



Town of Truckee

2009 Annual Report Particulate Matter Air Quality

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Preface

Within two years of the adoption of this plan and every year thereafter, the Planning Division will submit to the Town Council a report that analyzes air quality monitoring data for particulate matter including emission levels and concentrations and compliance with National and State ambient air quality standards. The Town Council will review the report to determine the success of the plan's control strategies in achieving the attainment goal of the plan, and if necessary take the appropriate steps to ensure consistency with the plan's goal and objectives.

For a plan to be effective, its strategies must be implemented and achieve their purposes as planned. It is critical to gauge the effectiveness of the control strategies to ensure the goal and objectives of the plan are being met. The Town must continue to monitor particulate matter air quality and associate any changes to particulate matter emission levels and concentrations to the control strategies and to factors that are beyond the Town's control. If emissions and concentrations increase, remain as they are, or do not decrease to the levels anticipated, this may signal that the control strategies are not succeeding and a change in the Town's efforts may be needed. This objective provides the mechanism for the Town Council to review the effectiveness of the control strategies on an annual basis and determine if they are succeeding. It is presumed that if the control strategies are not succeeding that the Town Council will take appropriate action based on the findings of the report.

Objective 9, Truckee Particulate Matter Air Quality Management Plan

2009 Annual Report for Particulate Matter Air Quality

INTRODUCTION

This report is the eighth annual report on particulate matter air quality in the Truckee air basin. It analyzes the quality of our air for particulate matter pollution in 2009, identifies compliance with National and State air quality standards, and summarizes the status of our monitoring network and the implementation of control strategies. This report also provides a snapshot of our air quality upon the removal of most non-certified woodstoves and fireplace inserts in the Town of Truckee as we contemplate our next steps in addressing particulate matter pollution.

PARTICULATE MATTER MONITORS AND AIR QUALITY

Substantial changes have been made to our particulate matter monitoring network. The Northern Sierra Air Quality Management District currently has only one monitor sampling particulate matter pollution in the Truckee air basin. This is a MetaOne Beta Attenuation Monitor (BAM) located at the Downtown fire station which samples PM_{2.5} air quality for a 24-hour period on a continuous basis. There are no monitors sampling PM₁₀ air quality in Truckee. All PM 10 monitors in the Truckee air basin were removed or converted to PM_{2.5} monitors in January 2007. Consequently, our monitoring of PM_{2.5}, or fine particulate matter, has improved substantially over the last few years, but we currently do not have the ability to monitor or sample coarse particulate matter between 2.5 and 10 microns in size.

Table 1 shows the readings of the BAM PM_{2.5} for PM_{2.5} air quality in the Truckee region in 2008:

Table 1
PM_{2.5} Air Quality in 2008

Sampling Days	362 days
Annual Average Concentration (Arithmetic Mean)	15.81 ug/m ³
Highest 24-Hour Concentration	127.29 ug/m ³
Jan – March Average Concentration	17.84 ug/m ³

Table 2
PM_{2.5} Air Quality from 1993 to 2008

	Average Annual Concentration (ug/m ³)	Jan-to-Mar Concentration (ug/m ³)	Highest 24-Hour Concentration (ug/m ³)	Exceedances of 24-Hour NAAQS (>35 ug/m ³)
1993	10.8	23.7	54.0	3 (55 sampling days)
2003	7.2	8.2	20.0	0 (118 sampling days)
2004	6.8	7.3	28.0	0 (119 sampling days)
2005	6.9	9.2	35.0	1 (112 sampling days)
2006	6.2	6.7	28.0	0 (121 sampling days)
2007	11.6	12.9	32.8	0 (263 sampling days)
2008	15.8	17.8	127.3	17 (362 sampling days)

As shown in Table 2, the average annual and January-to-March concentration levels were higher in 2008 than in 2007. Also, the concentration levels in 2008 were substantially higher than PM_{2.5} levels from 2003 to 2006.

It should be noted that a number of wildfires in 2007 and 2008 that plagued California contributed to the higher annual concentrations in 2007 and 2008. In June and July of 2008, PM_{2.5} concentrations exceeded the National Ambient Air Quality Standard on 17 days, reaching a 24-hour concentration of 127.3 ug/m³ on June 25th. However, PM_{2.5} concentrations were also substantially higher from January to March in 2007 and 2008 in comparison to previous years.

It is difficult to gauge air quality on a year-to-year basis since weather plays an important part in pollutant concentrations. However, we can gauge broad trends in our air quality over the past 15 years. Using the year of Town incorporation as the base year for measuring the improvement of air quality in Truckee, it can be clearly seen that our particulate matter air quality has improved substantially. Excepting the poor air quality days resulting from wildfires in 2007 and 2008, the following conclusions on our PM_{2.5} air quality can be made:

- The average annual concentrations are less today than they were in 1993.
- The average concentrations for the seasonal period of January to March have increased substantially in the last two years, but are still less than in 1993.
- The highest 24-hour concentrations over the last six years are still substantially less than in 1993.

NATIONAL AND STATE AIR QUALITY STANDARDS

Both the United States Environmental Protection Agency and the California Air Resources Board have adopted ambient air quality standards for PM₁₀ and PM_{2.5}. The State standards are more stringent than the National standards. However, failure to meet the National standards results in harsher consequences. (Non-compliance with State standards does not result in any legal or regulatory ramifications.)

In September 2006 the United States Environmental Protection Agency adopted new National Ambient Air Quality Standards for particulate matter. In summary, the EPA:

- Substantially strengthened the 24-hour fine particulate matter standard, lowering it from the previous level of 65 ug/m³ to 35 ug/m³.
- Retained the annual fine particulate matter standard at 15 ug/m³.
- Retained the current 24-hour PM₁₀ standard at 150 ug/m³.
- Revoked the annual PM₁₀ standard.
- Did not establish a new 24-hour concentration standard for particulate matter between 2.5 and 10 microns in size.

Because we no longer have monitoring data for PM₁₀, we can no longer make any determinations regarding compliance with the NAAQS 24-Hour standard and the SAAQS Annual and 24-Hour standards. Nonetheless, staff believes that the Truckee air basin is still not in compliance with the SAAQS Annual and 24-Hour standards and may exceed the NAAQS 24-Hour standard on occasion in March and April.

The monitoring data for 2006 to 2008 was reviewed to determine our compliance with both National and State standards:

 National Standard: PM₁₀ 24-Hour Concentration, 150 ug/m³
(Not to be exceeded more than once per year over 3 years)
Compliance: It is not known whether air quality in Truckee complies with this standard.

 National Standard: PM_{2.5} Annual Concentration, 15 ug/m³
(Average for 3 years)
Compliance: Truckee is in compliance
(Average for 2006 to 2008 – 11.2 ug/m³;
Includes wildfire events)

 National Standard: PM_{2.5} 24-Hour Concentration, 35 ug/m³
(98th percentile, average for 3 years)
Compliance: Truckee is in compliance
(Average 98th percentile for 2006 to 2008 – 21.0 ug/m³;
Excludes wildfire events)

 State Standard: PM₁₀ Annual Concentration, 20 ug/m³
Compliance: It is not known whether air quality in Truckee complies with this standard, but most likely it exceeds this standard.

 State Standard: PM₁₀ 24-Hour Concentration, 50 ug/m³
Compliance: It is not known whether air quality in Truckee complies with this standard, but most likely it exceeds this standard.

 State Standard: PM_{2.5} Annual Concentration, 12 ug/m³
Compliance: Wildfires in June and July 2008 resulted in a 2008 annual concentration of 15.8 ug/m³. The annual concentration in 2007 was 11.6 ug/m³.

Truckee comfortably complies with National annual and 24-hour standards for PM_{2.5}. In the last two years, PM_{2.5} concentrations have increased and this is only partially explained by increased particulate matter emissions during the summertime from wildfires. We no longer have monitors for PM₁₀ and cannot determine compliance with State PM₁₀ standards. We are probably close to exceeding State annual standards for PM_{2.5}. After a number of years of reduced particulate matter emissions and lower PM₁₀ and PM_{2.5} concentrations, it appears that particulate matter emissions and concentrations may be increasing.

CONTROL STRATEGIES

The Town's air quality efforts in 2008 focused on our rebate program and assisting property owners in understanding the mandatory deadline for the removal of non-certified woodstoves and fireplace inserts. All non-certified woodstoves and fireplace inserts in the Town of Truckee were required to be removed or made permanently inoperable by May 31, 2008, and the Town

continued to offer rebates of \$300 to \$500 to homeowners to encourage compliance with this requirement by offsetting some of the homeowner's costs. Rebates in the amount of \$123,700 were issued in 2008 for the removal of 346 non-certified woodstoves and fireplace inserts. Since the program's inception in 1999, the Town has expended \$542,000 associated with the removal of 1,549 non-Town approved woodstoves and inserts.

CONCLUSIONS AND NEXT STEPS

As discussed in previous annual reports, our particulate matter air quality has improved dramatically since the "dark days" of 1992 and 1993. Although we have more traffic, more homes and residents, our PM_{2.5} and PM₁₀ concentrations are less today than at the time of Town incorporation. This is a result of a substantial reduction in fine particulate matter emissions from woodburning appliances. However, it appears that particulate matter emissions are back on the rise as evident by substantial increases in PM_{2.5} concentrations during the winter months of 2007 and 2008. However, this is not an immediate problem and we have time to study the issue and develop and implement programs to maintain or improve the quality of our air.

Staff is currently processing the remaining applications for woodstove rebates and undertaking code compliance for those homeowners that may have not yet removed their non-certified woodstoves or fireplace inserts. No programs are scheduled for implementation in the FY2009-2010 budget, and staff recommends that we take a breath at this time to figure out our next steps in addressing particulate matter air quality. We have a major decision point upcoming as to whether we need to address coarse particulate matter from re-entrained road sand, continue to address fine particulate matter from woodburning devices, or address both. Staff will study the issues over the next several months and identify options for possible programs that could be implemented next year. We will bring our recommendations to the Council in early 2010 when the Council discusses priorities and work programs for the next year.