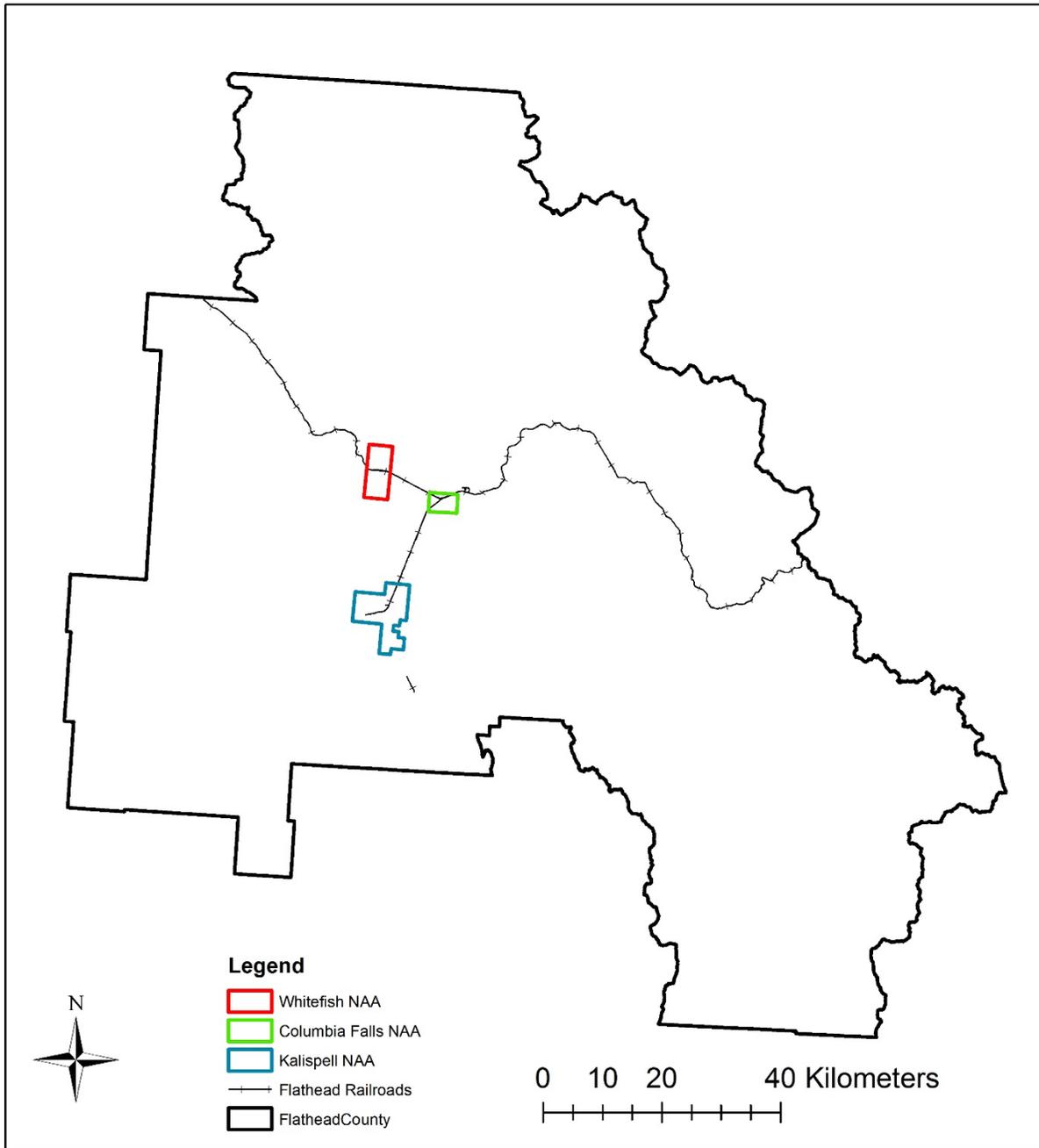
The table below shows the proposed NAA emissions for unpaved and paved road dust, and on-road mobile emissions based on the percent VMT in Whitefish compared to the county.

Table 5. 2017 Roadway Emission Estimates Based on VMT Scaling.

Source	Flathead County (2017 NEI) (tons)	Whitefish (tons)
Paved Road Dust	445.08	25.27
Unpaved Road Dust	17,040.29	967.37
Road Dust (paved & unpaved) Sub-total	17,485.37	992.64
Mobile – On-road Gasoline Light Duty Vehicles	67.19	3.81
Mobile – On-Road Non-diesel Heavy Duty Vehicles	0.80	0.05
Tailpipe (on-road non-diesel) Sub-total	67.99	3.86
Mobile – On-road Diesel Heavy Duty Vehicles	21.92	1.24
Mobile – On-road Diesel Light Duty Vehicles	9.38	0.53
Tailpipe (on-road diesel) Sub-total	31.30	1.78
Tailpipe (on-road diesel & non-diesel) Sub-total	99.29	5.64
Road (Road Dust & Tailpipe) Emissions Total	17,584.67	998.27

Locomotive Emission Calculation

A railroad runs through Flathead County, including all three NAAs. The location of the railroad tracks is shown below.



The locomotive emissions are available at the county level. Emission data within the NAAs are not available. Since all three NAAs are within the same county, using the county-total for each NAA would be a significant over estimation of locomotive emissions. On the other hand, scaling emissions based on the length of track in the NAA vs. the county may underestimate the emissions. The NAA all include stations, where idling emissions may be higher than on the tracks connecting the stations. To balance these two options, DEQ allocated all the county-level emissions to the NAAs, then scaling by the length of track in each area. In other words, the county-level emissions totally 43.27 tpy and were divided between Columbia Falls, Kalispell, and Whitefish based on the length of track in each area. DEQ believes this method adequately addresses idling concerns because Columbia Falls, which has the largest ‘hub’, where idling emissions are likely to occur, also receives the largest share of emissions. When looking closely at the Columbia Falls rail lines, numerous additional tracks are present in and around the train depot, increasing the share of emissions Columbia Falls ultimately receives. See the table below for the breakdown.

Flathead County 2017 NEI Mobile Emissions – Locomotives = 43.27 tons/year

Table 6. 2017 Locomotive Emission Estimate.

	Track Length (km)	Percent Compared to all NAA	Scaled Emissions (tons/year)
Flathead County	211.51	--	--
Columbia Falls	24.35	46.57%	20.15
Kalispell	17.37	33.21%	14.37
Whitefish	10.58	20.22%	8.75
Total within NAAs	57.70	100.00%	43.27

2017 NEI Data

Below are the 2017 NEI search results for the Flathead County source sectors used in developing the emission inventory for this redesignation request. In some cases, multiple sectors of emissions represent source categories above.

Table 7. 2017 NEI Data and Scaling Summary.

Sector	2017 NEI Emissions (tons)	Scaling Type	Scaling Factor	Whitefish NAA Emissions 2017 (tons)
Dust - Unpaved Road Dust	17,040.29	VMT	5.68%	967.37
Dust - Paved Road Dust	445.08	VMT	5.68%	25.27
Fuel Comb - Residential - Wood	190.21	Population	8.45%	16.08
Mobile - On-Road non-Diesel Light Duty Vehicles	67.19	VMT	5.68%	3.81
Mobile – Locomotives	43.27	Length of track	20.22%	8.75
Mobile - On-Road Diesel Heavy Duty Vehicles	21.92	VMT	5.68%	1.24
Mobile - Non-Road Equipment - Diesel	14.78	Population	8.45%	1.25
Mobile - Non-Road Equipment – Gasoline	13.90	Population	8.45%	1.17
Mobile - On-Road Diesel Light Duty Vehicles	9.38	VMT	5.68%	0.53
Mobile - On-Road non-Diesel Heavy Duty Vehicles	0.80	VMT	5.68%	0.05
	0.00			0.00
Fuel Comb - Industrial Boilers, ICEs - Natural Gas	3.85	Population	8.45%	0.33
Fuel Comb - Residential - Natural Gas	0.43	Population	8.45%	0.04
Fuel Comb - Comm/Institutional - Natural Gas	0.20	Population	8.45%	0.02
Total	17,851.30			1,025.91
Total On-road				998.27
Percent On-road				97.31%

APPENDIX C

Montana Department of Transportation Future VMT Projections

The Montana Department of Transportation (MDT) sent Department of Environmental Quality (DEQ) projected vehicle miles traveled (VMT) increases in all PM10 Nonattainment areas (NAA) on September 25, 2018 (Email from Marie Stump). MDT used the following methodology to determine future VMT growth:

- Calculated annual growth from 2011-2017
- Calculated annual growth from 2013-2017
- MDT recommended that DEQ use the highlighted growth rates.
- Applied that highlighted growth factor annually from 2018 to 2032.

Below shows the data provided by MDT to DEQ.

Daily VMT by City Limits						
Year	Columbia Falls	Kalispell	Whitefish	Libby	Butte	Thompson Falls
2017	72,345	382,949	153,510	20,745	451,252	8,507
2016	72,475	365,650	151,610	19,907	458,463	8,065
2015	70,308	358,976	150,395	19,079	459,827	8,085
2014	68,593	343,178	154,860	19,381	440,741	7,675
2013	64,926	345,902	141,166	19,860	432,981	7,710
2012	43,005	348,169	149,803	20,839	454,499	7,410
2011	40,936	341,663	130,768	20,967	461,215	7,428

Compound Annual Growth Rate

2013-2017	2.74%	2.58%	2.12%	1.10%	1.04%	2.49%
2011-2017	9.96%	1.92%	2.71%	-0.18%	-0.36%	2.29%

Projected Growth

2017	72,345	382,949	153,510	20,745	451,252	8,507
2018	74,327	392,829	156,765	20,974	455,945	8,702
2019	76,364	402,964	160,088	21,204	460,687	8,901
2020	78,456	413,360	163,482	21,438	465,478	9,105
2021	80,606	424,025	166,948	21,673	470,319	9,313
2022	82,815	434,965	170,487	21,912	475,210	9,527
2023	85,084	446,187	174,101	22,153	480,152	9,745
2024	87,415	457,699	177,792	22,397	485,146	9,968
2025	89,810	469,507	181,561	22,643	490,191	10,196
2026	92,271	481,620	185,411	22,892	495,289	10,430
2027	94,799	494,046	189,341	23,144	500,440	10,668
2028	97,397	506,793	193,355	23,398	505,645	10,913
2029	100,065	519,868	197,454	23,656	510,904	11,163
2030	102,807	533,281	201,640	23,916	516,217	11,418

2031	105,624	547,039	205,915	24,179	521,586	11,680
2032	108,518	561,153	210,281	24,445	527,010	11,947

10-Year Growth

2022-2032	31.04%	29.01%	23.34%	11.56%	10.90%	25.41%
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APPENDIX D

PUBLIC NOTICE DOCUMENTATION AND COMMENTS

Include when available.