



Town of Truckee

2004 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

2004 Annual Report for Particulate Matter Air Quality

INTRODUCTION

This report is the fourth annual report. It summarizes the quality of air for particulate matter pollution in 2003, attempts to explain the factors contributing to our air quality and any changes to our air quality for this past year, and also discusses the status of the implementation of the plan's control strategies. Further, as part of this report the Community Development Director and Town Planner are requesting Council confirmation on the priority of implementing control strategies.

PARTICULATE MATTER MONITORS

Particulate matter air quality has been monitored in Truckee since 1988. Since 1998 the Northern Sierra Air Quality Management District has made several changes to air quality monitoring operations in Truckee. The Hi-Vol PM₁₀ monitors at the Glenshire and Downtown fire stations were removed in early 2000, and PM₁₀ monitoring data was provided solely by a TEOM (24-hour, daily sampling) monitor at the Downtown fire station until late 2003. The Northern Sierra Air Quality Management District installed a Hi-Vol PM_{2.5} monitor at the Downtown fire station in 1999, and this monitor samples PM_{2.5} air quality for a 24-hour period once every three days.

In last year's annual report, the Community Development Department identified inconsistencies in the PM₁₀ TEOM data that indicated the monitoring station was giving lower-than-actual readings of PM₁₀ concentrations. In response to these findings, the District and the Town in a cooperative effort replaced the TEOM monitor with a new MetaOne Beta Attenuation Monitor (BAM) (24-hour, daily sampling). This monitor was installed and began operation in Fall 2003, and we have PM₁₀ data from this monitor since October. The District has tested this monitor for accuracy with another monitor, and the District has concluded Truckee's BAM monitor is giving accurate readings. The TEOM monitor was discontinued after the BAM monitor became operable.

THE QUALITY OF OUR AIR

Because the TEOM has not been giving accurate readings for the past three to four years and we only have six months of BAM monitoring data, an analysis of PM₁₀ air quality cannot be conducted. Nonetheless, a comparison of data from the BAM monitor from October to March was compared with monitoring data from 1993-94 and 1998-99 during those same months. This limited data shows that PM₁₀ concentrations in 2003-04 were substantially less than 1993-94 but slightly higher than 1998-99. However,

because the data is limited, no conclusions can be made in regards to air quality or compliance with National and State PM₁₀ ambient air quality standards.

We can determine with certainty PM_{2.5} concentrations for the past four years and our air quality related to fine particulate matter. This data shows emissions from our second and third largest sources of PM₁₀, residential wood combustion and construction/demolition processes, have decreased in the last several years, despite in an increase in the number of residential units and increased construction activity.

Truckee PM_{2.5} Concentrations

	2000	2001	2002	2003
Average Annual Concentration	8.8 ug/m ³	9.4 ug/m ³	7.5 ug/m ³	7.2 ug/m ³
Highest 24-Hour Concentration	23 ug/m ³	120 ug/m ³	18 ug/m ³	20 ug/m ³
Avg. 24-Hour Conc. (Jan-Mar)	10.2 ug/m ³	8.7 ug/m ³	7.8 ug/m ³	8.2 ug/m ³

NOTE: The highest 24-hour concentration in 2001 was due to the Martis Peak Fire in late August. The highest 24-hour concentration for a non-fire event was 22 ug/m³

The cause or causes for this decrease is difficult to ascertain specifically because there is limited data and weather patterns are such an integral factor in Truckee's air quality. Nonetheless, it can be concluded that lower PM_{2.5} concentrations since 2000 are partially a result of reduced residential wood combustion emissions. The Community Development Department believes residential wood combustion emissions from existing development have decreased noticeably with the extension of a natural gas pipeline to Truckee and the availability of natural gas service. The extension of natural gas had reduced reliance on woodstoves as a home heating source, and many homeowners took advantage of natural gas to remove non-certified woodstoves or replace them with gas-service stoves. The reduction of residential wood combustion emissions from the extension of natural gas has slowed as natural gas has been extended to all except a few portions of the community. However, residential wood combustion emissions continue to decrease with the implementation of the Town ordinance requiring the removal of non-certified woodstoves and fireplace inserts prior to the sale or transfer of a home.

The removal of these non-certified stoves and inserts and their replacement with certified stoves or greater reliance on other heating sources results in a reduction of particulate matter emissions. This reduction offsets the increases in PM_{2.5} emissions from newly constructed homes that use woodstoves as a secondary heat source or as an amenity. The Community Development Department estimates that emission reductions from the removal of non-certified stoves and inserts are greater than the increases from new development thereby resulting in an overall reduction in PM_{2.5} emissions from residential wood combustion. And that is the key to the woodstove removal program: By the Town requiring the removal of non-certified stoves and inserts, both current and new homeowners will be able to enjoy a certified woodstove in their home while at the same time our air quality continues to improve. If our air quality

becomes worse and if we approach exceeding the National Ambient Air Quality Standards, the Town may need to consider more stringent measures including a ban on the installation of new certified woodstoves and fireplace inserts and the removal of all woodstoves and inserts.

Because the TEOM monitoring data cannot be used, we cannot determine if emissions from re-entrained road dust have increased or decreased from previous years. The Truckee air basin experienced favorable weather patterns in 2002 and 2003 that would reduce PM₁₀ emissions, yet on the other hand, increased traffic volumes on State highways have resulted in increased re-entrained road dust emissions. The Community Development Department has yet to identify any human-influenced actions undertaken by the Town or CalTrans that would account for any substantial reductions in re-entrained road dust. It is our opinion that the Truckee air basin is still susceptible to poor air quality days (> 100 ug/m³ PM₁₀) from re-entrained road dust, most likely on days following major winter storms and days when road sand is swept.

NATIONAL AND STATE AIR QUALITY STANDARDS

There have been no changes to the Truckee air basin's compliance with the National and State ambient air quality standards for PM₁₀ in the last four years. Although the data from the PM₁₀ TEOM monitor cannot be relied upon, the Community Development Department believes that air quality in Truckee for the past three years continues to comply with the annual (50 ug/m³) and 24-hour (150 ug/m³) National ambient air quality standards for PM₁₀. It cannot be determined whether the Truckee air basin complies with the annual State standard for PM₁₀ (30 ug/m³) since we still do not have accurate data. There were seven exceedances of the 24-hour State standard (50 ug/m³) in 2003. (The new BAM monitor has already registered 43 exceedances of the 24-hour State standard from January to March 2004.)

NAAQS Annual PM ₁₀	Yes
NAAQS 24-Hour PM ₁₀	Yes
NAAQS Annual PM _{2.5}	Yes
NAAQS 24-Hour PM _{2.5}	Yes
SAAQS Annual PM ₁₀	??
SAAQS 24-Hour PM ₁₀	No

When the Air Quality Management Plan was adopted in July 1999 it was not known whether Truckee would comply with the new PM_{2.5} standards. With four years of monitoring data under our belt, Truckee comfortably complies with the NAAQS PM_{2.5} annual and 24-hour standards. Both the annual and 24-hour concentrations are approximately 30% below the National standards. (Poor air quality periods caused by catastrophic events such as wildfires are not included in calculations determining compliance with NAAQS.) Caution should be taken though since we have only four years of monitoring data.

It is the opinion of the Community Development Department that particulate matter air quality in Truckee and compliance with National and State standards has not worsened

in the last four years and may have improved although to what extent it cannot be determined. However, Truckee is still susceptible to poor air quality days in the winter and spring.

CONTROL STRATEGIES

As part of your consideration of the 2003 Annual Report, the Council established a schedule for the implementation of five control strategies identified in the Air Quality Management Plan. These strategies and their estimated schedule were:

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|----|---|-------------------------------|
| 1. | New PM ₁₀ monitor | To be installed by late 2003 |
| 2. | Joint financial assistance program with Placer County | To be completed by late 2003 |
| 3. | Mitigation fee program | To be completed in early 2004 |
| 4. | Ordinance requiring removal of all non-certified woodstoves and inserts | To be completed in late 2003 |
| 5. | Street sanding guidelines | To be initiated in 2004 |

The following information summarizes the work that has been done on each control strategy and their current status.

New PM₁₀ Monitor

In a cooperative effort, the Northern Sierra Air Quality Management District and the Town purchased and installed a new MetOne Beta Attenuation Monitor (BAM) to replace the Downtown TEOM monitor. The BAM monitor became operational in October 2003 and is providing accurate readings. The Town contributed approximately \$8,000 of the total cost of \$18,000 for the purchase and installation of the monitor.

Joint Financial Assistance Program

The objectives of the financial assistance program will be:

- Application and stove inspection requirements will be the same for the Town and Placer County/Martis Valley home owners.
- The Town and Placer County will share staff resources in implementing the program to best serve the community.
- The amount of the incentives and assistance will be re-evaluated to ensure the incentives are sufficient to act as a catalyst in the removal of non-certified woodstoves, and the incentives will be the same for the Town and Placer County/Martis Valley home owners.

- The replacement of a stove will no longer be required to qualify for the incentive. A home owner will be able to qualify by just removing a woodstove and agreeing to restrictions on the future installation of woodstoves. (Note: The Town has already begun providing a financial incentive for removing a non-certified stove without replacing it with an EPA certified woodstove or gas-service stove.)
- A reduced incentive will be offered for the removal of EPA certified woodstoves.
- The needs of low-income households to remove non-certified woodstoves will be identified, and appropriate financial assistance programs to serve low-income households will be developed.

The Placer County Air Pollution Control District has taken the lead on preparing the financial assistance program. The Town Council, on behalf of the District, approved a contract for the consulting firm of Jones & Stokes to assist District staff in preparing the program, and an administrative draft of a study has been completed. Town and Placer County staffs are now reviewing the draft, and it is anticipated that a joint financial assistance program will be brought to the Town Council and Placer County Board of Supervisors in late summer. The interim rebate program will continue until the joint financial assistance program is adopted.

Mitigation Fee Program

On December 4, 2003 the Town Council adopted Resolution No. 2003-52 which establishes policy for cumulative air quality impacts from PM₁₀ emissions. The policy requires mitigation of PM₁₀ emissions from solid fuel burning appliances in new development and mitigation of emissions from other sources (e.g., re-entrained road dust, vehicle emissions) for larger projects. At the discretion of the review authority, a mitigation fee may be paid in-lieu of mitigation in the amount of \$300 for each solid fuel burning appliance that will or may be installed and \$7,336 per annual ton of other emissions. This fee will be re-evaluated when the joint financial assistance program is completed.

A mitigation fee is not required for the installation of EPA certified appliances in single family homes on existing subdivision lots. A mitigation fee program for single family homes will be brought to the Council for further consideration when the joint financial assistance program is completed.

Removal of All Non-Certified Woodstoves and Inserts

On December 18, 2003 the Town Council adopted Ordinance No. 2003-06 requiring the removal of all non-certified woodstoves and inserts within the Town of Truckee by July

Air Quality Successes in 2003
Installation of a new and accurate PM10 monitor in the Downtown
Financial incentive program assisted in the removal of over 85 non-certified woodstoves and fireplace inserts
Nearly 400 homes inspected, verifying those homes did not have a non-certified woodstove or fireplace insert
Council adopted formal policies for the mitigation of particulate matter emissions
Council adopted an ordinance requiring the removal of all non-certified woodstoves and fireplace inserts by July 15, 2006

15, 2006. Staff is scheduled to return to the Council on or before July 1, 2004 with draft administrative procedures and guidelines for the implementation and enforcement of the ordinance. Because of staff time constraints, staff is recommending that this deadline be postponed to January 1, 2005.

Street Sanding Guidelines

The primary purpose of the street sanding guidelines is to provide support in the Town's request to CalTrans to modify their sanding operations and reduce re-entrained road dust emissions. The Town Public Works Department has made substantial strides in equipment and operations in the past few years to improve our sanding and sweeping operations, and the Community Development Department believes it is not urgent at this time to adopt street sanding guidelines in order to address Town operations. The Town Council has designated this control strategy as a "B" priority, and work on the street sanding guidelines was scheduled to begin in mid-2004. Staff recommends that this timeline be rescheduled to FY2005-2006.

CONCLUSIONS

The goal of the Air Quality Management Plan is two-fold:

- Achieve and maintain compliance with the National Ambient Air Quality Standards; and
- Strive to achieve to achieve compliance with State Ambient Air Quality Standards and make reasonable progress towards achieving these standards.

It is the conclusion of this report that the Town is meeting this important goal. By returning to the preface and answering the questions raised by Objective 9, this conclusion is supported by the following.

What is the success of the control strategies in achieving the attainment goal of the Air Quality Management Plan?

Air quality in Truckee is improving! It is too early to determine to what extent our air quality has improved from the dark days of the early 1990's, but progress has been made. Further, we cannot ascertain with any quantitative confidence of the quality of air today and the extent of any improvement in air quality since 1999. PM₁₀ monitoring data for the years 2000, 2001, 2002, and the first three quarters of 2003 is not reliable and cannot be used to analyze air quality or to compare with air quality data from previous years. PM_{2.5} monitoring data has only been collected for the past four-and-a-half years and cannot be compared to preceding years. However, improvement in particulate matter air quality over the last four years is quantified by the PM_{2.5} monitoring data.

Our initial improvement in air quality was not a result of the implementation of control strategies but rather the extension of natural gas to the Truckee area. Nonetheless, the

Community Development Department believes that the most recent strides in improved air quality, especially for particulate matter less than 2.5 ug, are in large part a result of the implementation of the AQMP control strategies for the removal of non-certified stoves and inserts. It remains important to continue the control strategies of the AQMP any improvement in air quality that we have enjoyed in the last several years will be eroded or reversed by PM₁₀ emissions generated by new development and increased traffic unless there are concurrent reductions in PM₁₀ emissions from existing sources.

Consequently, it is vital for the Town to continue to aggressively pursue the removal of non-certified woodstoves and fireplace inserts from the Truckee air basin and to encourage the use of natural gas and non-polluting heat sources (e.g., geothermal heat pumps). These efforts are necessary to counterbalance particulate matter emissions from new development. If emissions from existing sources are not reduced, the alternative to ensure that our air quality is not degraded will be to prohibit the installation of woodstoves and inserts.

What steps need to be taken to ensure consistency with the goal and objectives of the Air Quality Management Plan?

The steps that need to be taken are set forth in the control strategies listed in the Air Quality Management Plan. These control strategies are the appropriate steps that the Town will take to ensure continued consistency with the plan's goal and objectives. The Council has previously discussed implementation of the "high priority" control strategies, and the Community Development Department has received direction on how to proceed with implementing these control strategies.

The Town has set a high level of commitment to air quality, and this commitment requires substantial resources of the Planning Division. These resources are diverted from planning projects and development application processing in order to implement and administer the air quality control strategies. It is estimated that air quality issues currently take up approximately 8% of the Planning Division's staffing resources or around one-half of a full-time planner. These resources will continue to be allocated to air quality as needed to implement and administer the control strategies described above. However, this past year staff resources and time previously allocated to air quality have been redirected as needed to higher priority or customer service-oriented planning tasks (e.g., General Plan Update, increased development application activity). This has delayed work on the joint financial assistance program and the non-certified woodstove/insert removal ordinance. Delays in implementing particulate matter control strategies will continue in FY2004-05 as development activity increases substantially over previous years and the General Plan Update (and its implementing measures) utilizes even more staff time. Consequently, the timelines for implementing these control strategies will need to be lengthen under current circumstances.

RECOMMENDATIONS

Staff recommends that the Council adopt the following schedule for implementation of control strategies as described below and direct staff to take the necessary actions to implement the strategies as time permits:

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|----|--|---------------------------------|
| 1. | Joint financial assistance program with Placer County | To be completed by Fall 2004 |
| 2. | Mitigation fee program for single family homes | To be considered by Winter 2005 |
| 3. | Administrative procedures and guidelines for ordinance requiring removal of all non-certified woodstoves and inserts | To be completed by January 2005 |
| 4. | Street sanding guidelines | To be initiated in FY2005-2006 |