



GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT
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**Town of Mammoth Lakes Air Quality Management Plan
Triennial Progress Report 2017-2020**

November 2021

Summary

This document provides a progress report on air quality trends for the Town of Mammoth Lakes for particulate matter 10 microns or less in diameter (PM10). This triennial progress report is the second since the adoption of the 2014 Air Quality Maintenance Plan (2014 AQMP) for the Town of Mammoth Lakes and the associated redesignation of the Mammoth Lakes Planning Area as in attainment for the PM10 National Ambient Air Quality Standard (Federal Standard).

Air quality data continue to demonstrate that the adopted control measures for the Town of Mammoth Lakes are sufficient to maintain compliance with the PM10 Federal Standard. Excluding wildfire smoke events there have been no PM10 Federal Exceedances in the Town of Mammoth Lakes since the adoption of the 2014 AQMP. Although wildfire smoke events causing PM10 Federal Exceedances may be excluded from determining compliance with the air quality standards under the US Environmental Protection Agency (US EPA) Exceptional Event Rule, this does not provide relief to residents or visitors exposed to high concentrations of particulate matter due to wildfires smoke.

Area Description and Population

The Town of Mammoth Lakes is located in the southern portion of Mono County, California. Nestled on the eastern slopes of the Sierra Nevada mountains, the Town is at an elevation of 7,861 feet (2,396 m) above sea level. The Town was incorporated in 1984 and has grown from a permanent population of 4,785 in 1990 to 8,234 in 2019. Mammoth Mountain ski area is included in the Town boundaries and attracts 1.2 to 1.5 million skiers each winter. Major winter weekends see the population of the Town swell to around 35,000 people.

The Mammoth Lakes PM10 Planning Area, the area identified by the US EPA as the nonattainment area, covers approximately 68 square miles and encompasses almost all of the incorporated portion of the Town of Mammoth Lakes and a portion of unincorporated Mono County, including the Mammoth Yosemite Airport. With the exceptions of wildfire smoke events, the majority of particulate matter contributions originate from within the Town boundary.

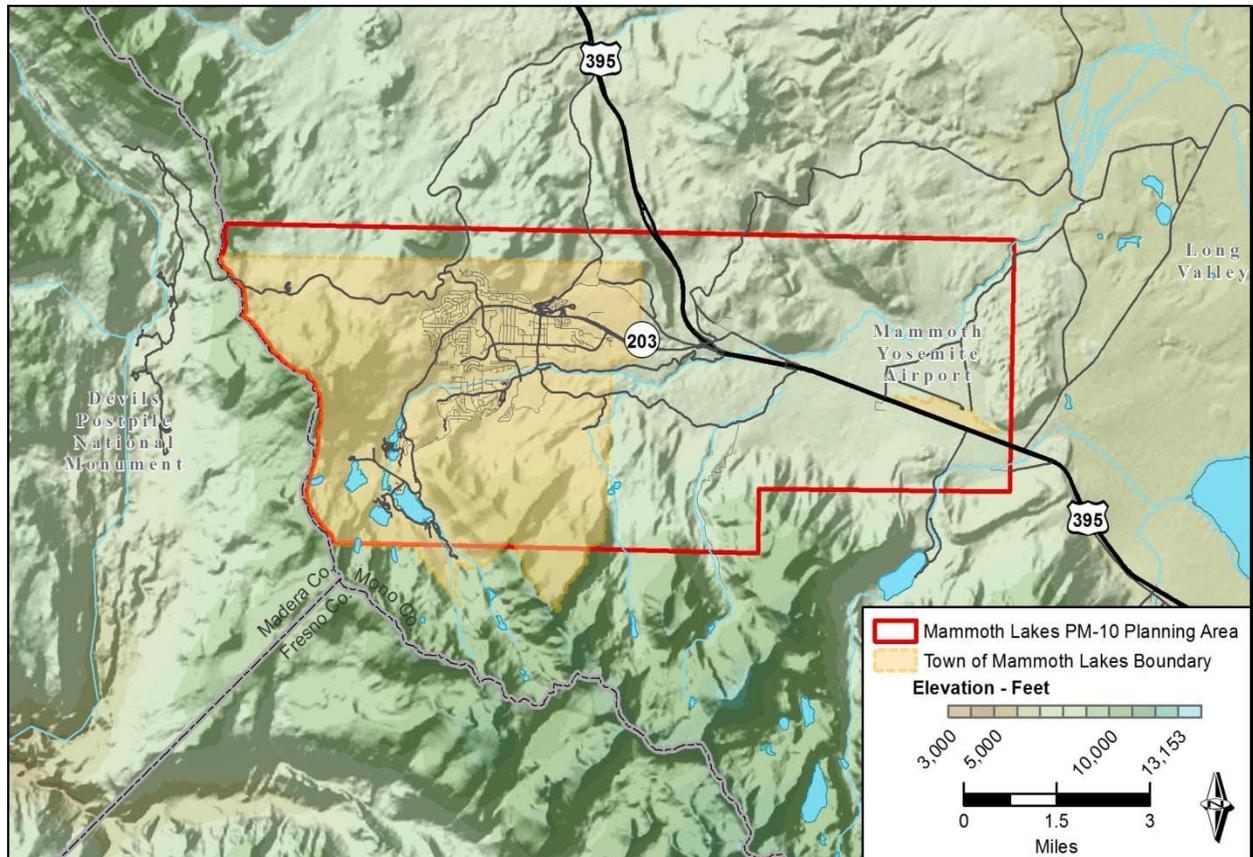


Figure 1. Mammoth Lakes Planning Area and Town of Mammoth Lakes Boundary

Background

The PM10 issue in the Town of Mammoth Lakes is primarily caused by smoke from wood stoves and fireplaces, as well as from traffic related dust and volcanic cinders used on roadways for traction control during the winter. High particulate matter levels are usually associated with calm winter days with little wind. In the past ten years, wildfires have with increasing frequency resulted in high levels of particulate matter during the summer and fall.

In November 1990, the Mammoth Lakes PM10 Planning Area was designated as a moderate nonattainment area for the 24-hour PM10 Federal Standard. Subsequently, the District and Town of Mammoth Lakes jointly adopted the 1990 Air Quality Management Plan (1990 AQMP) which included particulate emissions regulations adopted in District Rule 431 and Town of Mammoth Lakes Municipal Code Chapter 8.30 that: 1) regulated the installation of wood stoves and other solid fuel appliances, 2) instituted voluntary and mandatory no-burn days for fireplaces and woodstoves, 3) required street sweeping to clean up the cinders on the roads after snow events, and, 4) limited the peak traffic volume for future developments in the Town. After several amendments the US EPA approved the 1990 AQMP in June 1996.

Implementation of the measures included in the 1990 AQMP resulted in an immediate and significant decline in PM10 levels in the planning area. In 2013, following 23 years of air quality improvement, the Town and District staffs worked cooperatively to revise the 1990 AQMP and prepare a request for attainment redesignation. The update contained several regulatory amendments including: 1) prohibiting installation of solid fuel appliances, with the exception of pellet stoves, in new multi-unit developments, 2) increasing the allowable peak traffic volume for new developments in the Town from 106,600 to 179,708 vehicle miles travelled per day, 3) modification of the mandatory curtailment to include all wood burning appliances, except pellet stoves, as EPA certified stoves had previously been exempted under Town regulations, and, 4) revising penalties for violations of District Rule 431 consistent with the Town Municipal Code. The request for attainment redesignation incorporated in the revision demonstrated that: 1) the monitored area has achieved attainment of the PM10 Federal Standard, 2) the area has a fully approved State Implementation Plan, 3) the improvement in air quality is due to permanent and enforceable reductions in emissions, and, 4) the state has submitted, and U.S. EPA has approved, a maintenance plan for the area.

On November 6, 2013, the Town of Mammoth Lakes adopted and approved the proposed maintenance plan and revisions to Municipal Code Chapter 8.30. 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 2014 Air Quality Maintenance Plan (2014 AQMP) and redesignation request was adopted by the State of California Air Resources Board on September 18, 2014. The US EPA approved the 2014 AQMP and redesignated the Mammoth Lakes Planning Area a maintenance area in attainment for the PM10 Federal Standard on November 2, 2015.

As detailed in the 2014 AQMP, following attainment redesignation, the Town and the District have committed to the continuation of the air quality program in the Mammoth Lakes Planning Area through the continued implementation of control measures, the continuation of ambient air quality monitoring and in providing triennial updates on the progress of the plan to continue to maintain the Federal Standard and to improve compliance with the more stringent California Ambient Air Quality Standard for PM10 (State Standard).

Ambient PM10 Conditions and Trends

This section contains an update of ambient PM10 conditions and trends for the Town of Mammoth Lakes through the end of the 2020 calendar year. Excluding wildfire smoke events, the PM10 trend has shown a general stabilization in the past two decades in compliance with the PM10 Federal Standard.

From 1994 to 2012 there were zero (0) exceedances of the 24-hour PM10 Federal Standard. As shown in Table 1, since 2012 through the end of 2020 there have been twelve (12) exceedances of the Federal PM10 Standard which are all attributed to wildfire smoke events. Figure 2 shows the air

quality trends since the last progress report including impacts from wildfire smoke events. After exclusion of these wildfire smoke events under the US EPA’s Exceptional Events Rule there have been zero (0) exceedances of the Federal PM10 Standard from 1994 to 2020. Exceptional events are defined by US EPA as unusual or naturally occurring events that affect air quality but are not reasonably controllable. Although violations recognized as exceptional events by US EPA are excluded from determining compliance with air quality standards, that does not provide relief to residents and visitors exposed to high concentrations of particulate matter due to wildfires. Figure 3 shows the increasing frequency and magnitude of wildfire smoke events. The 2014 AQMP does not address or contain control or contingency measures related to wildfire impacts. The 2014 AQMP mitigation measures are specifically for reductions in impacts from winter wood smoke and road dust and cinders. However, to help address wildfire impacts to public health in the Town of Mammoth Lakes and throughout the District, an Emergency Air Monitoring Program was established by the District in 2015 to ensure air quality data is provided to communities during wildfire smoke events. Health advisories are issued during wildfire events under District Rule 701, Air Episode Plan.

Although the PM10 Federal Standard continues to be met with the exclusion of Exceptional Events, the more stringent State Standard for PM10, set at 50 µg/m³ for 24 hours, is still being violated as shown in Table 1. The number of monitored State Standard violations was as high as 88 exceedance days in 1990, the year the first AQMP was adopted. Violations of the State Standard have declined since then. Table 1 shows the number of state exceedances 2010-2020. Excluding violations of the state standard caused by wildfire smoke events, the number of State PM10 exceedances is generally decreasing however exceedances of the State Standard are still occurring during winter months.

Year	Number of Federal Exceedances (Daily PM10 > 150 µg/m ³)		Number of State Exceedances (Daily PM10 > 50 µg/m ³)	
	All Data	Excluding Exceptional Events*	All Data	Excluding Wildfire Smoke Events
2010	0	0	31	29
2011	0	0	28	27
2012	0	0	4	4
2013	2	0	32	20
2014	0	0	3	0
2015	0	0	10	3
2016	0	0	14	13
2017	0	0	20	17
2018	3	0	16	6
2019	0	0	6	6
2020	7	0	12	1

* Data where GBUAPCD has requested exclusion as provided for in the US EPA Exceptional Event Rule

Figure 2. Mammoth Lakes Daily Average PM10 for 2017-2020 including wildfire smoke Exceptional Events requested for exclusion

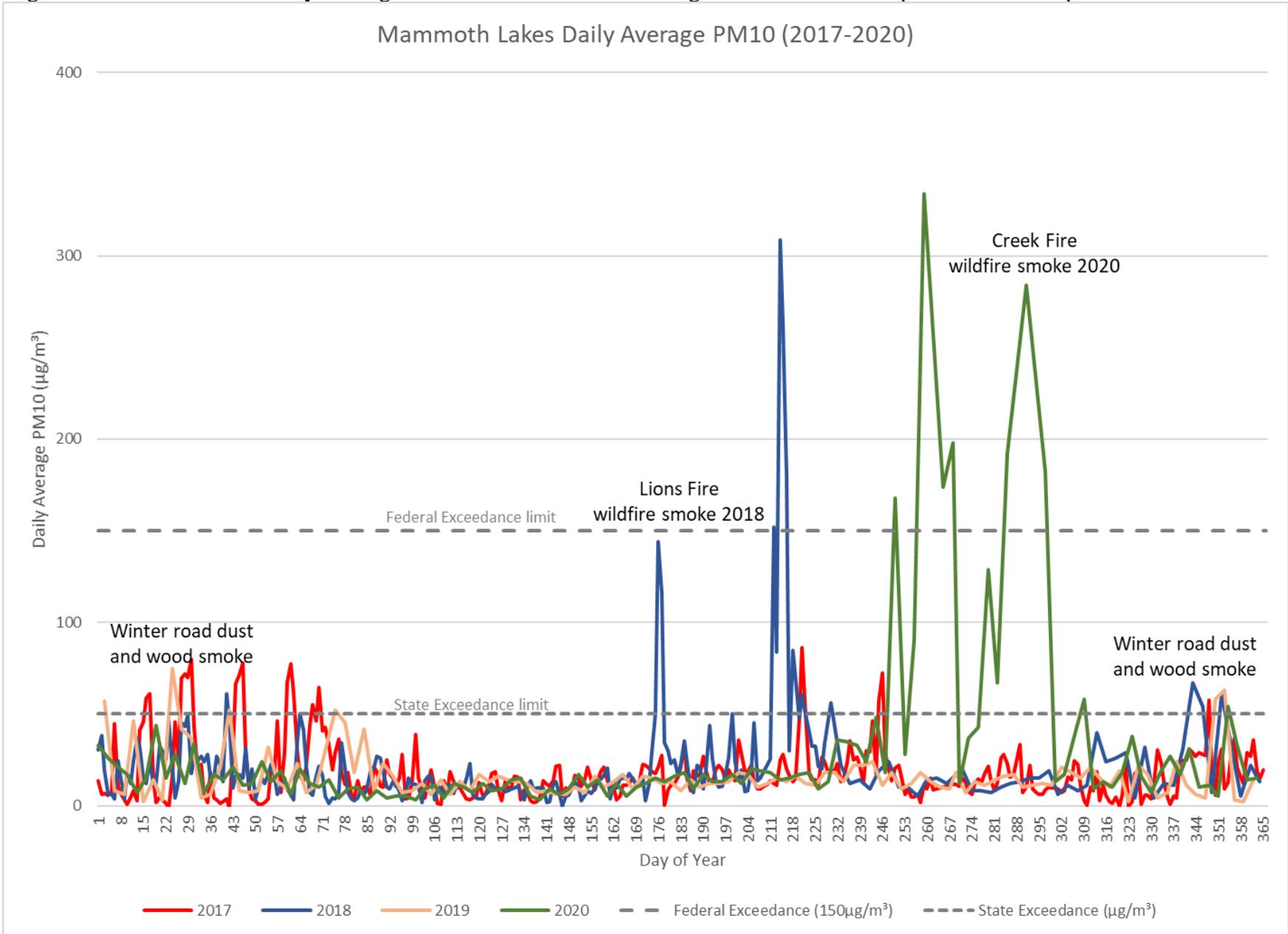
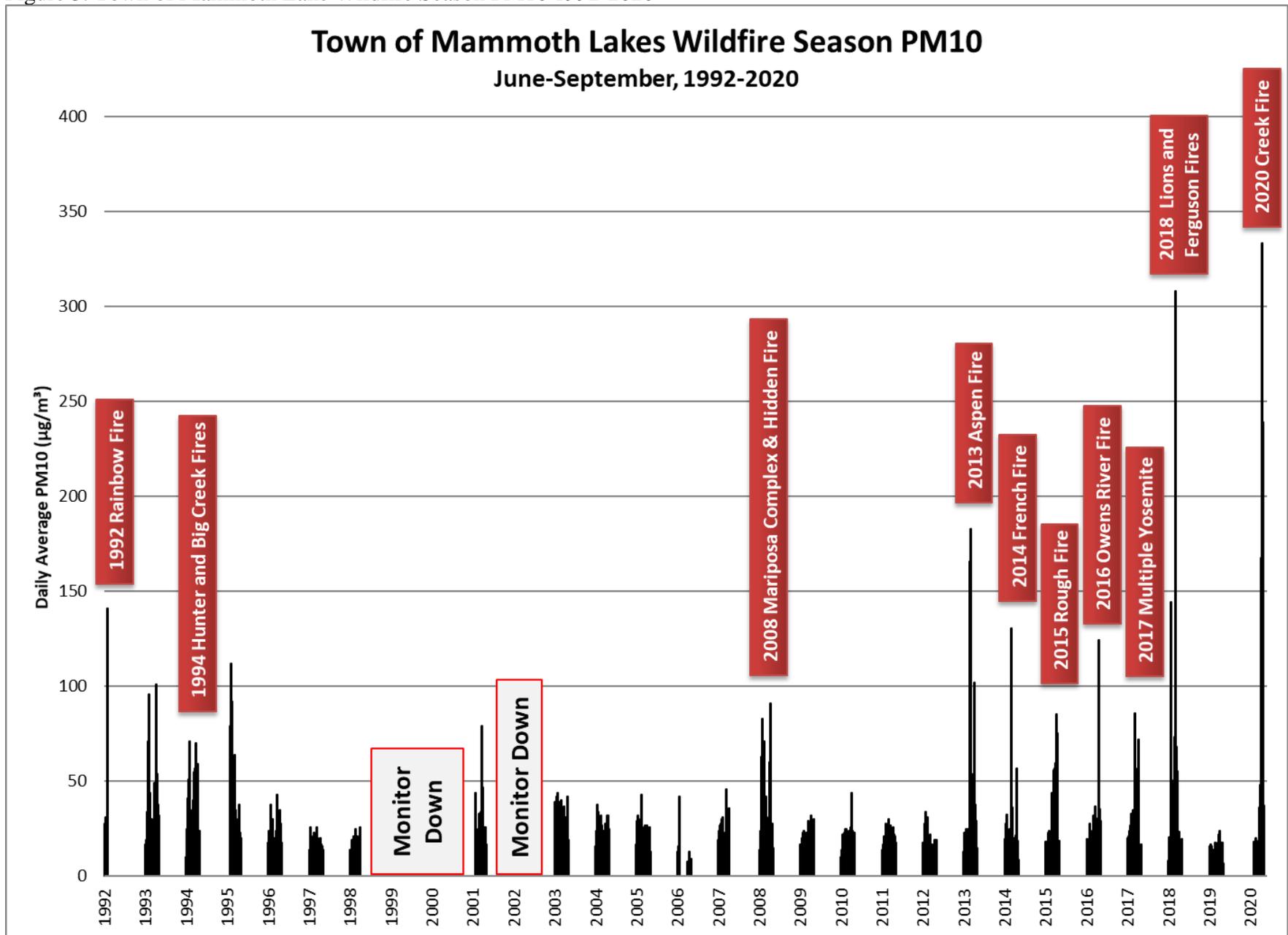


Figure 3. Town of Mammoth Lake Wildfire Season PM10 1992-2020



Emissions Sources

Woodburning and resuspended road dust comprise almost all the PM10 emissions during the winter. Motor vehicle exhaust, tire wear and industrial sources do not contribute significantly to the total estimated emissions. Previous analysis had demonstrated a decrease in residential wood combustion emissions from 2012 to 2017 that was reflective of device change-outs to more efficient devices and cleaner fuel sources. Since 2017, beyond continue device change-outs, no significant changes have occurred regarding PM10 emissions estimates for residential wood combustion, resuspended road dust, cinders, mobile source tailpipe emissions and point sources. As there have been no PM10 Federal Exceedances, excluding exceptional events, since 2014 and emissions estimates have not changed, no updated emissions inventory was prepared for this triennial progress report.

Conclusion

Air quality trends continue to demonstrate that the adopted control measures for the Town of Mammoth Lakes, including the 2014 Air Quality Maintenance Plan, enforceable through District Rule 431-Particulate Emissions and the Town of Mammoth Lakes Municipal Code Chapter 8.30, are sufficient to maintain compliance with the PM10 Federal Standard. Although wildfire smoke events causing PM10 Federal Exceedances may be excluded from determining compliance with the air quality standards under the US EPA Exceptional Event Rule, this does not provide relief to residents or visitors exposed to high concentrations of particulate matter due to wildfires smoke.

The District will continue to maintain monitoring network integrity and, with the Town of Mammoth Lakes, will continue to monitor PM10 in order to: 1) verify the attainment status of the area as required by the US EPA and, 2) to implement the no-burn day program, which relies on PM10 monitoring. Per the procedures in the 2014 AQMP, if a monitored violation of the PM10 Federal Standard occurs in the Town of Mammoth Lakes or the surrounding nonattainment area, the Town and the District will investigate the cause of the violation. If the event is not an exceptional event, within 18 months of the violation, the Town and District will adopt additional control measures needed to meet the federal PM10 standard.