

**Town of Mammoth Lakes
PM10 Planning Area
Second 10-Year Maintenance Plan**

2023



Great Basin Unified Air Pollution Control District

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Executive Summary

The federal Clean Air Act (CAA) requires that an area redesignated attainment from nonattainment status for any of the National Ambient Air Quality Standards (NAAQS or Federal Standard) must submit a maintenance plan for ensuring the NAAQS will be met for a 10-year period following the redesignation. Section 175A of the CAA Amendment requires redesignated areas to submit a second maintenance plan to the United States Environmental Protection Agency (US EPA) eight years after the first plan has been approved in order to demonstrate continued maintenance of the NAAQS for the subsequent 10-year period.

The Town of Mammoth Lakes PM10 Planning Area was designated as a moderate nonattainment area for the PM10 NAAQS by the US EPA in 1990. The PM10 issue in the Town of Mammoth Lakes is primarily caused by smoke from wood stoves and fireplaces and from traffic-related dust entrained from crushed volcanic cinders used on roadways for traction control during winter. In addition, wildfires have, with increasing frequency over the past two decades, resulted in high levels of particulate matter from smoke during the summer and fall. In 1990, the Great Basin Unified Air Pollution Control District (District) and the Town of Mammoth Lakes (Town) jointly adopted the 1990 Air Quality Management Plan which included permanent and enforceable regulations to address the local sources of particulate emissions. These regulations resulted in PM10 emission reductions such that in 2014 the area was designated to attainment effective November 4, 2015. Concurrent with redesignation, the US EPA approved the 2014 Town of Mammoth Lakes PM10 Maintenance Plan.

This Town of Mammoth Lakes PM10 Planning Area Second 10-Year Maintenance Plan (Plan) fulfills the CAA requirements for a second 10-year maintenance plan to demonstrate continued maintenance of the PM10 NAAQS for the 10-year period following the expiration of the first maintenance plan. This Plan contains the required background information on existing air quality, an updated emission inventory, verification of continued attainment, a commitment to maintaining monitoring network integrity, a description of the existing control strategy, and contingency measures to ensure the NAAQS is maintained.

This Plan relies on the continued implementation of the particulate emission regulations and contingency measures that brought the area into attainment and supported the initial maintenance plan. These control measures include regulations to address woodsmoke and other sources of particulate emissions, stationary source controls, and District rules and regulations to control sources of PM10. This Plan contains contingency measures and specific timeframes for the adoption of these measures if necessary to maintain the NAAQS.

The Town of Mammoth Lakes PM10 Planning Area Second 10-Year Maintenance Plan fulfills the CAA requirements for a second 10-year maintenance plan and demonstrates that the area will continue to meet the PM10 Federal Standard for the second 10-year period (2025-2035), following the expiration of the first 10-year maintenance plan.

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Glossary

BACM	Best Available Control Measure
BACT	Best Available Control Technology
CA	California
CAA	Clean Air Act
CARB	California Air Resources Board
CFR	Code of Federal Regulations
District	Great Basin Unified Air Pollution Control District
Federal Standard	National Ambient Air Quality Standard
FR	Federal Register
GBUAPCD	Great Basin Unified Air Pollution Control District
NAAQS	National Ambient Air Quality Standards
PM	Particulate Matter
PM10	Particulate Matter of Size Less Than or Equal to 10 Micrometers
PSD	Prevention of Significant Deterioration
SIP	State Implementation Plan
US EPA	United States Environmental Protection Agency
km	kilometers
m/s	meters per second
mph	miles per hour
g/m ²	grams per square meter
µg/m ³	micrograms per cubic meter

1. Planning Area

The Town of Mammoth Lakes (Mammoth Lakes or Town) is located in the southern portion of Mono County, California (Figure 1). Nestled in forested slopes on the eastern side of the Sierra Nevada mountains, Mammoth Lakes is located at an elevation of 7,861 feet (2,396 m) above mean sea level. The Town was incorporated in 1984 and has grown from a permanent population of 390 in 1960, to 4,785 in 1990, and to 7,191 in 2020. The Town's economy is primarily tourism-based. The Mammoth Mountain Ski Resort is included in the Town boundaries and attracts over 2 million visitors per year, with approximately 1.3 million visitors each winter. Major winter weekends see the population of the Town swell to approximately 35,000 people.

The PM10 (particulate matter of size less than or equal to 10 micrometers) Planning Area, determined by the US EPA as the PM10 nonattainment area, covers approximately 68 square miles and encompasses all the incorporated portions of the Town, including Mammoth Mountain Ski Resort, part of the Mammoth Lakes Basin, and Mammoth Yosemite Airport, and portions of unincorporated Mono County. Figure 1 shows the PM10 Planning Area and the major features located within the boundary. The PM10 Planning Area is located entirely within the jurisdiction of the Great Basin Unified Air Pollution Control District (District). Except for wildfire smoke events and forest management activities such as prescribed burning, the majority of particulate matter contributions originate from sources within the Town's boundary.

The PM10 issue in Mammoth Lakes primarily results from smoke from wood stoves and fireplaces used for home heating, and from dust entrained from crushed volcanic cinders which are used on snow and ice covered roadways for vehicle traction control during winter. High ambient levels of particulate matter are usually associated with calm winter days with little wind. Historically, many homes and rental units have relied on wood-burning devices for heating. Temperature inversions during the winter season can result in elevated particulate matter concentrations in the lower elevations of the Town. In addition, the particulates generated from resuspended road dust and cinders that are applied to roadways during snowstorms can add to PM10 levels after the roads dry. The combination of woodsmoke, road dust, and meteorological stagnations, especially during peak periods of visitation during the ski season, has been associated with elevated PM10 concentrations. Wildfires have, with increasing frequency over the past ten years, resulted in high levels of particulate matter during the summer and fall.

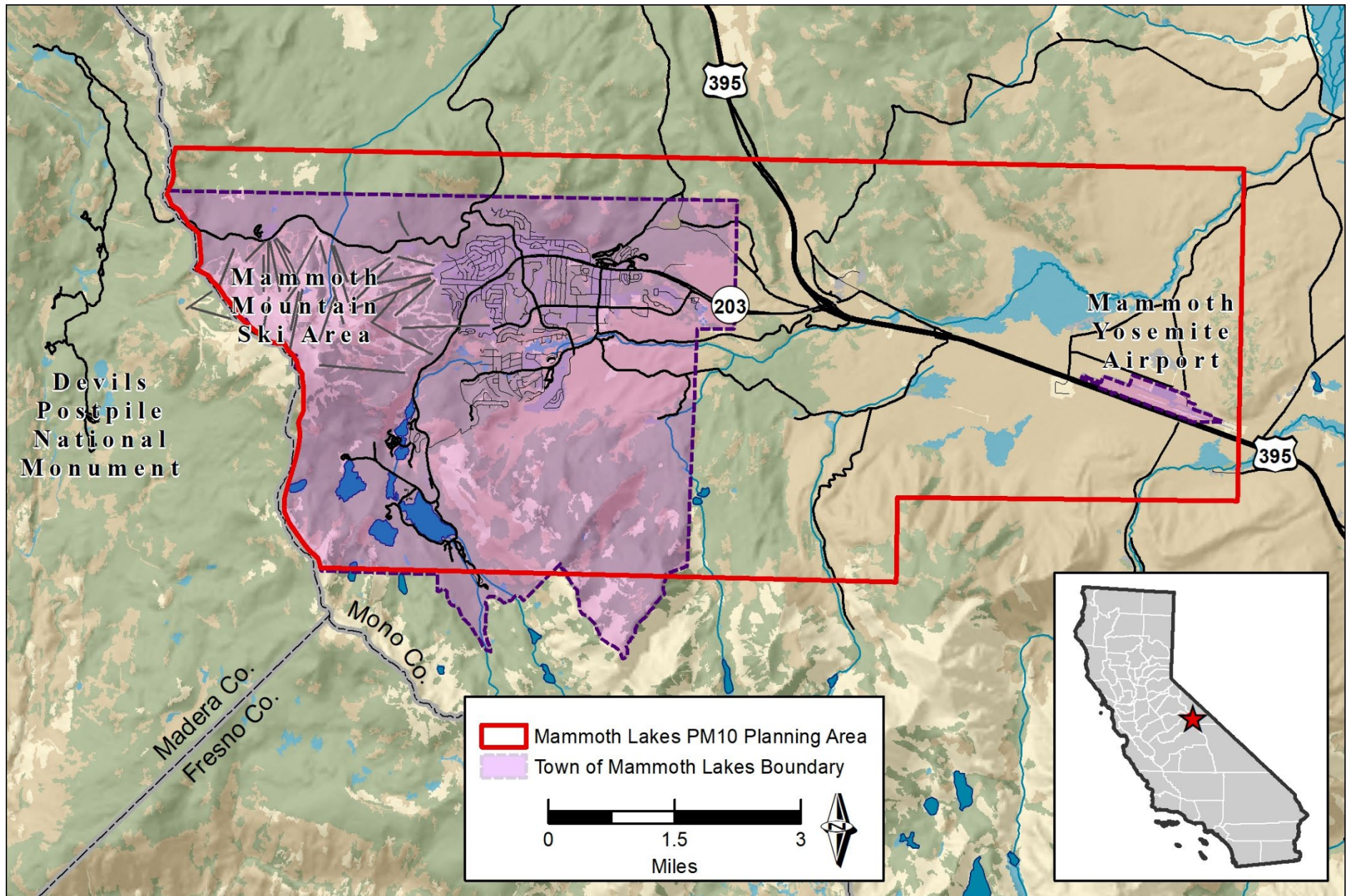


Figure 1. Mammoth Lakes PM10 Planning Area Map

2. Clean Air Act Regulatory History

The National Ambient Air Quality Standard (NAAQS or Federal Standard) for PM10 was set July 1, 1987, at 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for the 24-hour standard not to be exceeded more than once per year on average over a three consecutive calendar year period. Levels for the PM10 Federal Standard were selected to protect people who may be sensitive to exposure to airborne particulate matter. Particles less than 10 microns are usually inhaled and retained in the deepest part of the lungs. Children, the elderly, those with cardiovascular and respiratory problems, and those with influenza are especially susceptible to increased respiratory problems and illnesses due to exposure to high levels of PM10.

In November 1990, the PM10 Planning Area was designated a moderate nonattainment area for the 24-hour PM10 Federal Standard. Subsequently, the District and Town jointly adopted the 1990 Air Quality Management Plan which included particulate emissions regulations adopted in District Rule 431¹ and Town of Mammoth Lakes Municipal Code Chapter 8.30². These regulations controlled the installation of wood stoves and other solid fuel-burning appliances, instituted voluntary and mandatory no-burn days, required street sweeping to clean up the cinders on the roads after snow events, and limited the peak traffic volume for future developments. After several amendments, the US EPA approved the 1990 Air Quality Management Plan in June 1996. Implementation of the control measures resulted in an immediate and significant decline in ambient PM10 levels in the PM10 Planning Area from wood-burning appliances and road dust.

In 2013, following 23 years of air quality improvement, the Town and District staff worked cooperatively to revise the 1990 Air Quality Management Plan and prepare a request for attainment redesignation. The First 10-year Maintenance Plan contained several revisions from the 1990 Air Quality Management Plan including strengthening the existing regulations governing particulate matter emissions. These revisions included prohibiting installation of solid fuel appliances, except for pellet stoves, in new multi-unit developments and expanding no-burn day requirements to include all wood-burning devices, except pellet stoves. The revisions were adopted in District Rule 431 and Town Municipal Code Chapter 8.30. The request for redesignation to attainment demonstrated that: the monitored area had achieved attainment of the PM10 Federal Standard; the area had a fully approved State Implementation Plan; the improvement in air quality was due to permanent and enforceable reductions in emissions; and the state had submitted, and US EPA had approved, a maintenance plan for the area. On November 6, 2013, the Town adopted and approved the proposed maintenance plan and associated regulatory revisions. On May 5, 2014, the Great Basin Unified Air Pollution Control District Governing Board adopted and approved the proposed maintenance plan and adopted revisions to District Rule 431 making the District rule consistent with the requirements contained in Chapter 8.30 of the Town Municipal Code. District Rule 431 allows the District to enforce air quality regulations governing residential wood combustion and road dust in the Town. The

¹ District Rule 431: See Appendix A. Also available at:

<https://www.gbuapcd.org/Docs/PermittingAndRules/RulesAndRegulations/Rule431.pdf>

² Municipal Code 8.30: Available at: https://www.townofmammothlakes.ca.gov/DocumentCenter/View/4520/MC8-30_Final-5-14-14

2014 First 10-Year Maintenance Plan and redesignation request was adopted by the State of California Air Resources Board on September 18, 2014. The US EPA approved the Plan and redesignated the PM10 Planning Area as a maintenance area in attainment of the PM10 Federal Standard on November 2, 2015 (80 FR 60049 Federal Register). The Town and the District have committed to the continuation of the air quality program in the PM10 Planning Area through the continued implementation of control measures and the continuation of ambient air quality monitoring.

Redesignated areas are required to submit a second maintenance plan eight years after the first plan has been approved to demonstrate continued maintenance of the NAAQS during the 10-year period following the expiration of the first plan. The first Town of Mammoth Lakes PM10 Maintenance Plan covers 2015-2025 and this document fulfills the requirements for a second 10-year maintenance plan, covering the period of 2025-2035.

3. Air Quality

This section summarizes a history of ambient air quality monitoring activities in the PM10 Planning Area and presents the PM10 conditions and trends for the Town. After many years of improvement in air quality as measured by the decrease in the frequency of PM10 NAAQS exceedances, there has been a general stabilization in the past two decades of wintertime exceedances. PM10 exceedances in the summer and fall caused by wildfires have increased in frequency in the past decade. However, when the PM10 exceedances caused by wildfire smoke are excluded for consideration related to the attainment status, as provided for in the US EPA Exceptional Events Rule, the area continues to demonstrate compliance with the PM10 Federal Standard.

3.1. Air Quality Monitoring History

In 1979, the District first started monitoring particulate matter in Mammoth Lakes. In 1987, the US EPA revised the Federal Standard for particulate matter establishing a 24-hour Federal Standard of $150 \mu\text{g}/\text{m}^3$ for PM10 not to be exceeded more than once per year on average over a three consecutive calendar year period. Soon after, based on the monitoring conducted by the District, the US EPA classified the Town as a Group I area with a greater than 95% probability of violating the Federal Standard (52 Federal Register 29384) and required the District to develop a State Implementation Plan (SIP) that included control measures to bring the area into attainment with the PM10 Federal Standard.

From 1985 to 1990, monitoring in Mammoth Lakes by the District recorded 10 violations of the 24-hour PM10 Federal Standard. Monitoring at that time was conducted on a once-every-six-day cycle and extrapolation of the data predicted 11.2 expected violations of the PM10 Federal Standard per year. Joint investigation by the Town and the District found the high PM10 levels were largely caused by particulate emissions from residential wood combustion and road dust entrained into the air by vehicles on roads treated with volcanic cinders during the winter. On November 15, 1990, the PM10 Planning Area was designated as a moderate nonattainment area for the 24-hour PM10 Federal Standard (56 Federal Register 11101).

To better characterize the nature of the PM10 problem, the relative contribution of wood smoke and road dust were analyzed for both the 1990 Air Quality Management Plan and the 2014 First 10-Year Maintenance Plan. Chemical mass balance analysis done in support of the 1990 Air Quality Management Plan showed almost all of the PM10 was due to residential wood combustion (75%) and road dust (25%). A chemical mass balance study was conducted in 2013 to determine whether the relative contributions had changed. The findings of the 2013 study showed an average of 68% of PM10 due to residential wood combustion and 32% due to road dust. The study also found that since the adoption of control measures in 1990, peak PM10 impacts from woodsmoke and road dust both dropped by about 33%. In addition to the studies indicating the control measures were working, the findings also clearly showed that the PM10 problem is driven by direct PM10 emissions and that any secondary particulate matter and precursors are not significant contributors.

3.2. Current Air Quality Monitoring and PM10 Data Summary

At present, the District operates one PM10 monitoring station (AQS Site No. 06-051-0001), a designated State and Local Air Monitoring Station (SLAMS), in the Mammoth Lakes PM10 Planning Area. The PM10 monitoring site is located on the roof of the Mammoth Gateway shopping center, located at 26 Old Mammoth Road. The District has utilized a variety of instruments, methods, and sampling frequencies at the site to measure PM10 concentrations since PM10 was first monitored at this location in 1986. The station includes meteorological sensors that measure wind speed, wind direction, and temperature among other variables. The District's monitoring activities are conducted in accordance with Title 40 of the Code of Federal Regulations Parts 50, 53, and 58, to provide defensible air quality data in order to verify the attainment status of the area and to provide information to the public during air pollution episodes.

Five types of PM10 monitors have been used at the Mammoth monitoring site, including: 1) a high-volume sampler with a Size Selective Inlet (SSI) measuring PM10; 2) a dichotomous sampler (dichot) measuring PM10 and PM2.5, both monitoring one day every six days; 3) a PM10 Partisol, which measures one day every three days, and; 4) a Tapered Element Oscillating Microbalance (TEOM) continuous PM monitor which provides daily and hourly PM10 concentrations in real time. The TEOM was often operated with a co-located PM10 Partisol per regulation. In addition, 5) a Teledyne API T640X continuous monitor was operated as a Special Purpose Monitor between 2018 and 2022. PM10 monitor data are not available for 1999 and 2000 because the building that housed the monitor was being renovated. The type of PM10 monitor used in each year is identified at the bottom of Table 1.

Implementation of the control measures included in the 1990 Air Quality Management Plan was successful in reducing PM10 emissions from wood-burning and road dust. Prior to any control measure implementation, monitoring predicted approximately eleven (11) exceedances of the Federal PM10 Standard per year. Following implementation, only three (3) exceedances of the PM10 Federal Standard were recorded between 1990 and 1994, and zero (0) Federal exceedances were recorded from 1994 to 2012. Air quality improved significantly with peak PM10 levels being reduced to the point that by 1993

monitoring data showed that the Town was in compliance with the Federal PM10 Standard. Monitoring data collected from 1993 through 2012 showed that the area has maintained compliance with the Federal Standard during that entire period, and as such, was submitted and approved for redesignation from nonattainment to attainment.

From 2012 to 2022, thirty-nine (39) days with exceedances of the PM10 Federal Standard have been monitored. However, thirty-eight (38) of those days the exceedances were caused solely by wildfire smoke events. The District has documented the wildfire events which resulted in the exceedances and has requested the exclusion of these exceedances under the US EPA's Exceptional Events Rule. Exceptional events are defined by US EPA as unusual or naturally occurring events that affect air quality but are not reasonably controllable or preventable. Exceedances recognized as exceptional events by US EPA do not count toward or against an area in meeting the NAAQS.

Table 1 provides a summary of all the PM10 Federal Exceedances from 1990 to 2022. The data presented includes the number of monitored PM10 Federal Exceedances including and excluding exceptional events for each year, as well as providing the expected number of annual exceedances. Table 2 provides detailed information regarding each of the PM10 Federal Exceedances that occurred during the first 10-year maintenance plan period from 2015 through the end of 2022. During portions of this period, the District was operating two separate PM10 monitors at the Mammoth Lakes monitoring station. As a result, some days (e.g., 9/6/2020) have more than one monitored PM10 exceedance, as both monitors recorded PM10 exceedances. Table 2 provides a summary that breaks down the exceedances per day and per monitor including details of whether the exceedances were captured on a SLAMS monitor or a Special Purpose Monitor (SPM).

For the years 2020-2022, Table 1 details whether the exceedances occurred on a Federal Reference Method (FRM) or a Federal Equivalent Method (FEM) monitor. During this time the FEM monitor, a T640X operating as a SPM, experienced frequent machine malfunctions in 2021 and 2022 that resulted in data invalidations leading to invalid design values for both years. The FRM operating during this time period, a Partisol on 1:3 day schedule, had sufficient completeness to calculate valid design values for all three years, 2020-2022.

Table 1. Summary of PM10 Federal Exceedances 1990 - 2022

Year	Number of Days with PM10 Exceedances (>150 µg/m ³)		Number of Valid Sample Days	Sufficient Data Capture ¹	Expected # of PM10 Federal Exceedances (>150 µg/m ³)	Max PM10 (µg/m ³)
	All Data	Excluding Exceptional Events				
1990	2	2	58	Y	12.6	161
1991	0	0	48	N	0	134
1992	0	0	60	Y	0	138
1993	1	1	59	Y	6.2	178
1994	0	0	58	Y	0	92
1995	0	0	58	Y	0	122
1996	0	0	51	Y	0	74
1997	0	0	59	Y	0	112
1998	0	0	37	N	0	106
1999 ²	--	--	0	N	--	--
2000 ²	0	0	18	N	0	70
2001	0	0	48	Y	0	134
2002	0	0	17	N	0	129
2003	0	0	86	N	0	74
2004	0	0	109	Y	0	86
2005	0	0	92	N	0	85
2006	0	0	110	Y	0	78
2007	0	0	115	Y	0	67
2008	0	0	164	Y	0	138
2009	0	0	365	Y	0	118
2010	0	0	348	Y	0	104
2011	0	0	360	Y	0	128
2012	0	0	342	Y	0	56
2013	2	0	365	Y	0	182
2014	0	0	365	Y	0	130
2015	0	0	357	Y	0	84
2016	0	0	362	Y	0	123
2017	0	0	361	Y	0	87
2018	3	0	336	Y	0	308
2019	0	0	359	Y	0	118
2020 (FRM/FEM) ³	7/34	0/1	119/348	Y/Y	0/1	334/1146
2021 (FRM/FEM) ³	0/0	0/0	115/107	Y/N	0/0	84/124
2022 (FRM/FEM) ³	0/0	0/0	119/241	Y/N	0/0	68/60

¹ Sufficient Data Capture is ≥ 75 percent of the scheduled PM10 samples per quarter, per Appendix K to Part 50, Title 40

² PM10 monitor site closed for building renovation.

³ 2020-2022 broken out into Federal Reference Method (FRM) (POC 5) and Federal Equivalent Method (FEM) (POC 6).

Data Source: US EPA Air Quality System (US EPA, 2023)

AQS data sources: 1/1/1990 to 5/8/2002 is 1:6 day Partisol (SLAMS FRM); 2/1/2003 to 10/24/2008 is 1:3 day Partisol (SLAMS FRM); 10/24/2008 to 9/20/2018 and 4/25/2022 to 12/31/2022 is both 1:3 day Partisol (SLAMS FRM) and daily TEOM (SLAMS FEM). 9/21/2018 to 4/15/2022 is 1:3 day Partisol (SLAMS FRM) and daily T640x (SPM FEM).

Table 2. Detail of PM10 Federal Exceedances 2015-2022

Date	SLAMS PM10 Exceedance (µg/m3)	Special Purpose Monitor (SPM) PM10 Exceedance (µg/m ³)	Request Exclusion from NAAQS as Exceptional Event	Primary Cause of Exceedance
8/2/2018	308		Yes	Wildfire Smoke from Ferguson and Lions Fire
8/3/2018	261		Yes	
8/3/2018	239		Yes	
8/4/2018	180		Yes	
9/6/2020	168	296	Yes	Wildfire Smoke from Creek Fire, Sequoia (SQF Complex), and other fires
9/8/2020		597	No	Regional dust and wildfire smoke
9/10/2020		890	Yes	Wildfire Smoke from Creek Fire, Sequoia (SQF Complex), Slink Fire, and other fires
9/11/2020		424	Yes	
9/12/2020		191	Yes	
9/13/2020		486	Yes	
9/14/2020		1001	Yes	
9/15/2020	334	1146	Yes	
9/16/2020		1030	Yes	
9/17/2020		896	Yes	
9/18/2020		243	Yes	
9/19/2020		508	Yes	
9/20/2020		350	Yes	
9/21/2020	174	351	Yes	
9/22/2020		400	Yes	
9/23/2020		444	Yes	
9/24/2020	198	464	Yes	
9/25/2020		390	Yes	
9/26/2020		215	Yes	
10/5/2020		282	Yes	
10/6/2020		259	Yes	
10/7/2020		237	Yes	
10/8/2020		251	Yes	
10/12/2020	192	412	Yes	
10/13/2020		673	Yes	
10/15/2020		253	Yes	
10/17/2020		808	Yes	
10/18/2020	284	781	Yes	
10/19/2020		771	Yes	
10/21/2020		291	Yes	
10/22/2020		525	Yes	
10/23/2020		514	Yes	
10/24/2020	182	417	Yes	
10/25/2020		303	Yes	

AQS data sources: 1/1/2015 to 9/20/2018 and 4/25/2022 to 12/31/2022 is both 1:3 day Partisol (SLAMS FRM) and daily TEOM (SLAMS FEM). 9/21/2018 to 4/15/2022 is 1:3 day Partisol (SLAMS FRM) and daily T640x (SPM FEM).
Source: US EPA Air Quality System (US EPA, 2023)

For the first 10-year maintenance period, all but one of the monitored PM10 Federal Exceedances were caused solely by wildfire smoke events and were identified by the District as exceptional events. In 2018, there were three (3) days with four (4) PM10 exceedances, all due to wildfire smoke impacts from the Ferguson and Lions Fires. In September and October 2020, wildfire smoke impacts resulted in forty (40) PM10 exceedances on thirty-three (33) days. These exceedances were caused by smoke from wildfires including the Creek Fire, Sequoia (SQF Complex), and other fires, from which winds transported the smoke across large areas of California and the western United States. All forty (40) of these exceedances were requested for exclusion by the District as Exceptional Events. An additional exceedance during this period was determined by the District to be caused by both contributions from wildfire smoke and regional dust. This event, on September 8, 2020, was not requested as an Exceptional Event, due to the mixed source contributions.

The particulate matter trend has generally continued to show air quality improvement. Figure 2 shows the PM10 trend for the winter months (November-March) displaying the average and peak PM10 winter concentrations. The marked decrease in PM10 concentrations following the adoption of control measures in 1990 has transitioned to a more gradual decline and leveling off in the past two decades. Figure 3 shows the trend of daily PM10 values from 2015 to 2022. Excluding PM10 Federal Exceedances caused by wildfire smoke in the summer and fall, there has only been one PM10 Federal Exceedance that is not solely due to wildfire smoke. The impacts of wildfire smoke events are shown in Figure 4, which displays the increased frequency and magnitude of wildfire events that have impacted the Town over the past decade.

3.3. Maintenance of the National Ambient Air Quality Standards (NAAQS)

The NAAQS allows for one (1) exceedance of the 24-hour PM10 standard per year averaged over a three consecutive calendar year period. A review of daily ambient PM10 monitoring data from the Mammoth Lakes monitoring site shows forty-one (41) monitored exceedances of the federal 24-hour PM10 standard (150 micrograms per cubic meter, $\mu\text{g}/\text{m}^3$) on thirty-four (34) days during the three-year period from January 2020 through December 2022. However, as discussed above, forty (40) PM10 exceedances on thirty-three (33) days were caused solely by wildfire smoke events and were determined to be Exceptional Events. When these exceptional events are excluded from the 2020-2022 design value calculation, as provided for in the US EPA Exceptional Events Rule, the resulting design value is 0.6 exceedances per year and the monitoring site is in attainment with the PM10 NAAQS. Concurrently with this Plan, the District is submitting an exceptional event demonstration analysis and requesting the exclusion of the Federal PM10 exceedances in 2020 caused solely by wildfire smoke impacts (GBUAPCD, 2023).

**Figure 2. Mammoth PM10 Winter Season Peaks and Averages
(1990-1991 to 2022-2023)**

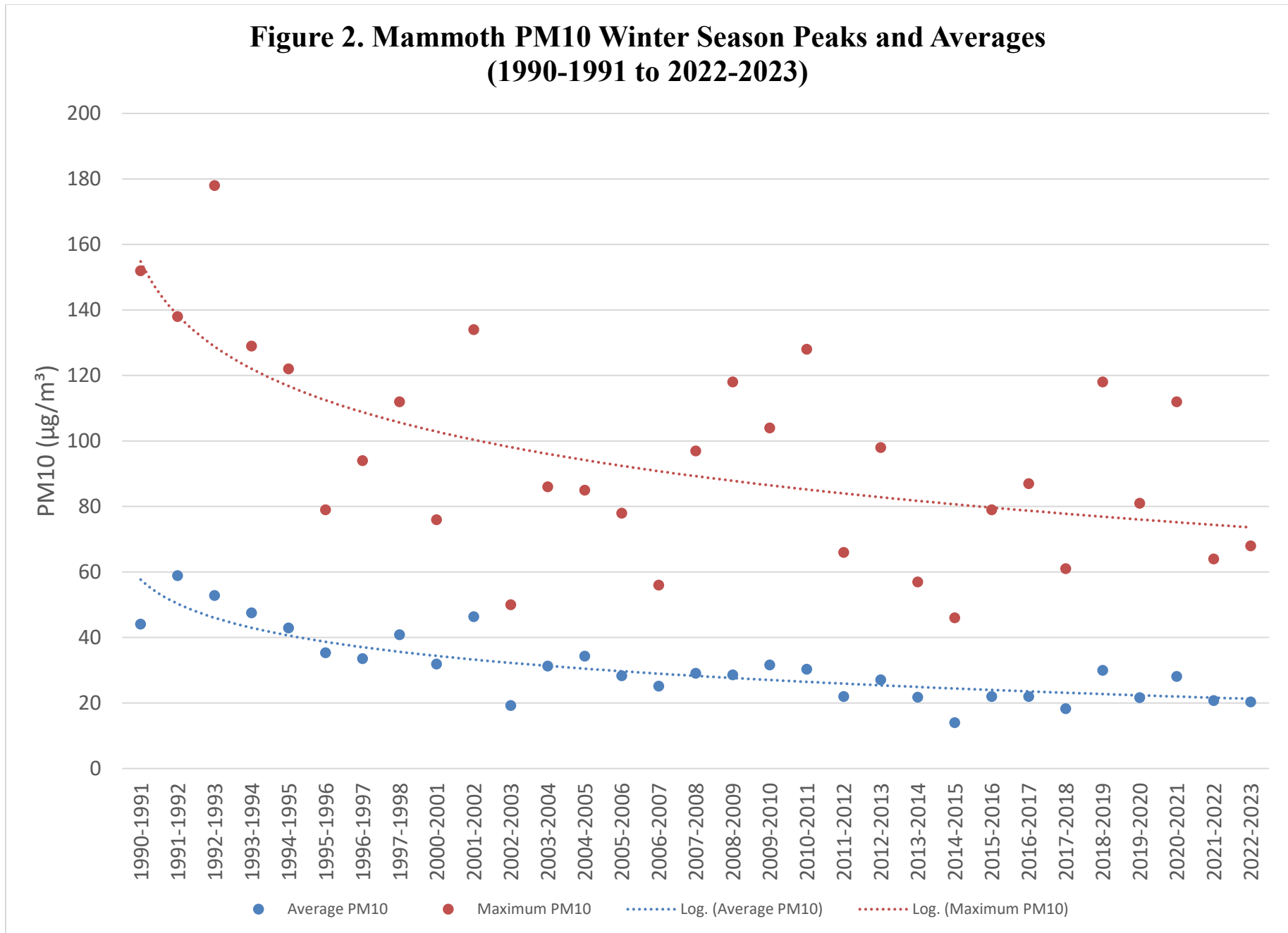
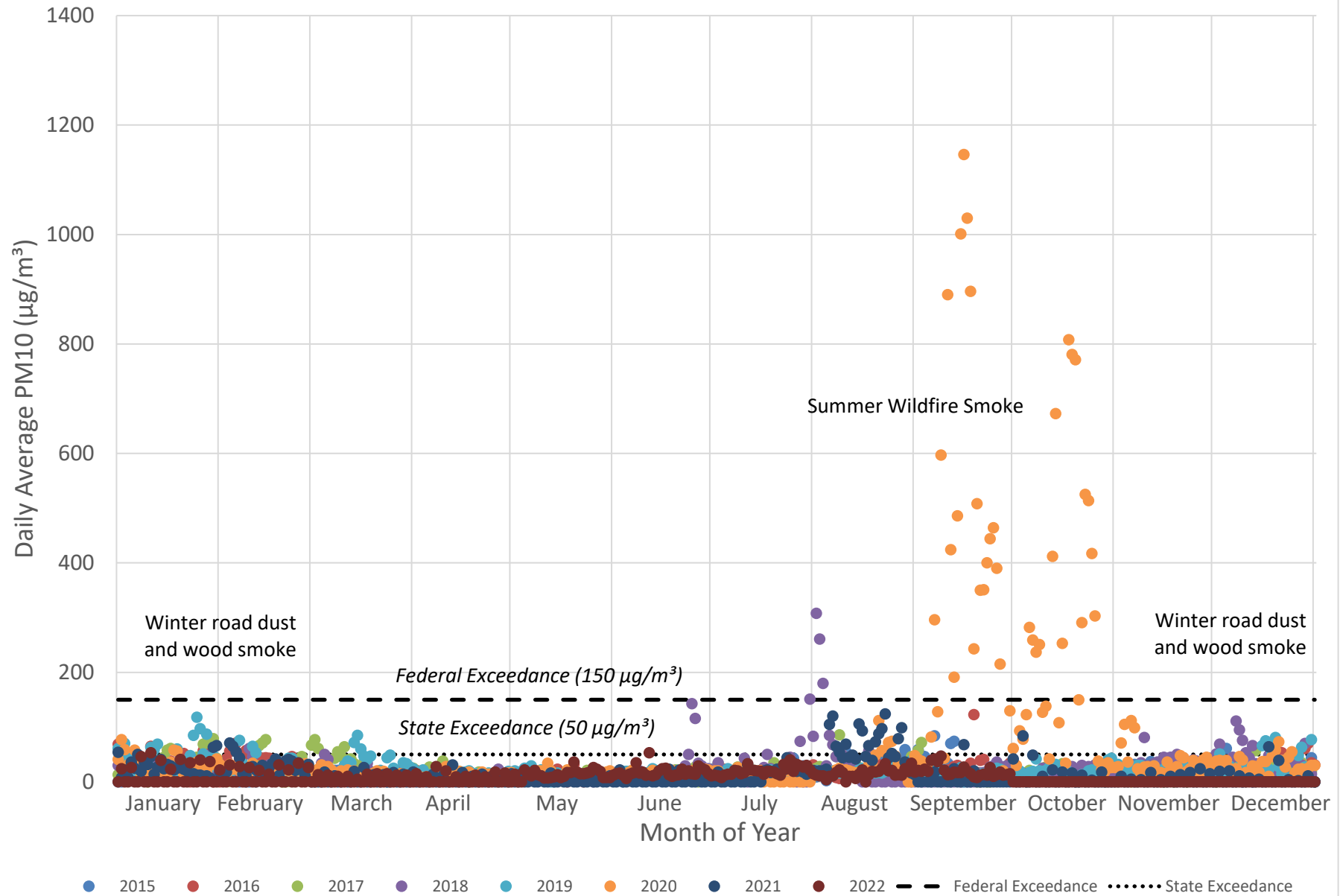
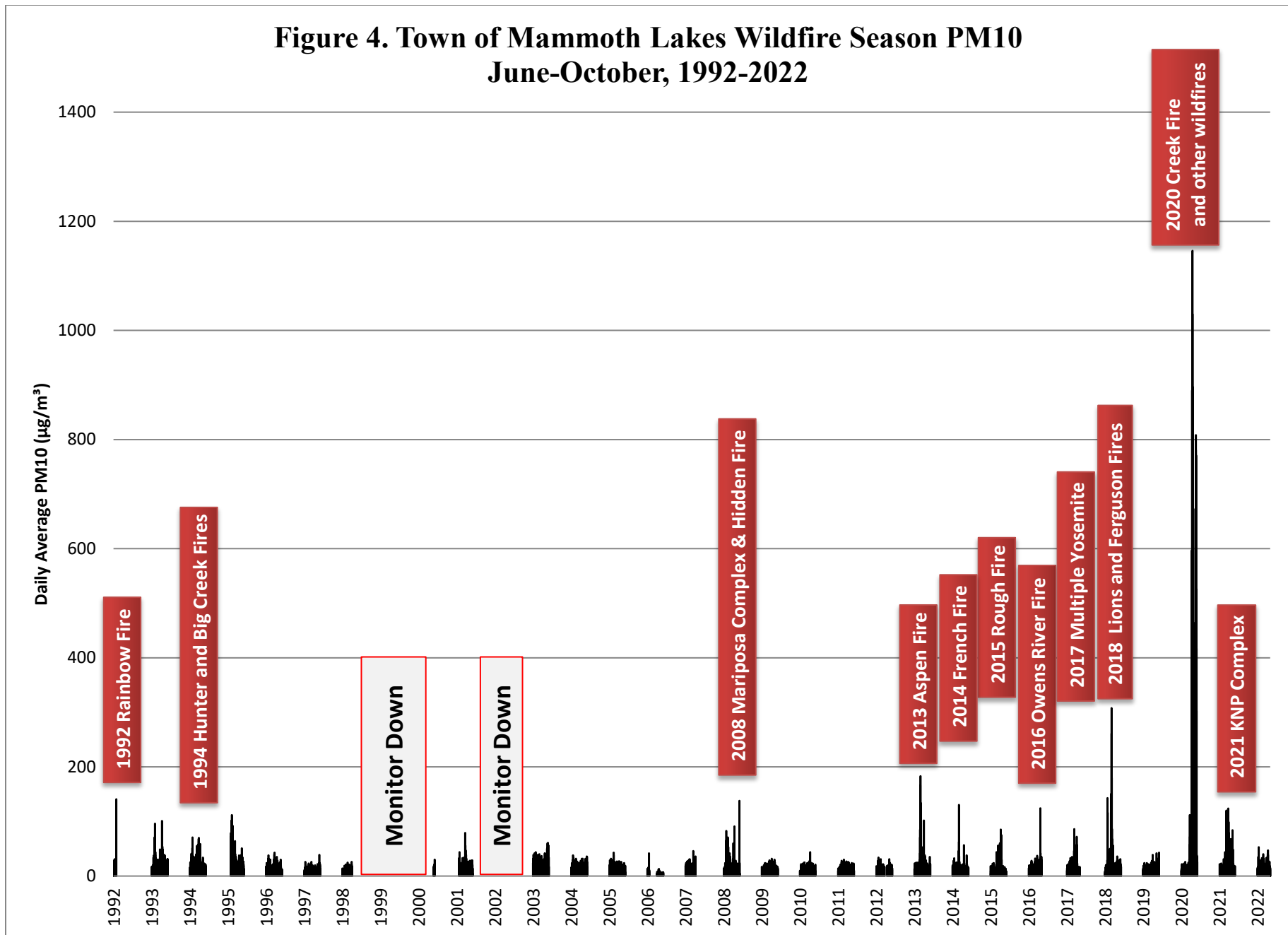


Figure 3. Mammoth Lakes Daily Average PM10 (2015-2022)



**Figure 4. Town of Mammoth Lakes Wildfire Season PM10
June-October, 1992-2022**



4. Emissions Inventory

This section provides a description of the different sources the PM10 emission inventory includes, an overview of the methodology utilized to estimate emissions and a summary of the resulting PM10 emission estimates for the PM10 Planning Area.

4.1 Emission Inventory Categories

The emissions inventory includes PM10 emission estimates for residential wood combustion, resuspended road dust and cinders, mobile source tailpipe, tire wear, brake wear emissions, point source emissions, and forest management for the second 10-year maintenance period (2025-2035). These emissions were estimated for the peak winter period when visitor roadway travel and residential wood-burning are the greatest. Other notable PM10 emission sources, such as travel on unpaved roads, construction activities, and windblown fugitive dust, are seasonal and expected to be de minimis in the peak winter period due to weather conditions and snow cover and thus are excluded from the inventory. Detailed information, including the methodology and data used to determine emissions for each source category, are provided in Appendix B.

Residential Wood Combustion

Residential wood combustion emissions are composed of PM10 released from wood-burning fireplaces, woodstoves, and pellet stoves. Emissions are dependent on the device types, the number of devices, and the amount of fuel used. For this inventory update, the baseline numbers of devices were derived from the 2014 First 10-year Maintenance Plan and the 2017 Triennial Progress Report from data provided by the Town's Building Permits Department. Updated device counts for 2023 were generated from updated data provided by the Town. Devices were categorized by device type as well as residence type. Emissions were calculated using emission factors from CARB (California Air Resources Board) Miscellaneous Process Methodology 7.1 for Residential Wood Combustion. Future year emissions were estimated using the high end permanent resident population annual average growth rate of 2.4% per year from the Town's 2016 Mobility Element.

Resuspended Road Dust Emissions

PM10 from resuspended road dust for the winter were calculated in terms of silt loading multiplied by peak winter average daily vehicle miles traveled (VMT) to determine daily emissions. This PM10 emission estimate is based on CARB Miscellaneous Process Methodology 7.9 for Entrained Road Travel, Paved Road Dust, and USEPA AP-42, Chapter 13.2.1. The VMT was estimated for travel on roads within the Town of Mammoth Lakes (in-town) and travel on highway Route 203 and Route 395 (out-of-town). In-town VMT for baseline conditions was obtained from the Town's 2016 Mobility Element. Out-of-town VMT was estimated by evaluating the average daily traffic data from Caltrans using the applicable roadway segment lengths for Route 203 and Route 395. Future in-town VMT was estimated using growth rates from the Town's 2016 Mobility Element. Out-of-town VMT in future years was estimated based on average annual VMT growth between 2016 and 2023.

For this Second 10-Year Maintenance Plan the silt loading factors were revised at the recommendation

of CARB. The 2014 First 10-year Maintenance Plan utilized a silt loading factor of 8.7 grams per square meter (g/m^2) that originated from calculations developed for the 1990 State Implementation Plan. The factor was significantly higher than the CARB Paved Road Dust Methodology default silt loading factors of $0.32 \text{ g}/\text{m}^2$. It was determined that the CARB default silt loading factor was the most up to date, and most widely used, silt loading factor. As such, the emissions estimate was revised to utilize the CARB default silt loading factor. The result of this change is a significant reduction in the PM10 emission estimate for resuspended road dust from 2014 to 2025. This reduction is almost entirely due to the change in the silt loading factor. There were no significant changes in VMT, roadway miles or classification, or in-town or out-of-town boundaries. Additionally for this Plan, the CARB default silt loadings were adjusted using the USEPA AP-42 winter baseline multiplier to account for contributions from anti-skid abrasives. District Rule 431 and the Town's municipal code require a street sweeping program to reduce PM10 emissions. A control factor of 34% was applied to the road dust emission factors to account for street sweeping, consistent with the 2014 emission inventory.

Tailpipe, Tire Wear, and Brake Wear Emissions

PM10 emissions from mobile source tailpipe, tire wear, and brake wear were estimated using CARB's latest mobile source emission factor model, EMFAC2021 (v1.0.2) using total daily VMT for in-town and out-of-town travel. The emissions output was adjusted externally to account for CARB's Clean Truck Check – Heavy-Duty Inspection and Maintenance Program (HD I/M) and Advanced Clean Cars II (ACC-II) regulations which were adopted after EMFAC2021 was released.

Stationary Sources

The District issues permits for stationary (point) sources. Within the PM10 Planning Area boundary, these emission sources include concrete batch plants, boilers, and diesel engines located at four in-town locations and six out-of-town locations. PM10 emissions from these sources were determined by the District utilizing annual reporting data from the facilities and data collected during the permitting of the facilities. Emissions for stationary sources have not varied significantly from the first 10-year maintenance period to 2023. Given the limited land available for development, future year emissions are estimated to be equivalent to 2023 emissions.

Forest Management

Particulate emissions from forest management are the result of prescribed burns implemented to maintain and improve forest health. Emissions from this source category were estimated as a ten-year average by CARB using the United States Department of Agriculture First Order Fire Effects Model (FOFEM), version 6.7. Forest Management was not included as a source category for previous PM10 emission inventories and is not represented in the 2014 emission inventory.

4.2 PM10 Emission Estimate Summary

A summary of PM10 emissions estimates is provided in Table 3. Emissions estimates for 2025 are summarized, along with the previous emission estimates from the 2014 First 10-Year Maintenance Plan as well as projections for 2035. Residential wood combustion and resuspended road dust comprise the majority of PM10 emissions during the winter. For 2025, motor vehicle exhaust, tire wear, and industrial

sources contribute only approximately 1.2% of the PM10 emissions. From 2025 to 2035, total planning area peak 24-hour PM10 emissions are estimated to increase by 518 pounds per day or 0.26 tons per day during the 2nd 10-year maintenance period. This increase is the result of increases for the residential wood combustion and road dust and cinders categories, due to utilizing the high-end in expected growth in permanent resident population, the high-end projected increase in vehicle miles traveled, and the conservative assumption that residential wood-burning would remain constant. There is minimal change in the industrial source category and a slight decrease in tailpipe, tire, and brake wear due to the effect of new regulations on vehicle emission factors.

The total planning area peak 24-hour PM10 emission estimates for 2025 are 72% lower when compared to the 2014 emissions inventory; this is mostly due to the revision in the silt loading factor used in the resuspended road dust emissions calculation. The other source categories showed slight decreases in PM10 emission estimates due to residential wood stove device change outs and the effect of new regulations on vehicle emission factors. Details, including methodology and data for all years during the maintenance period from 2025 through 2035, are provided in Appendix B.

Table 3. Summary of Peak 24-hour PM10 Emission Estimates for 2014, 2025, and 2035

Emission Source	2014 Inventory (lb/day)		2025 Inventory (lb/day)		2035 Inventory (lb/day)	
	In-Town	Planning Area Total	In-Town	Planning Area Total	In-Town	Planning Area Total
Residential Wood Combustion	1,874	1,874	1,719	1,719	2,137	2,137
Road Dust and Cinders	5,560	7,729	599	622	696	722
Tailpipe, Tire & Brake Wear	20	25	11	16	11	15
Stationary Sources	9	18	7	15	7	15
Forest Management	--	--	--	295	--	295
Total	7,463	9,645	2,336	2,667	2,851	3,185

For 2014 through 2022, there was only one PM10 exceedance during this period that was not determined to be an exceptional event caused by wildfire smoke. That PM10 exceedance was caused by mixed contributions from wildfire smoke and regional dust: it was determined that local sources did not contribute to the exceedance. During the first 10-year maintenance period, the District maintained the 24-hour PM10 NAAQS. Excluding the change in road dust and cinders emissions due to the revision in the silt loading factor, the remaining estimated emissions have not shown significant changes. The PM10 Planning Area has not had any significant changes since 2014, the start of the last 10-year maintenance period, and no significant changes are projected to occur during the second maintenance period. There is limited private land available for additional development in the PM10 Planning Area and there is no new large-scale industry on the horizon. A majority of the land surrounding the town is U.S. Forest Service land. The economy continues to be heavily dependent on tourism. The forecast emission projections demonstrate that the area should continue maintenance through 2035 and beyond.

5. Maintenance Demonstration

A maintenance plan may show that the NAAQS will continue to be maintained through demonstration with a projected emissions inventory or by modeling to show that the future mix of sources and emissions rates will not cause a violation of the NAAQS. The Town of Mammoth Lakes PM10 Planning Area Second 10-year Maintenance Plan utilizes projected emissions inventory to show continuing future maintenance of the NAAQS. The projected emissions presented in this Plan indicate the adopted control measures for the PM10 Planning Area are sufficient to continue compliance with the NAAQS through the second 10-year maintenance period.

6. Control Measures

The existing control strategy for the Town of Mammoth Lakes PM10 Planning Area is composed of measures to ensure permanent and enforceable emissions reductions, including specific particulate emissions regulations, controls on stationary sources, and additional District rules and regulations to control sources of PM10. This strategy has not only led the area to attainment but will also ensure its continued maintenance of the standard as none of these control measures will be relaxed or rescinded under this Plan.

6.1. Particulate Emissions Regulations- District Rule 431

The 1990 Air Quality Management Plan was approved concurrently with the adoption of District Rule 431- Particulate Emissions. The purpose of District Rule 431 is to improve and maintain the level of air quality of the Town of Mammoth Lakes by controlling the emissions of particulate matter. Revisions to strengthen the adopted controls were also made in conjunction with adoption of the First 10-Year Maintenance Plan. The regulations and subsequent revisions have also been adopted by the Town of Mammoth Lakes in the Town Municipal Code Chapter 8.30, Particulate Emissions Regulations.

The controls for particulate matter emissions included in District Rule 431 that apply to the Town of Mammoth Lakes PM10 Planning Area include:

- Regulating the installation of wood stoves and other solid fuel-burning appliances by requiring installation of EPA certified devices and limiting the number of appliances per dwelling.
- Prohibiting installation of solid fuel appliances, except for pellet stoves, in new multi-unit developments.
- Prohibiting installation of all solid fuel appliances in new commercial or lodging developments.
- Requiring the replacement or removal of existing uncertified residential wood combustion appliances at the time of sale of a property.
- Implementing a mandatory curtailment (no-burn day) program for all wood-burning appliances, except pellet stoves.
- Requiring street sweeping with vacuum-type sweepers to clean up the cinders remaining on the roads after snow events.
- Limiting peak traffic volume for future developments to 179,708 vehicle miles traveled per day.

The controls have been successful in reducing particulate matter emissions in the Town to bring the area into attainment, and to subsequently maintain compliance with the NAAQS.

6.2. Controls on Stationary Sources

To prevent new stationary sources from causing air pollution problems in the future, any new facilities or major modifications in the PM10 Planning Area that may emit air pollution will be subject to the District's new source review rules (District Rules 209-A and 216). Facilities that qualify as major sources under the US EPA federal permitting guidelines will also be subject to federal Prevention of Significant Deterioration (PSD) permitting requirements. New minor sources or sources undergoing minor modifications must obtain District Permits to Operate, which include provisions to ensure the protection of air quality and compliance with the NAAQS.

6.3. Additional District Rules and Regulations to Control Sources of PM10

Sources other than those identified in District Rule 431 and permitted stationary sources that contribute PM10 are subject to additional District rules and regulations to control PM10 emissions. Certain key sources of PM10 such as forest management burning, conservation management practices, and fugitive dust emissions from unpaved roads and properties are subject to existing District Rules in this Plan (see Table 4).

Table 4. Existing District Rules and Regulations in this Plan to Control Sources of PM10

District Rule	Description
209-A	<u>Standards for Authorities to Construct</u> . Requires new sources with PM10 emissions greater than 250 pounds per day of total suspended particulates, or modifications of greater than 15 tons per year of PM10 to apply BACT to control PM emissions.
216	<u>New Source Review Requirements for Determining Impact on Air Quality</u> . Requires the Air Pollution Control Officer to evaluate air pollution impacts before issuing an Authority to Construct or Permit to Operate for a new facility.
400	<u>Ringelmann Chart</u> . Limits visible emissions from any source, except those exempted under Rule 405, to less than Ringelmann 1 or 20%
401	<u>Fugitive Dust</u> . Requires reasonable precautions to be taken to prevent visible particulate emissions from crossing the property boundary.
408	<u>Open Burning in Agricultural Operations or Disease or Pest Prevention</u> . Limits agricultural burning operations to designated burn days and requires a burn permit.
409	<u>Range Improvement Burning</u> . Limits range improvement burning to designated burn days and require a burn plan to be approved by the Air Pollution Control Officer.
410	<u>Forest Management Burning</u> . Limits forest management burning to designated burn days and requires a smoke management burn plan to be approved by the Air Pollution Control Officer.
431	<u>Particulate Emissions</u> . For designated high wood smoke areas, regulates the installation and replacement of wood stoves and other solid fuel-burning appliances and establishes thresholds for mandatory and voluntary burning curtailment. For high road dust areas requires the implementation of paved road dust reduction measures.
502	<u>Conservation Management Practices</u> . Requires conservation management plans to reduce fugitive dust emissions from agricultural operations greater than 10 acres.
Reg. XII	<u>Transportation Conformity</u> . Ensures that Federal funding and approval are given to those transportation activities that are consistent with air quality goals and do not worsen air quality or interfere with NAAQS compliance.
Reg. XIII	<u>General Conformity</u> . Requires that federal actions and federally funded projects conform to SIP rules and that they do not interfere with efforts to attain NAAQS. Federal actions that have the potential to emit more than 100 tons per year of PM10 in the Town of Mammoth Lakes PM10 Planning Area will be required to complete a conformity determination.

7. Contingency Plan

Section 175A of the Clean Air Act requires that maintenance plans include contingency provisions to assure that if the NAAQS cannot be maintained, additional measures will be promptly developed and implemented to maintain air quality. The contingency plan process in this Plan includes established triggers, schedules, time limits, and specific control measures to be implemented. Triggering a contingency plan does not automatically require a SIP revision, nor is the region automatically redesignated nonattainment. The District will have an appropriate timeframe to correct the violation with one or more adopted contingency measures. If additional exceedances continue to occur, additional contingency measures will be adopted and implemented.

7.1. Contingency Plan Trigger

In general, exceedances or violations of the NAAQS are acceptable triggers for contingency plan implementation. Mammoth Lakes frequently experiences exceedances of the PM10 NAAQS caused by wildfire smoke events, despite the implementation of reasonable controls. To ensure appropriate implementation of the contingency plan, the District has developed a process for determining when the trigger for implementation of the contingency plan has occurred. Under this process, implementation of the contingency plan will be required when the number of exceedances recorded at a monitor averaged over three consecutive years, is greater than 1.05. The process does allow for certain exceedances to be excluded from this calculation. This aspect of the process is intended to distinguish between exceedances that are not within the District's control, and therefore need not be considered in determining whether the contingency plan has been triggered, and those that are within the District's control, and therefore should be considered. The process would exclude exceedances from the contingency plan trigger calculation in conjunction with the process for Initial Notification of Potential Exceptional Event (Initial Notification) set forth in Title 40 of the Code of Federal Register 50.14(c)(2).

At the conclusion of each quarter, the District will have 90 days to review, prepare, and submit to CARB a list of exceedances that occurred during the previous quarter, including information regarding the cause of the exceedance and if appropriate, designating the exceedance(s) proposed as potential exceptional events, providing an initial notification form, flagging the data, and providing an initial event description for the Air Quality System database. The District will also include a copy of previously submitted Initial Notification data and an update on exceedances that occurred in the previous 12 quarters that describes the status of the CARB and US EPA reviews of those events. CARB will have 60 days to review, during which time they may request additional readily available information from the District. Subsequently, CARB will forward the information to US EPA for review. If no exceedances occurred in the quarter, the District will still notify CARB and US EPA within 90 days of the end of the quarter.

In addition to the Initial Notification data, for those exceedances the District believes should be excluded from the contingency plan trigger calculation, the District and/or CARB will provide additional information as an appendix summary table to the Initial Notification that may include additional details such as:

- specific details and information regarding the PM10 source(s) including location (ex. name and location of wildfire);
- description of surface and meteorological conditions including a detailed analysis of upwind wind speed and direction;
- PM10 and/or PM2.5 concentrations from non-regulatory monitors in the area;
- HYSPLIT back-trajectory analysis;
- satellite image or remote sensing analysis;
- news or media reports, fire agency reports, Air Resource Advisor reports;
- an evaluation of upwind source area (including further evaluation of dust complaints/NOVs or known contributing anthropogenic sources); and
- other event specific analyses needed to appropriately determine the cause of exceedance.

US EPA will review the quarterly reports submitted by CARB and the District. If the District is requesting exclusion of exceedances as exceptional events, EPA will notify the District as to whether the submitted documentation is sufficient to support exclusion from the contingency plan trigger calculation. If EPA determines the contingency plan is triggered, EPA will notify the District and the District will then begin implementation of contingency provisions as described in Section 7.2. If the US EPA determines the submitted documentation is insufficient to support exclusion from the contingency plan trigger calculation, those exceedances will be included in calculating the trigger for the contingency plan. If the District and/or CARB subsequently provide additional information to US EPA such that the criteria for exclusion from the contingency plan trigger calculation are satisfied, US EPA will notify the District that the contingency plan trigger will be adjusted. If the resulting value is less than 1.05, implementation of the contingency plan can be halted unless triggered in a subsequent quarter. If the US EPA concurs with the findings of the District for any exceedances identified as exceptional events, the US EPA will notify the District of their concurrence.

If the District determines the contingency trigger has been met, the District may move forward with the development and implementation of contingency provisions as described in Section 7.2 concurrent to the CARB and EPA review periods.

7.2. Contingency Provisions

The contingency provisions involve sources within the PM10 Planning Area. Exceedances found to be caused by emissions from local sources that are already subject to District regulations will be promptly addressed. If an exceedance cannot be addressed through existing District rules and regulations and is not covered by the US EPA Exceptional Events Rule, the District will address the issue by adopting and implementing additional control measures necessary to meet and maintain the PM10 NAAQS in the PM10 Planning Area. Corrective action will be taken within 18 months. Control measures could include expanding existing rules or utilizing measures from outside existing rules and regulations to achieve the necessary emissions reductions.

Depending on the cause of the violation these control measures may include the following:

- Reducing the no burn day threshold if residential wood smoke is found to be a significant contributor.
- Implementing measures to reduce the use of volcanic cinders or to improve street clean up procedures on roadways during the winter if road dust is found to be a significant contributor.
- Additional Revisions to District Rule 431- Particulate Emissions or other District Rules or Regulations to address the emission sources and strength controls.
- Implementation of voluntary or incentive-based control measures
- Adoption of Additional District rules or regulations, or revisions to existing regulations, to address emission sources and ensure adequate controls.

The District will adopt and implement any contingency provisions within 18 months.

8. Transportation Conformity

Transportation conformity is a way to ensure that Federal funding and approval are given to those transportation activities that are consistent with air quality goals. It ensures that these transportation activities do not worsen air quality or interfere with meeting the NAAQS. According to the Clean Air Act, transportation plans, programs, and projects cannot create new NAAQS violations, increase the frequency or severity of existing NAAQS violations, or delay attainment of the NAAQS. Transportation conformity requirements contained in District Regulation XII require that federal actions and federally funded transportation projects conform to SIP rules and that they do not interfere with efforts to attain federal air quality standards.

Transportation sources were found to contribute to the PM10 problem in Mammoth Lakes. As such, this section details the motor vehicle emissions budget, the portion of the total allowable emissions allocated to highway and transit vehicle use and emissions for this maintenance plan to ensure the area continues to meet the PM10 NAAQS. The motor vehicle emissions budget for PM10 for both the incorporated and unincorporated areas of the PM10 Planning Area is shown in Table 5. The motor vehicle emissions budget is based on estimated activity data from the Mammoth Lakes 2016 Mobility Element. Additionally, it accounts for emission reductions such as the Heavy-Duty Inspection and Maintenance Program and the Advanced Clean Cars II Program. Additional information and details on the motor vehicle emissions budget are provided in Appendix C. The motor vehicle emissions budget for this Plan is lower than the First 10-Year Maintenance Plan budget. The primary factor in this reduction is due to the lower PM10 emission estimate for this Plan as a result of updating the silt loading factor used to calculate re-entrained road dust and traction agents (details provided in Section 4.2 PM10 Emission Estimate Summary). There was no significant change in roadway classification, peak winter traffic estimations, and no change in the in-town/out-of-town boundaries.

Projects that may result in wintertime emissions in excess of the motor vehicle emissions budget shall incorporate measures to reduce emissions, otherwise a revision to control measures contained in the Plan may be needed to demonstrate, through additional controls or other methods, that the increase in emissions will not result in a violation of the NAAQS for PM10.

Table 5. Summary of PM10 Motor Vehicle Emissions Budget

Emissions	Motor Vehicle Emissions Budget Incorporated Areas (Tons PM10/Day)			Motor Vehicle Emissions Budget Unincorporated Areas (Tons PM10/Day)		
	2025	2030	2035	2025	2030	2035
Vehicular Exhaust and Tire and Brake Wear ^a	0.01	0.01	0.01	0	0	0
Re-Entrained Road Dust and Traction Agents ^b	0.3	0.32	0.35	0.01	0.01	0.01
Total PM10 Emissions	0.31	0.33	0.35	0.01	0.01	0.02
Total Motor Vehicle Emission Budget ^c	0.4	0.4	0.4	0.1	0.1	0.1

^a Includes running, idle, and start exhaust, as well as tire and brake wear. Also reflects the adjustment factor for HD I/M and ACCII

^b Unpaved, construction and fugitive dust are negligible due to winter weather conditions and snow cover

^c Motor Vehicle Emission Budgets calculated are rounded up to the nearest tenth of a ton per day.

Source: EMFAC2021 v1.02, Additional Details Provided in Appendix C.

9. General Conformity

General conformity is the federal regulatory process for preventing major federal actions or projects from interfering with air quality planning goals. Conformity provisions ensure that federal funding and approval are given only to those activities and projects that are consistent with state air quality implementation plans. Conformity with the SIP means that major federal actions will not cause new air quality violations, worsen existing violations, or delay NAAQS attainment. Current federal rules require that federal agencies use the emissions inventory from an approved SIP’s attainment or maintenance demonstration to support a conformity determination.

General conformity requirements contained in District Regulation XIII require that federal actions and federally funded projects conform to SIP rules and that they do not interfere with efforts to attain federal air quality standards. A conformity determination is currently required for any federally funded (non-transportation) project or action that takes place in moderate PM10 nonattainment and maintenance areas that have the potential to exceed a de minimis PM10 emissions threshold of 100 tons per year. In order to maintain the stringency of control requirements in the PM10 Planning Area under a maintenance plan, the District will retain the 100 tons of PM10 per year de minimis emissions threshold for triggering a conformity determination as currently required under District Regulation XIII.

10. Commitment to Continued Monitoring

The District is committed to continuing ambient air quality monitoring in the PM10 Planning Area in accordance with Title 40 CFR Parts 50, 53, and 58 in order to continue to verify the attainment status of the area. Specifically, the District commits to operating a federal reference method (FRM) and/or federal equivalent method (FEM) PM10 ambient air monitor in the PM10 Planning Area and to perform the

requisite monitoring for tracking compliance with the PM10 Federal Standard through 2035, the second 10-year maintenance plan period. The monitor will be maintained, operated, and sited in accordance with federal criteria set forth in Title 40 of the Code of Federal Regulations Parts 50, 53, and 58. Any changes to the monitor will be proposed under the District's annual network monitoring plan which is subject to US EPA approval. The monitoring is also necessary in order to implement the no burn day program under District Rule 431, and also allows the District to notify the public during air pollution episodes as provided for in District Rule 701- Air Pollution Episode Plan.

11. Tracking Progress and Verification of Continued Attainment

To track the progress of the maintenance plan over time, the District will continue ambient air quality monitoring as well as periodic evaluation of emission sources and assessing air quality trends. The emissions inventory for the PM10 Planning Area is currently maintained as part of a broader statewide inventory effort led by CARB, as required under various state and federal laws. The District commits to reviewing the emission sources on an annual basis. If the District finds that these inputs have changed significantly, the District will transmit updated information to CARB to update the existing inventory and will evaluate the revised inventory against the inventories presented in this Plan. Additionally, the District commits to assessing air quality trends and updating its calculated three-year design value for the PM10 Planning Area annually. The design value will also be included in the annual network monitoring plan submitted to the US EPA to confirm the area continues to meet the PM10 NAAQS. A three-year PM10 design value of 1.05 or fewer exceedances demonstrates continued compliance with the PM10 NAAQS.

12. Request to Approve Second 10-Year Town of Mammoth Lakes PM10 Maintenance Plan

Air quality trends continue to demonstrate that the adopted control measures for the Town of Mammoth Lakes are sufficient to continue compliance with the PM10 Federal Standard. The District will continue to maintain monitoring network integrity and, in cooperation with the Town, will continue to monitor PM10 in order to verify the attainment status of the area as required by the US EPA and continue implementation of the wood-burning appliance no-burn day program. To ensure that compliance with the PM10 Federal Standard is maintained in future years, the District has evaluated potential future activities that could affect PM10 levels in the planning area and evaluated the adequacy of existing rules, policies, and emission control requirements to control emissions from those sources and activities. District staff found that existing rules for particulate emissions, fugitive dust, new source review, and general conformity were adequate to control potential new sources within the PM10 Planning Area. In the event these controls do not prevent future NAAQS exceedances, the District will implement the contingency provisions as detailed in this Plan.

The District requests that the Second 10-year PM10 Maintenance Plan for the Town of Mammoth Lakes PM10 Planning Area be approved by the California Air Resources Board and submitted to the US Environmental Protection Agency for consideration and approval.

13. References

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56 FR 11101. Federal Register, Determination of Attainment for PM10. March 15, 1991.

80 FR 60049. Federal Register, Air Plan Approval; California; Mammoth Lakes; Redesignation; PM10 Maintenance Plan. October 5, 2015.

81 FR 68216. Federal Register. Treatment of Data Influence by Exceptional Events. US EPA. October 3, 2016.

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RULE 431. PARTICULATE EMISSIONS

Adopted: 12/07/90 Revised: 11/06/91, 12/04/06, 05/05/14

A. PURPOSE

The purpose of this rule is to improve and maintain the level of air quality of the Town of Mammoth Lakes (Town) and other communities in the Great Basin Unified Air Pollution Control District (District) so as to protect and enhance the health of its citizens by controlling the emissions of particulate matter.

B. DEFINITIONS

1. "EPA" shall mean the United States Environmental Protection Agency.
2. "EPA-Certified Appliance" means any wood or other solid fuel burning appliance utilized for space or water heating or cooking that meets the performance and emission standards as set forth in Part 60, Title 40, Subpart AAA Code of Federal Regulations, February 26, 1988. Phase I appliances must meet the emission requirements of no more than 5.5 grams per hour particulate matter emissions for catalytic and 8.5 grams per hour for non-catalytic appliances. Phase II requirements are 4.1 and 7.5 grams per hour respectively. Pellet fueled wood heaters shall be considered as meeting Phase II requirements. For existing appliances, Oregon Department of Environmental Quality (DEQ) certification shall be equivalent to EPA certification. All other solid fuel appliances, including fireplaces, shall be considered non-certified.
3. "High Road Dust Areas" means those communities where the Board of the Great Basin Unified Air Pollution Control District has determined that re-entrained dust from winter-time sand or cinders on paved roads contributes to monitored exceedances of the state or federal 24-hour PM 2.5 or PM 10 standards.
4. "HRDA agency" means the governmental or public agency having jurisdiction over a community or area designated as a High Road Dust Area.
5. "High Wood Smoke Areas" means those communities where the Board of the Great Basin Unified Air Pollution Control District has determined that residential wood combustion contributes to monitored exceedances of the state or federal 24-hour PM 2.5 or PM 10 standards.
6. "HWSA agency" means the governmental or public agency having jurisdiction over a community or area designated as a High Wood Smoke Area.
7. "Pellet Fueled Wood Heater" means any wood heater designed to heat the interior of a building that operates on pelletized wood and has an automatic feed.
8. "Permanently Inoperable" means modified in such a way that the appliance can no longer function as a solid fuel heater or easily be remodified to function as a solid fuel heater. Conversion to other fuels, such as gas, is permitted.
9. "Solid Fuel Burning Appliance, Heater, or Device" means any fireplace, wood heater, or coal stove or structure that burns wood, coal, or any other nongaseous

or nonliquid fuels, or any similar device burning any solid fuel used for aesthetic, water heating, or space heating purposes. Pellet stoves are not a part of or included herein.

C. STANDARDS FOR REGULATION OF SOLID FUEL APPLIANCES

1. After December 7, 1990 (the effective date of this ordinance), no solid fuel burning appliance shall be permitted to be installed within the Town of Mammoth Lakes unless said device is certified as meeting the emission requirements of the U.S. Environmental Protection Agency (EPA) for Phase II certification.
2. After January 1, 2007, no solid fuel burning appliance shall be permitted to be sold or installed within District boundaries unless said device is certified as meeting the emission requirements of the U.S. Environmental Protection Agency (EPA) for Phase II certification.
3. The restrictions of this rule shall apply to all solid fuel devices including unregulated fireplaces.
4. For the purposes of enforcing this rule, the Town shall keep a record of all certified appliances installed in Mammoth Lakes in accordance with this rule and of properties which have been determined to conform to the requirements of this rule.
5. For the purposes of enforcing this rule, after the Board of the Great Basin Unified Air Pollution Control District has determined that a community is a high wood smoke area, the HWSA agency shall keep a record of all certified appliances installed in their HWSA community in accordance with this rule and of properties which have been determined to conform to the requirements of this rule.

D. DENSITY LIMITATIONS – TOWN OF MAMMOTH LAKES and HIGH WOOD SMOKE AREAS

1. No more than one solid fuel appliance may be installed in any new dwelling or nonresidential property. Existing properties with one or more existing solid fuel appliances may not install additional solid fuel appliances. One pellet fueled wood heater per dwelling shall be excepted from the provisions of this paragraph.
2. Solid fuel appliances shall not be considered to be the primary form of heat in any new construction.
3. Within the Town of Mammoth Lakes, all new and replacement solid fuel burning appliances shall not be installed without first obtaining a building permit from the Town of Mammoth Lakes. All installations shall require an inspection and approval by the Building Division prior to operation.
4. Within all High Wood Smoke Areas, all new and replacement solid fuel burning appliances shall not be installed without first obtaining a building permit from the HWSA agency. All installations shall require an inspection and approval by the HWSA agency prior to operation.

5. Verification of compliance may be certified by an inspector of the Mammoth Lakes Building Division, by an inspection of the HWSA agency, or, within an HWSA other than the Town, by an individual certified by the Wood Heating Education and Research Foundation for the installation of solid fuel appliances, by individuals approved in writing by the District, or by individuals possessing equivalent certification. The inspector of record shall verify in writing that the appliance complies with the required emissions standards and shall file said certification with the HWSA agency. Inspectors independent of the HWSA agency, shall verify their qualifications with the or HWSA agency before appliance certification will be accepted by the HWSA agency.
6. Within the Town of Mammoth Lakes no solid fuel burning appliance shall be installed in any new commercial or lodging development or in any new multi-unit residential development; however, one pellet fueled wood heater per dwelling may be installed in a multi-unit residential development project.

E. REPLACEMENT OF NON-CERTIFIED APPLIANCES UPON SALE OF PROPERTY – TOWN OF MAMMOTH LAKES and HIGH WOOD SMOKE AREAS

1. Prior to the completion of the sale or transfer of a majority interest in any real property within the Town of Mammoth Lakes or in High Wood Smoke Areas, all existing non-certified solid fuel appliances shall be replaced, removed, or rendered permanently inoperable. If the buyer assumes responsibility, in writing on a form approved by the Town or HWSA agency respectively, for appliance replacement or removal, the deadline for such action shall be extended to 60 calendar days from the date of completion of the sale or transfer. The buyer shall contact the building division no later than 60 calendar days from the date of completion of sale to schedule an inspection. The Town Building Division, HWSA agency, or a qualified inspector as designated by the HWSA agency, shall inspect the appliance(s) in question to assure that they meet the requirements of this rule. Within five working days from the date of the inspection, the Town Building Division or HWSA agency, shall issue a written certification of compliance or non-compliance for the affected property. If the inspection reveals that the subject property does not comply with the requirements of this rule, all non-complying solid fuel appliances shall be replaced, removed, or rendered permanently inoperable. In this event re-inspection shall be required prior to certification of compliance.
2. If real property is to be sold which does not contain a solid fuel burning appliance, a form approved by the Town Building Division, District or HWSA agency, containing the notarized signatures of the seller, the buyer, and the listing real estate agent attesting to the absence of any solid fuel device, may be accepted in lieu of an inspection. A written exemption shall be issued by the Town Building Division or HWSA agency.
3. No solid fuel burning appliances removed under the provisions of this Section may be replaced except as provided by this rule.
4. This section shall not be applicable to National Forest permittees located west of Old Mammoth Rd. in sections 4 and 9 of Township 4 S., Range 27 E., MDBM, or National Forest permittees located above 8500 feet elevation above sea level.

F. Reserved

G. OPACITY LIMITS

No person shall cause or permit emissions from a solid fuel appliance to be readily visible, for a period or periods aggregating more than three minutes in any one hour period. Emissions created during a 15 minute start-up period are exempt from this regulation. Readily visible may be equated with an opacity limit of 20% or greater as designated by the shade number one on the Ringelmann Chart.

H. PERMITTED FUELS

Burning of any fuels or materials other than the following fuels within the Town of Mammoth Lakes shall be in violation of this ordinance:

1. Untreated wood
2. Uncolored paper
3. Manufactured logs, pellets, and similar manufactured fuels

I. MANDATORY CURTAILMENT – TOWN OF MAMMOTH LAKES and HIGH WOOD SMOKE AREAS

1. The Town of Mammoth Lakes shall appoint an Air Quality Manager. The duty of the Air Quality Manager shall be to determine when curtailment of solid fuel combustion in the Town of Mammoth Lakes is necessary, to notify the community that curtailment is required, and to make such other determinations as are necessary to carry out the objectives of this rule.
2. Communities designated as High Wood Smoke Areas shall appoint a member from their respective governing body to determine when curtailment of solid fuel combustion in the area is necessary, to notify the community that curtailment is required, and to make such other determinations as are necessary to carry out the objectives of this rule.
3. Determination that curtailment is required shall be made when PM-10 levels have reached 130 micrograms/m³ or when adverse meteorological conditions are predicted to persist. Should it be determined that 130 micrograms/m³ is not a low enough threshold to prevent the Town of Mammoth Lakes or High Wood Smoke Areas from violating the state or National Ambient Air Quality Standard for particulate matter, that threshold may be lowered by resolution of the Town Council of the Town of Mammoth Lakes or by the governing body of High Wood Smoke Areas.
4. Upon the determination that curtailment is required, the Town of Mammoth Lakes Air Quality Manager or the Designee of a HWSA agency, shall contact all radio stations and television stations in Mammoth Lakes or High Wood Smoke Areas and have them broadcast that it is required that there be no wood or other solid fuel burning. The Air Quality Manager or Designee of a HWSA agency shall also

record a notice on a telephone line dedicated to this purpose and post a notice in the Town Offices or other appropriate governmental office. Upon such notice, all wood and other solid fuel combustion shall cease.

5. All dwelling units being rented on a transient basis which contain a non-certified solid fuel burning appliance shall post, in a conspicuous location near said appliance, a notice indicating that no-burn days may be called and informing the tenants about sources of information on no-burn days.
6. All persons renting units with solid fuel burning appliances shall inform their tenants that solid fuel burning may be prohibited on certain days and that the person signing the rental agreement shall be responsible for assuring that the no-burn requirements are obeyed during the rental period identified on the rental agreement.
7. For residences where a solid fuel burning appliance is the sole means of heat, these curtailment regulations do not apply. For a residence to be considered as having solid fuel as its sole source of heat, the owner must apply to the Town of Mammoth Lakes or the HWSA agency for an exemption and the respective governing authority must inspect the residence and certify that, in fact, no other adequate source of heat is available to the structure. Adequate source shall mean that the alternate source of heat cannot produce sufficient heat for the residence without causing a hazard. A written exemption will then be granted. Where an adequate alternate source of heat is determined to have been removed from the structure in violation of building codes, a sole source exemption shall not be issued. Sole source exemptions shall not be granted for non-residential uses. The owner's sole source exemption shall expire one year from the date of initial issuance.
8. Households with very low income levels as defined by the Department of Housing and Urban Development may apply to the HWSA agency Designee for exemption from no-burn days.

J. VOLUNTARY CURTAILMENT – HIGH WOOD SMOKE AREAS

1. Communities designated as High Wood Smoke Areas shall appoint a member from their respective governing body to determine when voluntary curtailment of solid fuel combustion in the area is necessary, to notify the community that curtailment is recommended, and to make such other determinations as are necessary to carry out the objectives of this rule.
2. Determination that voluntary curtailment is recommended shall be made when PM-10 levels have reached 100 micrograms/m³ or when adverse meteorological conditions are predicted to persist. Should it be determined that 100 micrograms/m³ is not a low enough threshold to prevent the High Wood Smoke Areas from potentially violating the state or National Ambient Air Quality Standard for particulate matter, that threshold may be lowered by resolution of the governing body of High Wood Smoke Areas.
3. Upon the determination that curtailment is recommended, the Designee of a HWSA agency, shall contact all radio stations and television stations in High

Wood Smoke Areas and have them broadcast that it is recommended that there be no wood or other solid fuel burning. The Designee of a HWSA agency shall also record a notice on a telephone line dedicated to this purpose and post a notice in the appropriate governmental office.

4. All dwelling units being rented on a transient basis which contain a non-certified solid fuel burning appliance shall post, in a conspicuous location near said appliance, a notice indicating that recommended no-burn days may be called and informing the tenants about sources of information on no-burn days.
5. All persons renting units with solid fuel burning appliances shall inform their tenants that solid fuel burning may not be recommended on certain days and that the person signing the rental agreement shall be responsible for assuring that the no-burn requirements are considered during the rental period identified on the rental agreement.

K. POLLUTION REDUCTION EDUCATION PROGRAMS

The APCO (or Town designee for the Town of Mammoth Lakes) is hereby directed to undertake such public education programs as are reasonably calculated to reduce particulate air pollution within the District (or the Town of Mammoth Lakes, respectively) including particulate emissions from sources other than solid fuel burning devices. In addition to the notification measures listed in Section I.4, the public education programs shall include additional measures to inform the public of burning curtailment requirements.

L. PAVED ROAD DUST REDUCTION MEASURES

1. The Town of Mammoth Lakes and each city, town, county or state agency with primary responsibility for any existing paved road within a community that has been determined by the Board of the Great Basin Unified Air Pollution Control District (Board) to be a High Road Dust Area due to exceedances of State or federal ambient particulate matter standards caused by winter-time re-entrained road dust from paved roads shall take the following actions:
 - a. Undertake a vacuum street sweeping program to reduce particulate matter emissions resulting from excessive accumulations of winter-time cinders, sand and dirt from paved roads and to remove the material from the entire road surface, including travel lanes as soon as practicable.
 - b. Effective January 1, 2007 for the Town of Mammoth Lakes, or the date that the Board determines a community is a High Road Dust Area, all purchases of street sweeper equipment by the HRDA agency or their contractor(s) shall be only PM10-efficient street sweepers that are certified under Rule 1186 of the South Coast Air Quality Management District.
 - c. All PM10-efficient street sweepers shall be operated and maintained according to manufacturer specifications.

2. The Town of Mammoth Lakes (Town) shall, in its review of proposed development projects, incorporate such measures which reduce projected total vehicle miles traveled. Examples of such measures include, but are not limited to, circulation system improvements, mass transit facilities, private shuttles, and design and location of facilities to encourage pedestrian circulation. The goal of the Town's review shall be to limit projected peak vehicle miles traveled to 179,708 on any given day on the roadway segments evaluated in the Mammoth Lakes Vehicle Miles Traveled Analysis (LSC, August 2012).

M. FEES

1. A fee shall be charged for the inspection and permitting services of the Town of Mammoth Lakes. Said fee shall be established in the Town Master Fee Schedule.
2. A fee for inspections and permitting services may be imposed by the HWSA agencies for the purpose of implementing the solid fuel burning appliance requirements of this rule.

N. PENALTIES FOR VIOLATIONS IN THE TOWN OF MAMMOTH LAKES

1. It is illegal to violate any requirements of this rule. Any owner of any property which is in violation of the requirements of this rule shall be guilty of an infraction. Any person operating a solid fuel appliance in violation of this rule is guilty of an infraction. The third violation by the same person within a 12 month period shall constitute a misdemeanor. Prosecution of any violation of Subsection 1.6 may be against the property owner, the occupant, or both.
2. Violation of any portion of this rule may result in assessment of civil penalties against the property and against an individual person or persons in accordance with Chapter 1.12, "General Penalty" of the Municipal Code of the Town of Mammoth Lakes.
3. Each and every day a violation exists is a new and separate violation. Right of appeal, hearings, and collection of civil penalties shall be pursuant to the procedures set forth in Chapter 8.20, "Nuisances," of the Municipal Code of the Town of Mammoth Lakes.
4. Nothing in this section shall prevent the Town from pursuing criminal penalties or using any other means legally available to it in addressing violations of this rule.
5. Whenever necessary to make an inspection to enforce any of the provisions of this rule, or whenever the Air Quality Manager or his/her authorized representative has reasonable cause to believe that there exists in any building or upon any premises any condition which violates the provisions of this rule, the Air Quality Manager or authorized representative may enter such building or premises at all reasonable times to inspect the same or to perform any duty imposed upon the Air Quality Manager by this rule, provided that if such building or premises be occupied, he/she shall first present proper credentials and request entry; and if such building or premises be unoccupied, he/she shall first make a reasonable effort to locate the owner or other persons having charge or

control of the building or premises and request entry. If such entry is refused, or if the owner or person having charge or control of the building or premises cannot be contacted, the Air Quality Manager or authorized representative shall have recourse to every remedy provided by law to secure entry.

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MEMORANDUM

To: Ann Logan, Great Basin Unified Air Pollution Control District

From: Emily Weissinger and Julia Lester, Ramboll US Consulting, Inc.

Subject: Second 10-Year Maintenance Plan 24-hour PM₁₀ Emission Inventory Update for the Town of Mammoth Lakes, California

INTRODUCTION

Ramboll was requested by Great Basin Unified Air Pollution Control District (GBUAPCD) to assist in updating the peak 24-hour particulate matter smaller than ten microns in diameter (PM₁₀) emission inventory for the Second 10-year Maintenance Plan for the Town of Mammoth Lakes, California ("Town"). The Town is located on the eastern edge of the Sierra Nevada Mountains and includes the Mammoth Mountain ski area. While the population of the Town is small (approximately 7,000 people), a large number of skiers visit the area each winter.

This inventory was last updated for the Town's 2014-2016 Triennial Progress Report (Triennial Progress Report)¹ and included emission estimates for residential wood combustion, resuspended road dust and cinders, mobile source tailpipe, tire wear, and brake wear emissions, and point source emissions. These emissions were estimated for the peak winter period when visitor roadway travel and residential wood-burning are the greatest. Other notable PM₁₀ emission sources, such as travel on unpaved roads, construction activities, and windblown fugitive dust, would be expected to be de minimis in the peak winter period due to weather conditions and snow cover and thus were excluded from the inventory.

Ramboll has developed an updated PM₁₀ emission inventory for the Town covering the 10-year maintenance period (2025-2035). At the request of the California Resources Board (CARB), this inventory now considers emissions from forest management in addition to the emission sources included in the Triennial Progress Report. The methodology and data used to estimate emissions are discussed below.

¹ Available at: https://gbuapcd.org/Docs/District/AirQualityPlans/MammothLakes/2014-2017%20TOML%206.1_Progress%20Report.pdf. Accessed: May 2023.

EMISSION ESTIMATES

Residential Wood Combustion

Residential wood combustion emissions are comprised of PM₁₀ released from the use of wood-burning fireplaces, woodstoves, and pellet stoves. Emissions are dependent on the device types, device counts, and the amount of fuel used.

For this inventory update, the baseline numbers of fireplaces, woodstoves, and pellet stoves were based on the 2017 device counts in Table A1 of the Triennial Progress Report. These numbers were then updated for 2023 using data provided by the Town's Building Permits Department for the period of July 2017 through February 2023. Devices were categorized by device type as well as residence type (e.g., single-family home or multi-family home).

The following assumptions were used when categorizing the devices from the Town's building permit data:

- All newly permitted woodstove devices were assumed to be United States Environmental Protection Agency (USEPA) Phase II certified in accordance with the New Source Performance Standards (NSPS) for Residential Wood Heaters;
- When the device type was not specifically stated in the building permit, it was conservatively assumed that the device was a USEPA Phase II certified woodstove (rather than a pellet stove or gas/electric);
- All devices identified as gas-burning and electric were accounted for but excluded from the inventory as PM₁₀ emissions from those devices are expected to be de minimis or zero;
- All building permits involving wood-burning devices with "unit" as part of the location address were assumed to be multi-family residences. Multi-family residences were then proportioned between condominiums and mobile homes/apartments based on the distribution of devices in those categories in the Triennial Progress Report;
- Because the Town's building permit data for new residential development does not specify whether a heating device is installed or not, any newly permitted residential dwelling units were assumed to have one heating device each. The type of heating device was assumed based on the breakdown of new device types installed for existing development changeouts. For new single-family homes, the breakdown is 30% Woodstoves (USEPA), 30% Pellet, and 40% Gas/Electric. For new multi-family homes, the breakdown is 60% Pellet and 40% Gas/Electric.

Device counts for 2023 are provided in Table 1-1 and are broken down into the following categories:

- The "Woodstoves (USEPA certified)" category includes all USEPA Phase II certified wood-burning devices;
- The "Woodstoves (non-certified)" category includes all non-certified wood-burning inserts and stoves;
- The "Fireplace" category includes all non-certified wood-burning fireplaces;
- The "Pellet" category includes all pellet stoves and pellet stove inserts;

Fuel usage rates were based on the usage rates presented in the 2014 AQMP. These rates vary by residence type (i.e., condominiums, single-family, and mobile homes/apartments) and are provided in Table 1-2.

Emissions from residential wood combustion for existing devices were calculated using emission factors from California Air Resources Board (CARB) *Miscellaneous Process Methodology 7.1 for Residential Wood Combustion*.² Emissions in future years for Phase II certified woodstoves and pellet stoves were estimated using the high end permanent resident population annual average growth rate of 2.4% per year from Table VII-2 of Appendix E to the Town of Mammoth Lakes General Plan Mobility Element (2016 Mobility Element).³ Emissions from fireplace and non-certified woodstoves were conservatively assumed to remain constant. Residential wood combustion emission estimates are presented in Table 1-3.

Roadway Emissions

Roadway PM₁₀ emissions include resuspended road dust, tailpipe, tire wear, and brake wear emissions from vehicles traveling in the Mammoth Lakes Planning Area (MLPA). Road dust emission factors were calculated in terms of grams per mile (g/mile) and then multiplied by peak winter average daily vehicle miles traveled (VMT) to determine daily emissions. Tailpipe, tire wear, and brake wear emissions were estimated using CARB's latest mobile source emission factor model, EMFAC2021 (v1.0.2).⁴ Details are provided in the following sections.

Vehicle Miles Traveled

VMT was estimated for travel on roads within the Town of Mammoth Lakes (in-town) and travel on highway Route 203 and Route 395 (out-of-town). In-town VMT for baseline conditions (2016) was obtained from the Mammoth Mobility Element Transportation Impact Analysis by LSC Transportation Consultants, Inc.⁵ Out-of-Town VMT was estimated by evaluating the average daily traffic (ADT) data provided by Caltrans for winter months in January 2016 through March 2016 and November 2021 through March 2022 and using the applicable roadway segment lengths for Route 203 and Route 395 (see Table 2-1).⁶

In-town VMT in future years was estimated using a daily trip average annual growth rate of 1.51% per Table VII-3 of Appendix E to the 2016 Mobility Element. Out-of-town VMT in future years was estimated based on average annual VMT growth between 2016 and 2023 of 1.28%. The out-of-town growth rate is in line with the 2016 Mobility Element growth estimate for skier-based trips. Current and future year VMT estimates are shown in Table 2-2.

² CARB. 2015. CARB Miscellaneous Process Methodology 7.1 for Residential Wood Combustion. Available at: https://ww3.arb.ca.gov/ei/areasrc/fullpdf/full7-1_2011.pdf. Accessed: May 2023.

³ Town of Mammoth Lakes General Plan Mobility Element, Appendix E: Town Traffic Model. 2016. Available at: [https://www.townofmammothlakes.ca.gov/DocumentCenter/View/2093/Appendix-E-Town-Traffic-Model?bidId=.](https://www.townofmammothlakes.ca.gov/DocumentCenter/View/2093/Appendix-E-Town-Traffic-Model?bidId=) Accessed: May 2023.

⁴ Available at: <https://arb.ca.gov/emfac/>. Accessed: May 2023.

⁵ LSC Transportation Consultants, Inc. Mammoth Mobility Element Transportation Impact Analysis. Available at: https://www.townofmammothlakes.ca.gov/DocumentCenter/View/6087/Appendix-F_Traffic-Study_4_2016. Accessed: May 2023.

⁶ Average winter daily VMT in 2016 has been modified from the Triennial Progress Report to incorporate average daily traffic counts from Caltrans traffic station 308.

Resuspended Road Dust Emissions

The PM₁₀ emission estimate for resuspended road dust is based on CARB *Miscellaneous Process Methodology 7.9 for Entrained Road Travel, Paved Road Dust*.⁷ This methodology is based on USEPA AP-42, Chapter 13.2.1. The emission factor is calculated as:

$$\text{Emission Factor} \left(\frac{g}{VMT} \text{ or } \frac{lb}{VMT} \right) = k(sL)^{0.91} \times (W)^{1.02}$$

Where,

- k: particle size multiplier (g/VMT or lb/VMT) (defined in AP-42 as 1 g/VMT for PM₁₀)
- sL: roadway-specific silt loading (g/m²)
- W: average weight of vehicles traveling on the road (California statewide default = 2.4 tons)

The CARB default silt loadings were adjusted using the USEPA AP-42 winter baseline multiplier to account for contributions from anti-skid abrasives.⁸ The Town's municipal code requires a street sweeping program to reduce PM₁₀ emissions. A control factor of 34% was applied to the road dust emission factors to account for street sweeping, consistent with the 2014 AQMP. The PM₁₀ emission factor calculation is presented in Table 2-3.

Tailpipe, Tire Wear, and Brake Wear Emissions

PM₁₀ emissions from mobile source tailpipe, tire wear, and brake wear were estimated using CARB's latest mobile source emission factor model, EMFAC2021 (v1.0.2).⁹ The EMFAC2021 "Scenario Analysis" module was used to generate and process a template for Mono County winter emissions by year using total daily VMT for in-town and out-of-town travel. The emissions output was adjusted externally to account for CARB's Clean Truck Check – Heavy-Duty Inspection and Maintenance Program (HD I/M) and Advanced Clean Cars II (ACC-II) regulations which were adopted after EMFAC2021 was released. Adjustment factors, shown in Attachment A, were provided by CARB and were applied based on vehicle type (EIC [emission inventory code] summary category) and fuel type (EIC material name). Emissions are presented in Table 2-4.

Point Sources

GBUAPCD issues permits for stationary (point) sources within the MLPA. These emission sources include concrete batch plants, boilers, and diesel engines located at four in-town locations and six out-of-town locations. Emissions data for these facilities was provided by GBUAPCD staff for the most recent calendar year, shown in Table 3-1. Emissions for facilities in the previous inventory did not change significantly between 2017 and 2023. The current emission inventory now also includes the addition of one new out-of-town facility, ORNI 50, LLC, which began operating in June 2022; its emissions are also not expected to vary yearly. Therefore, future year emissions were estimated to be equivalent to 2023 emissions. Estimated emissions for 2026 through 2035 for these facilities are shown in Table 3-2.

⁷ CARB. 2021. CARB Miscellaneous Process Methodology 7.9 for Entrained Road Travel, Paved Road Dust. Available at: https://ww3.arb.ca.gov/ei/areasrc/fullpdf/2021_paved_roads_7_9.pdf. Accessed: May 2023.

⁸ USEPA. 2011. AP-42 Chapter 13.2.1. Paved Roads. Available at: https://www.epa.gov/sites/default/files/2020-10/documents/13.2.1_paved_roads.pdf. Accessed: May 2023.

⁹ Available at: <https://arb.ca.gov/emfac/>. Accessed: March 2023.

Forest Management

Particulate emissions from forest management are the result of prescribed burns implemented to maintain and/or improve forest health. Emissions from this source category were estimated by CARB using the United States Department of Agriculture First Order Fire Effects Model (FOFEM), version 6.7. Details on the methodology can be found in Attachment B. Estimated emissions for future calendar years, presented in Table 4-1, represent the average daily emissions from winter burn activity from 2013 through 2022.

SUMMARY

The 2026 through 2035 estimates of emissions by category for both in-town and in the MLPA as a whole are shown in Table 4-1. Total planning area peak 24-hour PM₁₀ emissions are estimated to increase approximately 17% during the 2nd 10-year maintenance period, while in-town peak emissions are estimated to increase by 20%.

The 2026 emissions estimates are also summarized below, along with the previous 2017 emissions inventory and 2014 AQMP estimates. Overall, total planning area peak 24-hour PM₁₀ emission estimates for 2026 are expected to decrease (~76%) when compared to the 2017 emissions inventory; this is mostly due to a revision to the silt loading factor used in the resuspended road dust emissions calculation. The in-town emission inventory is also expected to decrease (~69%) when compared to the 2017 emissions inventory due to the revised silt loading. A decrease is also shown in the tailpipe, tire and brake wear emissions category due to the effect of new regulations on vehicle emission factors. A slight increase (~5%) is shown for the residential wood combustion category due to the expected growth in permanent resident population. There is minimal change in the industrial source category.

Emission Source	2026 Inventory (lb/day)		2017 Inventory (lb/day)		2014 AQMP Inventory (lb/day)	
	In-Town	Planning Area Total	In-Town	Planning Area Total	In-Town	Planning Area Total
Residential Wood Combustion	1,756	1,756	1,677	1,677	1,874	1,874
Road Dust and Cinders	608	631	5,893	8,384	5,560	7,729
Tailpipe, Tire & Brake Wear	11	16	21	30	20	25
Industrial Sources	7	15	9	17	9	18
Forest Management	--	295	--	--	--	--
Total	2,383	2,714	7,601	10,108	7,463	9,645

Notes:

¹ The 2017 Inventory and 2014 AQMP Inventory values have been modified to include a correction to the VMT estimates in the previous analyses. The revised VMT incorporates average daily traffic counts from Caltrans traffic station 308.

TABLES

Table 1-1. Residential Wood-Burning Devices

Town of Mammoth Lakes

2023 Peak 24-hour PM₁₀ Inventory Update

Device Type	Number of Devices		
	2023 ¹		
	Condominium	Single-Family	Mobile Homes and Apartments
Fireplace	174	0	0
Woodstove (non-certified)	27	55	2
Woodstove (USEPA certified) ²	3,227	1,333	189
Pellet	910	276	49

Notes:

¹ Number of devices in 2023 were estimated by adjusting 2017 device counts, as specified in Table A1 of the Town of Mammoth Lakes 2014-2016 Triennial Progress Report, to account for device change out and installation permits from the Town of Mammoth Lakes Building Permits Department for the period from July 1, 2017 through February 24, 2023.

² USEPA certified indicates that the wood-burning device meets USEPA New Source Performance Standards for Residential Wood Heaters (Phase II).

Abbreviations:

AQMP - Air Quality Maintenance Plan

USEPA - United States Environmental Protection Agency

Table 1-2. Residential Wood Combustion Emission Factors

Town of Mammoth Lakes
 2023 Peak 24-hour PM₁₀ Inventory Update

Device Type	Emission Factor ¹ (g PM ₁₀ / kg fuel)	Condominium	Single-Family	Mobile Homes and Apartments
		Fuel Burned ² (kg/device/day)		
Fireplace	11.8	19	27	19
Woodstove (non-certified)	15.3	19	27	19
Woodstove (USEPA certified) ³	7.3	19	19	19
Pellet	1.5	9	11	14

Notes:

¹ Emission factors obtained from CARB Miscellaneous Process Methodology 7.1 for Residential Wood Combustion. Available at: https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-1_2011.pdf. Accessed: March 2023.

² Fuel burned was obtained from Table 5-3 and Table 5-4 of the Town of Mammoth Lakes 2014 AQMP. Cord density is assumed to be 800 kg/cord, consistent with the 2014 AQMP.

³ USEPA certified indicates that the wood-burning device meets USEPA New Source Performance Standards for Residential Wood Heaters (Phase II).

Abbreviations:

AQMP - Air Quality Maintenance Plan

CARB - California Air Resources Board

g - grams

kg - kilograms

lb - pounds

PM₁₀ - particulate matter smaller than 10 microns in diameter

USEPA - United States Environmental Protection Agency

Table 1-3. 10-Year Residential Wood Combustion Emissions

Town of Mammoth Lakes
2023 Peak 24-hour PM₁₀ Inventory Update

Device Type	Residence Type	Peak 24-Hour PM ₁₀ Emissions (pounds/day) ^{1,2,3,4,5}												
		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Fireplace	Condominium	86	86	86	86	86	86	86	86	86	86	86	86	86
	Single-Family	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mobile Homes and Apartments	0	0	0	0	0	0	0	0	0	0	0	0	0
	Subtotal	86	86	86	86	86	86	86	86	86	86	86	86	86
Woodstove (non-certified)	Condominium	17	17	17	17	17	17	17	17	17	17	17	17	17
	Single-Family	50	50	50	50	50	50	50	50	50	50	50	50	50
	Mobile Homes and Apartments	1	1	1	1	1	1	1	1	1	1	1	1	1
	Subtotal	69	69	69	69	69	69	69	69	69	69	69	69	69
Woodstove (USEPA certified)	Condominium	987	1,010	1,035	1,060	1,085	1,111	1,138	1,165	1,193	1,222	1,251	1,281	1,312
	Single-Family	408	417	427	438	448	459	470	481	493	505	517	529	542
	Mobile Homes and Apartments	58	59	61	62	64	65	67	68	70	72	73	75	77
	Subtotal	1,452	1,487	1,523	1,559	1,597	1,635	1,674	1,714	1,756	1,798	1,841	1,885	1,930
Pellet	Condominium	27	28	28	29	30	30	31	32	33	34	34	35	36
	Single-Family	10	10	11	11	11	11	12	12	12	12	13	13	13
	Mobile Homes and Apartments	2	2	2	2	2	3	3	3	3	3	3	3	3
	Subtotal	39	40	41	42	43	44	45	47	48	49	50	51	52
Total		1,646	1,682	1,719	1,756	1,795	1,834	1,874	1,916	1,958	2,001	2,045	2,091	2,137

Notes:

¹ Emission factors obtained from CARB Miscellaneous Process Methodology 7.1 for Residential Wood Combustion. Available at: https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-1_2011.pdf. Accessed: March 2023.

² Fuel burned was obtained from Table 5-3 and Table 5-4 of the Town of Mammoth Lakes 2014 AQMP. Cord density is assumed to be 800 kg/cord, consistent with the 2014 AQMP.

³ Number of devices in 2023 were estimated by adjusting 2017 device counts, as specified in Table A1 of the Town of Mammoth Lakes 2014-2016 Triennial Progress Report, to account for device change out and installation permits from the Town of Mammoth Lakes Building Permits Department for the period from July 1, 2017 through February 24, 2023.

⁴ Future year emissions for USEPA-certified woodstoves and pellet stoves are estimated based on the Town of Mammoth Lakes General Plan permanent resident population high end average annual growth rate of 2.4% per year. Fireplace and non-certified woodstove PM₁₀ emissions are conservatively assumed to remain constant.

⁵ USEPA certified indicates that the wood-burning device meets USEPA New Source Performance Standards for Residential Wood Heaters (Phase II).

Abbreviations:

AQMP - Air Quality Management Plan

CARB - California Air Resources Board

kg - kilograms

PM₁₀ - particulate matter smaller than 10 microns in diameter

USEPA - United States Environmental Protection Agency

Table 2-1. Out-of-Town Vehicle Miles Traveled

Town of Mammoth Lakes
2023 Peak 24-hour PM₁₀ Inventory Update

Road Segment Information ¹						
Route	203		395		395	
Station	921		907		308	
Leg	B		A		B	
Direction	Eastbound	Westbound	Northbound	Southbound	Northbound	Southbound
Segment Length (miles)	1.55	1.55	2.00	2.10	5.15	5.19
Average Daily Traffic ² (# vehicles/day)						
Jan-16	3,953	3,885	1,441	1,634	3,824	4,240
Feb-16	4,224	4,269	--	--	4,439	4,474
Mar-16	4,286	4,492	1,891	--	4,593	4,456
2016 Winter Average	4,155	4,216	1,666	1,634	4,286	4,390
2016 Average Winter Daily VMT (miles/day)	6,440	6,535	3,332	3,431	22,073	22,784
2016 Winter Daily VMT (miles/day)	12,975		6,763		44,857	
Nov-21	3,969	3,953	2,242	2,270	4,554	4,604
Dec-21	3,758	3,974	1,513	1,559	4,099	3,939
Jan-22	4,701	4,612	1,868	1,949	4,779	4,926
Feb-22	4,634	4,632	2,140	2,068	4,926	4,939
Mar-22	4,443	4,409	2,071	2,067	4,891	4,848
2021 - 2022 Winter Average	4,301	4,316	1,967	1,983	4,650	4,652
2021-2022 Average Winter Daily VMT (miles/day)	6,667	6,690	3,934	4,164	23,948	24,144
2021-2022 Route Average Winter Daily VMT (miles/day)	13,356		8,098		48,091	

Notes:

¹ Road segment length measured based on Google Earth Aerial Imagery.

² Data obtained from Caltrans Daily Detail Counts for All Vehicles.

Abbreviations:

'--' - no data

VMT - vehicle miles traveled

Table 2-2. Current and Future Year Vehicle Miles Traveled

Town of Mammoth Lakes
 2023 Peak 24-hour PM₁₀ Inventory Update

Emission Category	Vehicle Miles Traveled ^{1,2,3} (miles/day)													
	2016	2022	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
In-Town	152,844	167,225	172,313	174,915	177,557	180,238	182,959	185,722	188,526	191,373	194,263	197,196	200,174	203,196
Out-of-Town	64,595	69,546	71,499	72,412	73,337	74,274	75,223	76,184	77,157	78,142	79,140	80,151	81,175	82,212

Notes:

¹ 2016 In-Town VMT obtained from Mammoth Mobility Element Transportation Analysis by LSC Transportation Consultants, Inc.

² 2016 and 2022 Out-of-Town VMT data obtained from Caltrans Daily Detail Counts for All Vehicles.

³ 2024-2035 In-Town VMT estimated based on an overall annualized growth rate in trips of 1.51% per year. 2024-2035 Out-of-Town VMT estimated based on an assumed annualized growth rate in trips of 1.28% per year, as was measured between 2016 and 2023.

Abbreviations:

PM₁₀ - particulate matter smaller than 10 microns in diameter

VMT - vehicle miles traveled

Table 2-3. Resuspended Road Dust Emission Factors

Town of Mammoth Lakes
2023 Peak 24-hour PM₁₀ Inventory Update

Road Type	Particle Size Multiplier ¹ , k (g/VMT)	Baseline Silt Loading ¹ , sL (g/m ²)	Silt Loading Winter Baseline Multiplier ²	Average Vehicle Weight ¹ , W (tons)	Control Efficiency ³	PM ₁₀ Emission Factor ¹ (g/mile)
In-Town	1	0.32	3	2.4	34%	1.55
Out-of-Town	1	0.015	3	2.4	0%	0.15

Notes:

¹ PM₁₀ road dust emission factor is estimated using particle size multiplier, silt loading, average vehicle weight, and methodology from CARB Miscellaneous Process Methodology 7.9 Paved Road Dust. In-town road estimate conservatively uses the silt loading for "local" type roads and out-of-town road estimate uses the silt loading for "freeway" type roads. Available at: https://ww3.arb.ca.gov/ei/areasrc/fullpdf/2021_paved_roads_7_9.pdf. Accessed: May 2023.

² Winter baseline multiplier obtained from USEPA AP-42 Chapter 13.2.1 Paved Roads, Table 13.2.1-2 for Ubiquitous Silt Loading Default Values with Hot Spot Contributions from Anti-Skid Abrasives. Available at: https://www.epa.gov/sites/default/files/2020-10/documents/13.2.1_paved_roads.pdf. Accessed: May 2023.

³ Road dust emissions are reduced using vacuum street sweepers to remove volcanic cinders soon after the roads are dried. Control efficiency for in-town roads was obtained from the Town of Mammoth Lakes 2014 AQMP.

Abbreviations:

AQMP - Air Quality Management Plan
CARB - California Air Resources Board
g - grams
m² - square meter

PM₁₀ - particulate matter smaller than 10 microns in diameter
USEPA - United States Environmental Protection Agency
VMT - vehicle miles traveled

Table 2-4. 10-Year Roadway Emissions

Town of Mammoth Lakes
 2023 Peak 24-hour PM₁₀ Inventory Update

Emission Category	Peak 24-Hour PM ₁₀ Emissions (pounds/day)											
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Road Dust¹												
In-Town	590	599	608	617	626	636	646	655	665	675	685	696
Out-of-Town	23	23	23	24	24	24	25	25	25	26	26	26
Tailpipe, Tire Wear, and Brake Wear²												
In-Town	11.2	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.0	11.0	10.9	10.9
Out-of-Town	4.7	4.6	4.6	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4

Notes:

¹ Road dust emissions calculated using VMT in Table 2-2 and emission factors in Table 2-3.

² Tailpipe, Tire Wear, and Brake Wear emissions estimated using EMFAC2021 and adjustment factors shown in Appendix A.

Abbreviations:

PM₁₀ - particulate matter smaller than 10 microns in diameter

VMT - vehicle miles traveled

Table 3-1. 2023 Industrial (Point) Source Emissions

Town of Mammoth Lakes

2023 Peak 24-hour PM₁₀ Inventory Update

Facility Name	Location	Number of Source Type ¹			PM ₁₀ Emissions ¹	
		Concrete Batch Plant ²	Boiler	Diesel Engine	Peak Day (lb/day)	Annual (lb/year)
7/11 Materials	Out-of-Town	1	0	0	-- ²	586
California Department of Fish and Game - Hot Creek	Out-of-Town	0	0	1	0.09	3.6
Mammoth Hospital	Out-of-Town	0	7	2	7.54	2,488
Mammoth Mountain Ski Area	In-Town	0	3	26	7.19	236
Mammoth Pacific	Out-of-Town	0	0	4	0.21	9.6
Marzano & Sons	Out-of-Town	1	0	0	-- ²	3,241
Monache Condominium Owner's Association	In-Town	0	0	1	0.12	5.8
Verizon (Mammoth High School)	In-Town	0	0	1	0.08	4.2
Verizon California - Mammoth Lakes	In-Town	0	0	1	0.02	1.0
ORNI 50, LLC	Out-of-Town	0	0	2	0.11	5.3
In-Town Total					7.4	247.0
Mammoth Lakes Planning Area Total					15.4	6,580.5

Notes:

¹ Data obtained from Great Basin Unified Air Pollution Control District emission inventory for permitted facilities in Mammoth Lakes Planning Area.

² Daily emissions from the concrete batch plants are excluded, as these emissions occur outside of the peak period.

Abbreviations:

lb - pounds

PM₁₀ - particulate matter smaller than 10 microns in diameter

Table 3-2. 10-Year Industrial (Point) Source Emissions

Town of Mammoth Lakes
2023 Peak 24-hour PM₁₀ Inventory Update

Facility Name	Location	Peak 24-Hour PM ₁₀ Emissions ^{1,2,3} (pounds/day)											
		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
7/11 Materials	Out-of-Town	-- ⁴											
California Department of Fish and Game - Hot Creek	Out-of-Town	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Mammoth Hospital	Out-of-Town	7.54	7.54	7.54	7.54	7.54	7.54	7.54	7.54	7.54	7.54	7.54	7.54
Mammoth Mountain Ski Area	In-Town	7.19	7.19	7.19	7.19	7.19	7.19	7.19	7.19	7.19	7.19	7.19	7.19
Mammoth Pacific	Out-of-Town	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Marzano & Sons	Out-of-Town	-- ⁴											
Monache Condominium Owner's Association	In-Town	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Verizon (Mammoth High School)	In-Town	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Verizon California - Mammoth Lakes	In-Town	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
ORNI 50, LLC	Out-of-Town	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
In-Town		7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41
Mammoth Lakes Planning Area		15.35	15.35	15.35	15.35	15.35	15.35	15.35	15.35	15.35	15.35	15.35	15.35

Notes:

- ¹ There is no significant growth expected for the industrial sources in future years. Therefore, future year emissions are estimated to be equivalent to 2023 emissions.
- ² Calendar year 2023 emissions are shown in Table 3-1.
- ³ Daily emissions from the concrete batch plants are excluded, as these emissions occur outside of the peak period.

Abbreviations:

PM₁₀ - particulate matter smaller than 10 microns in diameter

Table 4-1. Peak 24-hour PM₁₀ Emissions Summary

Town of Mammoth Lakes
2023 Peak 24-hour PM₁₀ Inventory Update

Emissions Category	Peak 24-Hour PM ₁₀ Emissions (pounds/day)											
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
In-Town												
Residential Wood Combustion	1,682	1,719	1,756	1,795	1,834	1,874	1,916	1,958	2,001	2,045	2,091	2,137
Re-Suspended Road Dust & Cinders	590	599	608	617	626	636	646	655	665	675	685	696
Tailpipe, Tire & Brake Wear	11	11	11	11	11	11	11	11	11	11	11	11
Industrial Sources	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41
Forest Management ¹	--	--	--	--	--	--	--	--	--	--	--	--
Sub-total	2,291	2,336	2,383	2,430	2,479	2,529	2,580	2,632	2,685	2,739	2,795	2,851
Mammoth Lakes Planning Area												
Residential Wood Combustion	1,682	1,719	1,756	1,795	1,834	1,874	1,916	1,958	2,001	2,045	2,091	2,137
Re-Suspended Road Dust & Cinders	613	622	631	641	651	660	670	680	691	701	711	722
Tailpipe, Tire & Brake Wear	16	16	16	16	16	16	16	16	16	15	15	15
Industrial Sources	15.35	15.35	15.35	15.35	15.35	15.35	15.35	15.35	15.35	15.35	15.35	15.35
Forest Management ¹	295	295	295	295	295	295	295	295	295	295	295	295
Total	2,622	2,667	2,714	2,762	2,811	2,861	2,912	2,965	3,018	3,073	3,128	3,185

Emissions Category	Peak 24-Hour PM ₁₀ Emissions (tons/day)											
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
In-Town												
Residential Wood Combustion	0.84	0.86	0.88	0.90	0.92	0.94	0.96	0.98	1.00	1.02	1.05	1.07
Re-Suspended Road Dust & Cinders	0.30	0.30	0.30	0.31	0.31	0.32	0.32	0.33	0.33	0.34	0.34	0.35
Tailpipe, Tire & Brake Wear	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Industrial Sources	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forest Management ¹	--	--	--	--	--	--	--	--	--	--	--	--
Sub-total	1.15	1.17	1.19	1.22	1.24	1.26	1.29	1.32	1.34	1.37	1.40	1.43
Mammoth Lakes Planning Area												
Residential Wood Combustion	0.84	0.86	0.88	0.90	0.92	0.94	0.96	0.98	1.00	1.02	1.05	1.07
Re-Suspended Road Dust & Cinders	0.31	0.31	0.32	0.32	0.33	0.33	0.34	0.34	0.35	0.35	0.36	0.36
Tailpipe, Tire & Brake Wear	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Industrial Sources	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Forest Management ¹	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Total	1.31	1.33	1.36	1.38	1.41	1.43	1.46	1.48	1.51	1.54	1.56	1.59

Notes:

¹ Forest Management PM₁₀ emissions obtained from CARB. Differentiation between In-Town/Out-of-Town emissions was not available; therefore, in-town emissions are not presented in this table.

Abbreviations:

CARB - California Air Resources Board

PM₁₀ - particulate matter smaller than 10 microns in diameter

ATTACHMENT A
EMFAC2021 ADJUSTMENT FACTORS

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

Town of Mammoth Lakes

2023 Peak 24-hour PM10 Inventory Update

Calendar Year	EIC Summary Category Code	EIC Summary Category	EIC Material Name	PM ₁₀ Adjustment Factor
2023	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	1.000
2023	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	1.000
2023	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	1.000
2023	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000
2023	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2023	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	1.000
2023	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2023	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	1.000
2023	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000
2023	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2023	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	1.000
2023	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2023	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	1.000
2023	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000
2023	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2023	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	1.000
2023	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2023	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	1.000
2023	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000
2023	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2023	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2023	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2023	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2023	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2023	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2023	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2023	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2023	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2023	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2023	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.997
2023	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2023	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2023	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2023	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2023	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.969
2023	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2023	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2023	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2023	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2023	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2023	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2023	775	BUSES	BRAKE DUST	1.000
2023	775	BUSES	DIESEL (UNSPECIFIED)	1.000
2023	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2023	775	BUSES	NATURAL GAS	1.000
2023	775	BUSES	RUBBER TIRES	1.000
2023	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2023	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2023	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2023	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2024	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	1.000
2024	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	1.000
2024	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	1.000
2024	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000
2024	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2024	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	1.000
2024	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2024	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	1.000
2024	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

Town of Mammoth Lakes

2023 Peak 24-hour PM10 Inventory Update

2024	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2024	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	1.000
2024	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2024	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	1.000
2024	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000
2024	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2024	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	1.000
2024	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2024	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	1.000
2024	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000
2024	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2024	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2024	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2024	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2024	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2024	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2024	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2024	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2024	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2024	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2024	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.852
2024	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2024	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2024	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2024	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2024	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.793
2024	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2024	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2024	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2024	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2024	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2024	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2024	775	BUSES	BRAKE DUST	1.000
2024	775	BUSES	DIESEL (UNSPECIFIED)	0.799
2024	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2024	775	BUSES	NATURAL GAS	1.000
2024	775	BUSES	RUBBER TIRES	1.000
2024	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2024	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2024	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2024	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2025	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	1.000
2025	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	1.000
2025	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	1.000
2025	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000
2025	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2025	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	1.000
2025	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2025	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	1.000
2025	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000
2025	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2025	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	1.000
2025	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2025	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	1.000
2025	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000
2025	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2025	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	1.000
2025	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2025	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	1.000
2025	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.000
2025	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2025	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

Town of Mammoth Lakes

2023 Peak 24-hour PM10 Inventory Update

2025	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2025	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2025	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2025	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2025	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2025	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2025	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2025	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2025	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.691
2025	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2025	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2025	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2025	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2025	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.588
2025	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2025	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2025	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2025	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2025	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2025	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2025	775	BUSES	BRAKE DUST	1.000
2025	775	BUSES	DIESEL (UNSPECIFIED)	0.572
2025	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2025	775	BUSES	NATURAL GAS	1.000
2025	775	BUSES	RUBBER TIRES	1.000
2025	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2025	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2025	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2025	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2026	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.990
2026	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	1.000
2026	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.988
2026	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.990
2026	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2026	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.999
2026	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2026	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	1.000
2026	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.996
2026	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2026	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.999
2026	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2026	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.999
2026	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.996
2026	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2026	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.997
2026	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2026	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.997
2026	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.997
2026	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2026	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2026	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2026	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2026	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2026	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2026	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2026	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2026	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2026	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2026	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.666
2026	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2026	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2026	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

Town of Mammoth Lakes

2023 Peak 24-hour PM10 Inventory Update

2026	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2026	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.564
2026	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2026	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2026	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2026	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2026	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2026	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2026	775	BUSES	BRAKE DUST	1.000
2026	775	BUSES	DIESEL (UNSPECIFIED)	0.530
2026	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2026	775	BUSES	NATURAL GAS	1.000
2026	775	BUSES	RUBBER TIRES	1.000
2026	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2026	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2026	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2026	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2027	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.976
2027	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	1.000
2027	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.973
2027	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.978
2027	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2027	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.992
2027	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2027	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.996
2027	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.990
2027	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2027	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.990
2027	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2027	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.993
2027	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.991
2027	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2027	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.989
2027	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2027	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.992
2027	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.993
2027	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2027	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2027	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2027	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2027	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2027	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2027	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2027	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2027	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2027	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2027	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.667
2027	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2027	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2027	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2027	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2027	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.558
2027	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2027	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2027	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2027	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2027	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2027	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2027	775	BUSES	BRAKE DUST	1.000
2027	775	BUSES	DIESEL (UNSPECIFIED)	0.520
2027	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2027	775	BUSES	NATURAL GAS	1.000

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

Town of Mammoth Lakes

2023 Peak 24-hour PM10 Inventory Update

2027	775	BUSES	RUBBER TIRES	1.000
2027	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2027	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2027	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2027	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2028	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.961
2028	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	1.000
2028	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.959
2028	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.973
2028	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2028	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.975
2028	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2028	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.989
2028	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.984
2028	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2028	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.968
2028	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2028	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.981
2028	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.985
2028	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2028	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.979
2028	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2028	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.986
2028	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.988
2028	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2028	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2028	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2028	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2028	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2028	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2028	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2028	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2028	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2028	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2028	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.670
2028	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2028	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2028	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2028	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2028	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.542
2028	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2028	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2028	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2028	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2028	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2028	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2028	775	BUSES	BRAKE DUST	1.000
2028	775	BUSES	DIESEL (UNSPECIFIED)	0.514
2028	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2028	775	BUSES	NATURAL GAS	1.000
2028	775	BUSES	RUBBER TIRES	1.000
2028	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2028	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2028	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2028	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2029	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.938
2029	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	1.000
2029	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.938
2029	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.966
2029	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2029	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.957
2029	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

Town of Mammoth Lakes

2023 Peak 24-hour PM10 Inventory Update

2029	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.981
2029	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.966
2029	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2029	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.946
2029	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2029	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.969
2029	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.969
2029	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2029	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.969
2029	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2029	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.980
2029	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.975
2029	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2029	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2029	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2029	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2029	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2029	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2029	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2029	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2029	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2029	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2029	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.676
2029	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2029	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2029	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2029	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2029	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.538
2029	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2029	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2029	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2029	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2029	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2029	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2029	775	BUSES	BRAKE DUST	1.000
2029	775	BUSES	DIESEL (UNSPECIFIED)	0.511
2029	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2029	775	BUSES	NATURAL GAS	1.000
2029	775	BUSES	RUBBER TIRES	1.000
2029	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2029	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2029	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2029	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2030	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.909
2030	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	1.000
2030	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.910
2030	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.956
2030	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2030	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.938
2030	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2030	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.972
2030	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.947
2030	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2030	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.921
2030	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2030	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.953
2030	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.951
2030	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2030	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.953
2030	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2030	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.969
2030	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.960

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

Town of Mammoth Lakes

2023 Peak 24-hour PM10 Inventory Update

2030	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2030	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2030	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2030	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2030	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2030	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2030	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2030	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2030	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2030	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2030	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.682
2030	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2030	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2030	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2030	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2030	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.535
2030	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2030	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2030	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2030	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2030	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2030	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2030	775	BUSES	BRAKE DUST	1.000
2030	775	BUSES	DIESEL (UNSPECIFIED)	0.508
2030	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2030	775	BUSES	NATURAL GAS	1.000
2030	775	BUSES	RUBBER TIRES	1.000
2030	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2030	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2030	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2030	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2031	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.875
2031	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	1.000
2031	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.872
2031	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.944
2031	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2031	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.918
2031	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2031	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.959
2031	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.926
2031	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2031	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.895
2031	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2031	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.935
2031	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.931
2031	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2031	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.936
2031	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2031	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.956
2031	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.943
2031	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2031	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2031	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2031	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2031	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2031	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2031	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2031	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2031	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2031	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2031	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.689
2031	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

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2031	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2031	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2031	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2031	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.534
2031	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2031	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2031	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2031	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2031	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2031	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2031	775	BUSES	BRAKE DUST	1.000
2031	775	BUSES	DIESEL (UNSPECIFIED)	0.507
2031	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2031	775	BUSES	NATURAL GAS	1.000
2031	775	BUSES	RUBBER TIRES	1.000
2031	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2031	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2031	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2031	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2032	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.838
2032	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	1.000
2032	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.829
2032	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.931
2032	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2032	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.888
2032	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2032	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.940
2032	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.903
2032	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2032	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.863
2032	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2032	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.911
2032	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.910
2032	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2032	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.917
2032	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2032	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.942
2032	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.924
2032	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2032	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2032	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2032	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2032	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2032	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2032	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2032	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2032	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2032	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2032	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.695
2032	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2032	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2032	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2032	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2032	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.533
2032	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2032	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2032	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2032	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2032	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2032	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2032	775	BUSES	BRAKE DUST	1.000
2032	775	BUSES	DIESEL (UNSPECIFIED)	0.507

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

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2032	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2032	775	BUSES	NATURAL GAS	1.000
2032	775	BUSES	RUBBER TIRES	1.000
2032	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2032	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2032	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2032	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2033	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.802
2033	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	1.000
2033	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.781
2033	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.917
2033	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2033	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.851
2033	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2033	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.915
2033	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.883
2033	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2033	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.821
2033	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2033	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.878
2033	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.890
2033	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2033	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.896
2033	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2033	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.924
2033	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.906
2033	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2033	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2033	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2033	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2033	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2033	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2033	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2033	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2033	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2033	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2033	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.702
2033	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2033	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2033	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2033	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2033	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.533
2033	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2033	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2033	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2033	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2033	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2033	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2033	775	BUSES	BRAKE DUST	1.000
2033	775	BUSES	DIESEL (UNSPECIFIED)	0.508
2033	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2033	775	BUSES	NATURAL GAS	1.000
2033	775	BUSES	RUBBER TIRES	1.000
2033	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2033	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2033	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2033	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2034	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.768
2034	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	0.999
2034	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.730
2034	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.897
2034	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

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2034	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.811
2034	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2034	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.883
2034	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.864
2034	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2034	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.773
2034	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2034	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.838
2034	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.871
2034	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2034	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.871
2034	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2034	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.899
2034	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.061
2034	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2034	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2034	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2034	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2034	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2034	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2034	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2034	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2034	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2034	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2034	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.709
2034	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2034	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2034	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2034	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2034	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.533
2034	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2034	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2034	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2034	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2034	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2034	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2034	775	BUSES	BRAKE DUST	1.000
2034	775	BUSES	DIESEL (UNSPECIFIED)	0.510
2034	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2034	775	BUSES	NATURAL GAS	1.000
2034	775	BUSES	RUBBER TIRES	1.000
2034	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2034	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2034	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2034	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2035	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.734
2035	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	0.992
2035	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.674
2035	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.876
2035	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2035	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.771
2035	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2035	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.847
2035	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.846
2035	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2035	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.723
2035	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2035	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.790
2035	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.898
2035	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2035	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.843
2035	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

Town of Mammoth Lakes

2023 Peak 24-hour PM10 Inventory Update

2035	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.857
2035	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.737
2035	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2035	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2035	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2035	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2035	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2035	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2035	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2035	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2035	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2035	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2035	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.716
2035	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2035	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2035	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2035	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2035	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.533
2035	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2035	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2035	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2035	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2035	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2035	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2035	775	BUSES	BRAKE DUST	1.000
2035	775	BUSES	DIESEL (UNSPECIFIED)	0.513
2035	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2035	775	BUSES	NATURAL GAS	1.000
2035	775	BUSES	RUBBER TIRES	1.000
2035	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2035	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2035	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2035	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2036	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.703
2036	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	0.980
2036	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.617
2036	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.854
2036	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2036	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.731
2036	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2036	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.808
2036	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.830
2036	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2036	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.673
2036	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2036	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.739
2036	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.929
2036	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2036	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.816
2036	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2036	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.811
2036	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	2.503
2036	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2036	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2036	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2036	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2036	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2036	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2036	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2036	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2036	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2036	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

Town of Mammoth Lakes

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2036	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.722
2036	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2036	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2036	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2036	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2036	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.533
2036	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2036	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2036	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2036	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2036	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2036	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2036	775	BUSES	BRAKE DUST	1.000
2036	775	BUSES	DIESEL (UNSPECIFIED)	0.516
2036	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2036	775	BUSES	NATURAL GAS	1.000
2036	775	BUSES	RUBBER TIRES	1.000
2036	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2036	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2036	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2036	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2037	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.677
2037	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	0.965
2037	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.558
2037	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.833
2037	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2037	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.693
2037	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2037	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.767
2037	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.814
2037	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2037	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.626
2037	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2037	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.686
2037	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.959
2037	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2037	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.791
2037	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2037	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.762
2037	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	3.272
2037	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2037	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2037	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2037	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2037	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2037	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2037	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2037	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2037	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2037	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2037	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.728
2037	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2037	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2037	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2037	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2037	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.534
2037	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2037	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2037	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2037	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2037	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2037	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

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2037	775	BUSES	BRAKE DUST	1.000
2037	775	BUSES	DIESEL (UNSPECIFIED)	0.522
2037	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2037	775	BUSES	NATURAL GAS	1.000
2037	775	BUSES	RUBBER TIRES	1.000
2037	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2037	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2037	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2037	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2038	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.650
2038	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	0.945
2038	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.498
2038	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.811
2038	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2038	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.655
2038	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2038	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.722
2038	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.800
2038	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2038	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.581
2038	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2038	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.632
2038	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.989
2038	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2038	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.767
2038	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	1.000
2038	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.713
2038	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	4.043
2038	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2038	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2038	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2038	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2038	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2038	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2038	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2038	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2038	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2038	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2038	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.734
2038	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2038	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2038	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2038	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2038	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.535
2038	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2038	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2038	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2038	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2038	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2038	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2038	775	BUSES	BRAKE DUST	1.000
2038	775	BUSES	DIESEL (UNSPECIFIED)	0.529
2038	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2038	775	BUSES	NATURAL GAS	1.000
2038	775	BUSES	RUBBER TIRES	1.000
2038	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2038	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2038	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2038	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2039	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.625
2039	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	0.921
2039	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.439

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

Town of Mammoth Lakes

2023 Peak 24-hour PM10 Inventory Update

2039	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.790
2039	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2039	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.618
2039	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2039	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.672
2039	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.787
2039	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2039	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.537
2039	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2039	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.577
2039	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.020
2039	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000
2039	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.743
2039	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	0.985
2039	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.660
2039	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	4.817
2039	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2039	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2039	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2039	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2039	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2039	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2039	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2039	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2039	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2039	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2039	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.739
2039	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2039	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2039	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2039	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2039	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.536
2039	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2039	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2039	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2039	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2039	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2039	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2039	775	BUSES	BRAKE DUST	1.000
2039	775	BUSES	DIESEL (UNSPECIFIED)	0.535
2039	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2039	775	BUSES	NATURAL GAS	1.000
2039	775	BUSES	RUBBER TIRES	1.000
2039	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2039	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2039	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2039	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000
2040	710	LIGHT DUTY PASSENGER (LDA)	BRAKE DUST	0.603
2040	710	LIGHT DUTY PASSENGER (LDA)	DIESEL (UNSPECIFIED)	0.890
2040	710	LIGHT DUTY PASSENGER (LDA)	GASOLINE (UNSPECIFIED)	0.382
2040	710	LIGHT DUTY PASSENGER (LDA)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.770
2040	710	LIGHT DUTY PASSENGER (LDA)	RUBBER TIRES	1.000
2040	722	LIGHT DUTY TRUCKS - 1 (LDT1)	BRAKE DUST	0.584
2040	722	LIGHT DUTY TRUCKS - 1 (LDT1)	DIESEL (UNSPECIFIED)	1.000
2040	722	LIGHT DUTY TRUCKS - 1 (LDT1)	GASOLINE (UNSPECIFIED)	0.621
2040	722	LIGHT DUTY TRUCKS - 1 (LDT1)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	0.774
2040	722	LIGHT DUTY TRUCKS - 1 (LDT1)	RUBBER TIRES	1.000
2040	723	LIGHT DUTY TRUCKS - 2 (LDT2)	BRAKE DUST	0.496
2040	723	LIGHT DUTY TRUCKS - 2 (LDT2)	DIESEL (UNSPECIFIED)	1.000
2040	723	LIGHT DUTY TRUCKS - 2 (LDT2)	GASOLINE (UNSPECIFIED)	0.522
2040	723	LIGHT DUTY TRUCKS - 2 (LDT2)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	1.050
2040	723	LIGHT DUTY TRUCKS - 2 (LDT2)	RUBBER TIRES	1.000

Table A-1. CARB HD I/M and ACC-II Adjustment Factors

Town of Mammoth Lakes

2023 Peak 24-hour PM10 Inventory Update

2040	724	MEDIUM DUTY TRUCKS (MDV)	BRAKE DUST	0.721
2040	724	MEDIUM DUTY TRUCKS (MDV)	DIESEL (UNSPECIFIED)	0.957
2040	724	MEDIUM DUTY TRUCKS (MDV)	GASOLINE (UNSPECIFIED)	0.606
2040	724	MEDIUM DUTY TRUCKS (MDV)	PLUG-IN HYBRID ELECTRIC VEHICLE (PHEV)	5.594
2040	724	MEDIUM DUTY TRUCKS (MDV)	RUBBER TIRES	1.000
2040	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	BRAKE DUST	1.000
2040	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	DIESEL (UNSPECIFIED)	1.000
2040	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	GASOLINE (UNSPECIFIED)	1.000
2040	725	LIGHT HEAVY DUTY TRUCKS - 1 (LHDT1)	RUBBER TIRES	1.000
2040	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	BRAKE DUST	1.000
2040	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	DIESEL (UNSPECIFIED)	1.000
2040	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	GASOLINE (UNSPECIFIED)	1.000
2040	726	LIGHT HEAVY DUTY TRUCKS - 2 (LHDT2)	RUBBER TIRES	1.000
2040	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	BRAKE DUST	1.000
2040	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	DIESEL (UNSPECIFIED)	0.744
2040	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	GASOLINE (UNSPECIFIED)	1.000
2040	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	NATURAL GAS	1.000
2040	727	MEDIUM HEAVY DUTY TRUCKS (MHDT)	RUBBER TIRES	1.000
2040	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	BRAKE DUST	1.000
2040	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	DIESEL (UNSPECIFIED)	0.537
2040	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	GASOLINE (UNSPECIFIED)	1.000
2040	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	NATURAL GAS	1.000
2040	728	HEAVY HEAVY DUTY TRUCKS (HHDT)	RUBBER TIRES	1.000
2040	750	MOTORCYCLES (MCY)	BRAKE DUST	1.000
2040	750	MOTORCYCLES (MCY)	GASOLINE (UNSPECIFIED)	1.000
2040	750	MOTORCYCLES (MCY)	RUBBER TIRES	1.000
2040	775	BUSES	BRAKE DUST	1.000
2040	775	BUSES	DIESEL (UNSPECIFIED)	0.541
2040	775	BUSES	GASOLINE (UNSPECIFIED)	1.000
2040	775	BUSES	NATURAL GAS	1.000
2040	775	BUSES	RUBBER TIRES	1.000
2040	780	MOTOR HOMES (MH)	BRAKE DUST	1.000
2040	780	MOTOR HOMES (MH)	DIESEL (UNSPECIFIED)	1.000
2040	780	MOTOR HOMES (MH)	GASOLINE (UNSPECIFIED)	1.000
2040	780	MOTOR HOMES (MH)	RUBBER TIRES	1.000

**ATTACHMENT B
FOREST MANAGEMENT EMISSIONS METHODOLOGY**

To: Ann Logan / Great Basin Unified Air Pollution Control District

From: Klaus Scott / Martin Johnson / CARB

Date: 6 June 2023

Subject: **CARB Forest Management PM10 Emissions Estimate for the 2nd Mammoth Lakes
PM10 Maintenance Plan**

Ms. Logan,

The purpose of this memo is to document the assessment process CARB implemented in estimating the PM10 emissions for the Forest Management category in the Mammoth Lakes planning area based on the FOFEM 6.7 model run. The assessment also points out the differences between these results versus the application of the more general emission factor that GBUAPCD employed manually at the outset of this exercise. For the Mammoth Lakes PM10 maintenance plan, CARB staff calculated a ten-year average winter emission inventory based on the 10-year burn project period 2013-2022.

Summary

The PM10 emissions associated with biomass burning is a function of how much fuel is consumed and how efficiently it is consumed. This describes sources and methods used by CARB staff to estimate PM10 emissions from pile burn projects selected by staff of the Great Basin APCD and retrieved from the PFIRS database.

CARB methods rely on georeferenced burn activity data (location, area, timing) and vegetation fuels information (fuel categories, loadings, moistures) to build a batch input file that the First Order Fire Effects Model (FOFEM 6.7) can ingest (FOFEM 2023).

FOFEM results suggest fuel consumption and PM10 emissions that are greater than manual estimates.

Acreages and Fuels

The burn projects selected for analysis by Great Basin APCD and CARB staff represent a 2013-2022 period for only winter months January, February, March, November, and December.

To determine fuel loadings (tons/acre) for selected treated acreages/pile burn projects retrieved from PFIRS, georeferenced pile burn locations retrieved from PFIRS (information contained in file PFIRS_TML_Data_WinterSummary.xls) were overlaid in ArcGIS on to a vegetation fuels map (raster format) based on the Fuels Characterization Classification System (FCCS)(McKenzie et al. 2007, Ottmar 2007, Riccardi 2007, UCB 2019) available from LANDFIRE.GOV (FCCS 2023).

Pile burn locations were associated with three FCCS vegetation types: Red Fir Forest (FCCS 17), Ponderosa Pine-Jeffrey Pine Forest (FCCS 37), and Modified or Managed Xeric Understory 2 (FCCS 627).

Each FCCS vegetation type represents a profile (“fuel model”) of fuel loadings (tons/acre) corresponding to fuel categories: litter, duff, shrubs, herbaceous vegetation, tree branchwood, tree foliage, and six stem diameter classes for dead wood.

Pre-burn fuel loadings (summed across fuel components) for FCCS fuel models 17, 37, and 627 were approximately 73, 35, and 58 tons/acre, respectively.

Fuel Moisture

In FOFEM, dead woody fuels and duff are consumed in flaming and smoldering phases according to size class and moisture content. Geospatially explicit fuel moistures at the location and date of each pile burn were retrieved from the gridMET (Abatzoglu 2013, gridMET 2023) service available from Google Earth Engine (CE 2023). Fuel moisture values were used in building a FOFEM batch input file.

Running FOFEM

CARB staff ran the model with the pile burn option enabled. This setting prescribes the spatial arrangement of the fuel components into a pile that have been gathered from a treatment area.

FOFEM estimates the amount of fuel consumed in flaming versus smoldering phases for each fuel component and utilizes separate emission factors (EFs: g pollutant/kg fuel consumed) for flaming versus smoldering combustion, for a suite of pollutant species. Particle emissions are principally products of incomplete combustion associated with the smoldering phase. Fuels that burn almost exclusively in the smoldering phase are litter, duff, and large-diameter dead stems (downed branches, logs, stumps). These also tend to be the dominant combustible fuels in forests. In FOFEM, the EF for PM10 emissions in the smoldering phase (26.7 g/kg) is nearly 9 times greater than in the flaming phase (3.07 g/kg) (FOFEM User Guide 2020, also see CARB 2023).

FOFEM is developed, continuously updated with the latest science, and maintained by the federal Fire Sciences Laboratory in Missoula, Montana. It has been in continuous use by planners in state and federal land and fire management agencies. FOFEM is designed to also simulate flaming and smoldering consumption of live and dead fuels, forest crown fires and their emissions, under very dry conditions associated with wildfires. CARB uses FOFEM for estimating emissions from all wildfires and prescribed burns in all natural environments in the state.

FOFEM results

Modeled fuel consumption (flaming and smoldering combined) ranged from approximately 6 to 15 tons/acre (see sheet “Share” column BK in *GBUAPCD_PFIRS_piles_FOFEM_summaries_v2_MJ_rev_16May2023*). The manual estimates from

PFIRS (“tons_per_acre”) ranged from approximately 2 to 11 tons/acre (see sheet “PFIRS_TML”, column M in *GBUAPCD_PFIRS_piles_FOFEM_summaries_v2_MJ_rev_16May2023*).

FOFEM emission factors (EFs) for PM10 in the flaming and smoldering phases are 3.07 and 26.7 g PM10/kg fuel consumed, respectively (FOFEM6.7 User Guide). These factors translate to 6.14 and 53.4 lbs PM10/ton fuel consumed. The FOFEM PM10 EF for smoldering is approximately three times greater than the 19 lbs/ton fuel consumed factor used in the manual estimates. PM10 emissions are largely associated with combustion in the smoldering phase and dominate overall PM10 emissions (see sheet “Share”, columns AS and AT in *GBUAPCD_PFIRS_piles_FOFEM_summaries_v2_MJ_rev_16May2023*).

Sheet “Share” columns BZ through DT in *GBUAPCD_PFIRS_piles_FOFEM_summaries_v2_MJ_rev_16May2023* display FOFEM pre-burn fuel loads (tons), fuel consumption (tons), and emissions (lbs) **that have been integrated over burn project areas**. Note that area-integrated **pre-burn** fuel loads are based on “Acres_Requested” while area-integrated **consumption** and **emissions** are based on “Acres_Burned”.

Sheet “PFIRS_TML_Tables” in *GBUAPCD_PFIRS_piles_FOFEM_summaries_v2_MJ_rev_16May2023* reproduces sheet “Pivot Table (Sum Years)” from *PFIRS_TML_Data_WinterSummary.xlsx*. Cell range K3:P16 contains similar summary data from FOFEM results, **for burns that occurred in the months of January, February, March, November, or December**. Q3:R15 contains the FOFEM winter PM10 emissions as well as the 10-year average winter estimate for the period 2013-2022.

When summed over the selected years and projects, FOFEM estimated over twice the fuel consumption and four times more PM10 emissions, than the manual estimates.

“Acres_Burned” for project IDs 53 and 54 (Legal Location: T4 South R27 East 9, SMP: FY21 Lakes Basin Piles, Burn Units: FR3 and I-6) were reported as zero. No area-integrated consumption or emission estimates were developed for these two projects.

CARB’s assessment results in an estimated 10-year average PM10 emission inventory for the winter season with a value of **295 lb/day** and is cited in Table 3 of the plan.

References

Abatzoglu, J.T. (2013) Development of gridded surface meteorological data for ecological applications and modelling. *International Journal of Climatology* (33), 121-131. CARB (2023) California Wildfire Emission Estimates. <https://ww2.arb.ca.gov/wildfire-emissions>

CARB 2023. Index of Methodologies by Major Source Category. Section 7.16, Forest Management (March 2023) https://ww3.arb.ca.gov/ei/areasrc/forest_management_2023.pdf

CE 2023. Climate Engine: Cloud Computing of Climate and Remote Sensing Data. <https://climate-engine.appspot.com/climateEngine>

FOFEM 2023. First Order Fire Effects Model (FOFEM) <https://www.fs.usda.gov/ccrc/tools/fofem>

FCCS 2023. Fuel Characteristic Classification Fuelbeds (FCCS) <https://www.landfire.gov/fccs.php>

gridMET 2023. gridMET: A dataset of daily high-spatial resolution surface meteorological data covering the contiguous US from 1979 to yesterday. <https://www.climatologylab.org/gridmet.html>

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Ottmar, R.D., D.V. Sandberg, C.L. Riccardi, and S.J. Prichard (2007) An overview of the Fuel characteristic Classification System – Quantifying, classifying, and creating fuelbeds for resource planning. *Can. J. For. Res.-Rev. Can. Rech. For.*, 37(12), 2383-2393, doi:10.1139/x07077

Riccardi, C., S.J. Prichard, D.V. Sandberg, and R.D. Ottmar (2007) Quantifying physical characteristics of wildland fuels using the Fuel Characteristic Classification System. *Can. J. For. Res.* 37: 2413-2420. Doi:10.1139/X07-175.

UCB 2019. University of California, Berkeley (2019) Incorporating disturbance effects on fuels in the emissions estimation system. Final Report, CARB contract 15-AQP007.

Data References:

PFIRS_TML_Data_WinterSummary.xlsx

GBUAPCD_PFIRS_piles_FOFEM_summaries_v2_MJ_rev_16May2023

Appendix C

TRANSPORTATION CONFORMITY

INTRODUCTION

The California Air Resources Board (CARB) has prepared the motor vehicle emissions budget (MVEB)¹ for the second Mammoth Lakes PM10 10-year Maintenance Plan for the 2012 PM10 National Ambient Air Quality Standard (NAAQS). The MVEB is the maximum allowable emissions from motor vehicles within a nonattainment area and is used for determining whether transportation plans and projects conform to the applicable State Implementation Plan (SIP).

Transportation conformity is the federal regulatory procedure for linking and coordinating the transportation and air quality planning processes through the MVEB established in the SIP. Under section 176(c) of the Clean Air Act (Act), federal agencies may not approve or fund transportation plans and projects unless they are consistent with the regional SIP. In addition, conformity with the SIP requires that transportation activities do not (1) cause or contribute to new air quality violations, (2) increase the frequency or severity of any existing violation, or (3) delay timely attainment of NAAQS. Therefore, quantifying on-road motor vehicle emissions and comparing those emissions with a budget established in the SIP determine transportation conformity between air quality and transportation planning.

The MVEBs are set for each criteria pollutant or its precursors for each milestone year and the attainment year of the SIP. Subsequent transportation plans and programs produced by transportation planning agencies must demonstrate that the emissions from the proposed plan, program, or project do not exceed the MVEBs established in the applicable SIP. The MVEBs established in this SIP apply as a "ceiling" or limit on transportation emissions for the Town of Mammoth Lakes for the years in which they are defined and for all subsequent years until another year for which a different budget is specified, or until a SIP revision modifies the budget. For the Mammoth Lakes 2nd PM10 10-year Maintenance Plan, the interim and maintenance years of the SIP (also referred to as the plan analysis years) are 2025, 2030, and 2035.

¹ Federal transportation conformity regulations are found in 40 CFR Part 51, subpart T – Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. of the Federal Transit Laws. Part 93, subpart A of this chapter was revised by the EPA in the August 15, 1997 Federal Register.

METHODOLOGY

The MVEB for the Mammoth Lakes 2nd PM10 10-year Maintenance Plan is established based on guidance from the U.S. EPA on the motor vehicle emission categories and precursors that must be considered in transportation conformity determinations as found in the transportation conformity regulation and final rules (as described below). The MVEB must be clearly identified, precisely quantified, and consistent with applicable Act requirements. Further, it should be consistent with the Mammoth Lakes 2nd PM10 10-year Maintenance Plan's emission inventory and control measures.

The Great Basin Unified Air Pollution Control District determined that mobile source emissions of NO_x, unpaved road dust, and highway and transit construction dust are not significant for maintaining the standard and do not need to be included in the MVEB. Therefore, the Mammoth Lakes 2nd PM10 10-year Maintenance Plan establishes the MVEB only for primary emissions of PM10 from motor vehicle exhaust, tire and brake wear, and paved road dust. This section discusses budgets that have been set for winter average daily emissions in the analysis years 2025, 2030, and 2035. The MVEB presented below uses emission rates from California's motor vehicle emission model, EMFAC2021 (V.1.0.2)² with Town of Mammoth Lakes activity data (VMT and speed distributions). The activity data are estimated from their 2016 Mobility Element.³ Thus, they are consistent with the maintenance demonstration for the SIP.

On November 15, 2022, the U.S. EPA approved EMFAC2021 for use in SIPs and demonstrating transportation conformity.⁴ The EMFAC model estimates emissions from two combustion processes (running and start exhaust) and four evaporative processes (hot soak, running losses, diurnal, and resting losses). Further, the estimated emissions were adjusted for the Advanced Clean Trucks (ACT),⁵ Heavy-Duty Engine and Vehicle Omnibus Regulations, Heavy-Duty (HD) Warranty, Innovative Clean Transit (ICT), Heavy-Duty Diesel Inspection & Periodic Smoke Inspection Programs (HDVIP/PSIP), the Heavy-Duty Inspection and Maintenance (HD I/M) Program⁶, and the Advanced Clean Cars II (ACCII) Program.⁷

The MVEB for the Mammoth Lakes 2nd PM10 10-year Maintenance Plan was developed to be consistent with the on-road emissions inventory⁸ and maintenance demonstration using the following method:

² More information on data sources can be found in the EMFAC technical support documentation at:

<https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools-emfac-software-and>

³ [2016 Mammoth Lakes Mobility Element](https://ww2.arb.ca.gov/our-work/programs/2016-mammoth-lakes-mobility-element)

⁴ U.S. EPA approval of EMFAC2021 can be found at 87 FR 68483 <https://www.federalregister.gov/>

⁵ Advanced Clean Trucks, <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks>

⁶ Heavy-Duty Engine and Vehicle Omnibus Regulations, <https://ww2.arb.ca.gov/rulemaking/2020/hdomnibuslownox>

⁷ Advanced Clean Cars II, <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii>

⁸ More information about the on-road motor vehicle emission budgets can be found in Appendix B of the plan.

- 1) Used the EMFAC2021 model to produce the on-road motor vehicle emissions totals (average winter day) for PM10 using the 2016 Mobility Element, for both incorporated and unincorporated regions of Mammoth Lakes.
- 2) Added Paved Road Dust emissions calculated using the updated *CARB Miscellaneous Process Methodology 7.9 for Entrained Road Travel, Paved Road Dust*⁹ along with U.S. EPA AP-42 winter baseline multipliers for both incorporated and unincorporated regions of Mammoth lake¹⁰.
- 3) Rounded the totals for PM10 to the nearest tenth ton.

MOTOR VEHICLE EMISSIONS BUDGET

The MVEB in Table 1 was established according to the methodology outlined above and in consultation¹¹ with Ramboll US Consulting on behalf of the Town of Mammoth Lakes, Great Basin Unified Air Pollution Control District, U.S. EPA, Federal Highway Administration (FHWA), and Federal Transit Administration (FTA). The MVEB is consistent with the emission inventories and control measures in the Mammoth Lakes 2nd PM10 10-year Maintenance Plan. These budgets will be effective once U.S. EPA determines it is adequate.

Table 1 contains detailed MVEB for each milestone and attainment year for the Town of Mammoth Lakes. In addition, it provides emissions from the EMFAC2021 model and recently adopted regulations using off-model adjustments for PM10 emissions. The final MVEB is rounded upwards to the nearest tenth.

⁹ CARB Miscellaneous Process Methodology 7.9 for Entrained Road Travel, Paved Road Dust. Available at: https://ww3.arb.ca.gov/ei/areasrc/fullpdf/2021_paved_roads_7_9.pdf

¹⁰ <https://www3.epa.gov/ttnchie1/ap42/ch13/final/c13s0201.pdf>
More information about the on-road motor vehicle emission budgets can be found in Appendix B

Table 1. Summary MVEB for Mammoth Lakes 2nd PM10 10-year Maintenance Plan (Incorporated)

Mammoth Lake (Tons/Day)	2025	2030	2035
	PM10	PM10	PM10
Vehicular Exhaust (includes Tire and Brake Wear) ^a	0.01	0.01	0.01
Re-Entrained Road Dust and Traction Agents ^b	0.30	0.32	0.35
Total Emissions	0.31	0.33	0.35
Motor Vehicle Emission Budget^c	0.4	0.4	0.4

^a This reflects the adjustment factor for HD I/M

^b Unpaved, construction, and fugitive dust are negligible due to winter weather conditions and snow cover

^c Motor Vehicle Emission Budgets calculated are rounded up to the nearest tenth of a tpd. Values for EMFAC2021 v1.02 may not add up due to rounding.

Source: EMFAC2021 v1.02

Table 2. Summary MVEB for Mammoth Lakes 2nd PM10 10-year Maintenance Plan (Unincorporated)

Mammoth Lake (Tons/Day)	2025	2030	2035
	PM10	PM10	PM10
Vehicular Exhaust (includes Tire and Brake Wear) ^a	0.00	0.00	0.00
Re-Entrained Road Dust and Traction Agents ^b	0.01	0.01	0.01
Total Emissions	0.01	0.01	0.02
Motor Vehicle Emission Budget^c	0.1	0.1	0.1

^a This reflects the adjustment factor for HD I/M

^b Unpaved, construction, and fugitive dust are negligible due to winter weather conditions and snow cover

^c Motor Vehicle Emission Budgets calculated are rounded up to the nearest tenth of a tpd. Values for EMFAC2021 v1.02 may not add up due to rounding.

Source: EMFAC2021 v1.02