

# Revised PM10 Attainment/Maintenance Plan Telluride Attainment/Maintenance Area

## CONTACT INFORMATION

Colorado Air Quality Control Commission  
4300 Cherry Creek Drive South  
Denver, CO 80246  
(303) 692-3476



---

Colorado Department  
of Public Health  
and Environment

Air Pollution Control Division  
4300 Cherry Creek Drive South  
Denver, CO 80246  
(303) 692-3100

## TABLE OF CONTENTS

Chapter 1, *Introduction*, is provided as background information only and is not to be construed to be part of the federally-enforceable State Implementation Plan.

Chapter 2, *Continued Maintenance of the PM10 NAAQS*, describes the PM10 monitoring network and demonstrates with monitored data the continued maintenance of the PM10 NAAQS.

Chapter 3, *Attainment/Maintenance Plan*, presents the emissions inventories, control measures and other requirements to ensure maintenance of the PM10 standard through the year 2021. This submittal demonstrates maintenance of the PM10 standard for the 2<sup>nd</sup> ten-year period beyond 2000, the year the Colorado Air Quality Control Commission approved the PM10 Redesignation Request and Maintenance Plan for the Telluride area (EPA formally redesignated Telluride to attainment in 2001).

## Chapter 1: Introduction

The State of Colorado is submitting to the U.S. Environmental Protection Agency (EPA), in accordance with CAAA Section 176A(b), a revised PM10 Attainment/Maintenance Plan for the Telluride Attainment/Maintenance Area that demonstrates continued attainment/maintenance of the 24-hour PM10 National Ambient Air Quality Standard (NAAQS) through 2021.

The Telluride area was redesignated to attainment status by the EPA (66 FR 32556) on June 15, 2001 (effective date, August 14, 2001). Colorado submitted a redesignation request and attainment maintenance plan on May 10, 2000. The plan demonstrated attainment/maintenance of the PM10 NAAQS through 2012 in accordance with CAAA Section 176A(a). This attainment/maintenance plan, which is being submitted for inclusion in the State's federally-enforceable State Implementation Plan (SIP), provides for maintenance of the national standard for PM10 in the Telluride area through 2021.

### **Colorado Air Quality Control Commission**

The Colorado Air Quality Control Commission (AQCC) is a regulatory body with responsibility for adopting air quality regulations consistent with State statute. This includes the responsibility and authority to adopt State Implementation Plans (SIPs) and their implementing regulations. The Commission takes action on SIPs and regulations through a public rule-making process. The Commission has nine members who are appointed by the Governor and confirmed by the State Senate.

### **National Ambient Air Quality Standards for PM10**

In 1971, the EPA set National Ambient Air Quality Standards (NAAQS) for several air pollutants, including total suspended particulates (TSP), defined as particles with an aerodynamic diameter of less than 40 microns. In 1987, the EPA changed the particulate matter standard to include only those particles with an aerodynamic diameter of less than or equal to 10 microns (commonly referred to as PM10). The current PM10 NAAQS allow for a maximum 24-hour average of 150  $\mu\text{g}/\text{m}^3$ . The 24-hour PM10 NAAQS may not be exceeded more than once per year on average over three years.

An annual average of 50 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) was revoked by the EPA in 2006 due to a lack of evidence linking long-term exposure to health problems.

There are both primary and secondary air quality standards. The primary standards are set to protect human health, with a margin of safety to protect the more sensitive persons in the population, such as the very young, elderly and the ill. Secondary standards are set to protect property, materials, aesthetic values and general welfare. For PM10, the national primary and secondary standards are the same. The numerical levels of the standard are subject to change, based on new scientific evidence summarized in air quality criteria documents.

In general, demonstrating attainment requires collecting representative air monitoring data and using approved measuring instruments and procedures, with adequate quality assurance and quality control. The three most recent years are examined, during which the average annual number of exceedances must be less than or equal to one.

Air quality measurements in the Telluride area satisfy this requirement, as shown in Section 2 "Attainment of the PM10 standard."

## **Telluride Nonattainment Area Classification History**

Because of observed problems with air particles, monitoring of total suspended particulates (TSP) began in 1973, and continued through 1987. In 1987, based on relatively high TSP levels, the Telluride area was designated by the EPA as a "Group I" nonattainment area of concern, i.e., an area with a strong likelihood of violating the PM10 NAAQS. In 1990, the Telluride area was designated a "moderate" nonattainment area pursuant to section 107(d)(4)(B) of the CAAA.

The first PM10 SIP Element was adopted by the AQCC in July 1988. The emission controls included road paving and coal/woodburning restrictions. EPA Region VIII intended to approve the SIP Element, though it eventually was rejected once the CAA was amended in 1990 and new, more stringent requirements were in place. A new Telluride area SIP Element was adopted by the AQCC in January 1993 and supplemented in November 1993. The control measures included the paving and woodburning measures from the 1988 SIP Element and new road paving contingency measures. EPA partially/conditionally approved the SIP Element on September 19, 1994 (59 FR 47807).

The Telluride area was redesignated to attainment status effective August 14, 2001, after the EPA approved the PM10 Redesignation Request and Maintenance Plan.

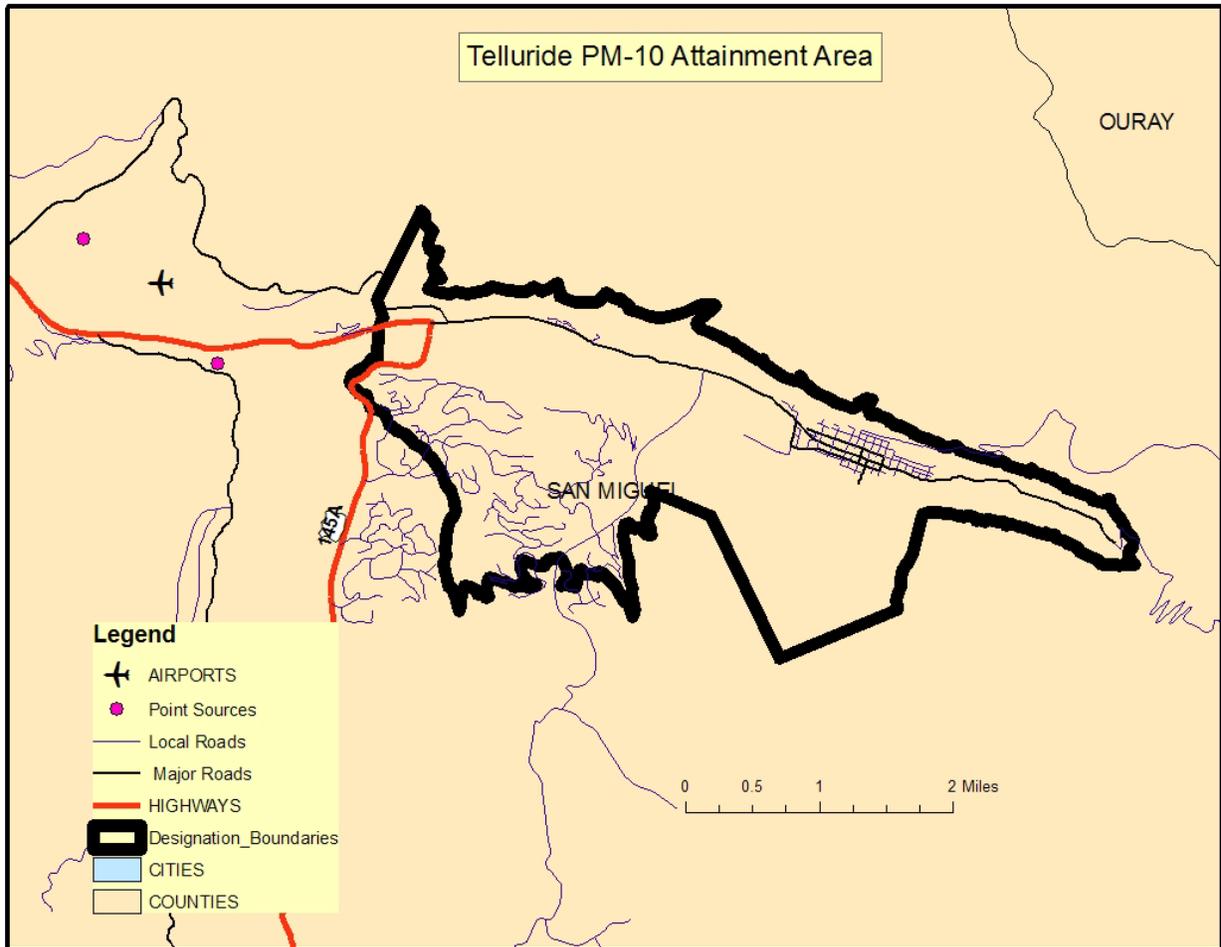
## **Telluride PM10 Attainment/Maintenance Area**

The boundaries for the Telluride/Mountain Village/San Miguel County PM10 attainment/maintenance area are defined by Air Quality Control Commission as follows:

The area begins at the intersection of Colorado State Highway 145 and the Telluride service area boundary, as it existed in 1991. At Remine Creek, the attainment/maintenance boundary follows the service area boundary for 9.65 miles to the eastern edge of the area, continuing to follow the 9,200 foot contour line. The boundary then intersects Bear Creek. Here the attainment/maintenance boundary diverges from the service area boundary (9,200 foot contour line). The attainment/maintenance boundary continues in a west, southwest direction for 0.92 miles from the intersection of the 9,200 foot contour line and Bear Creek to the top of ski lift number 9 in the Telluride Ski Area at an elevation of about 11,900 feet. The boundary then shifts and runs in a north-westerly direction for 0.83 miles from the top of lift 9 to the top of lift 7, which is located at an elevation of 10,490 feet. From the top of lift 7, the boundary continues in a north-westerly direction for 0.5 miles to the intersection of lift 3 with the 10,000 foot contour line. The boundary follows the 10,000 foot contour line in a south, south-west direction for 3.2 miles, until it intersects Skunk Creek. Here the boundary diverges from the 10,000 foot contour line and follows Skunk Creek in a northerly direction for 2.25 miles. At the intersection of Skunk Creek and Colorado State Highway 145, the boundary leaves the creek and follows Highway 145 in a northerly direction until it meets the service area boundary as it existed prior to changes adopted in 1991.

This area essentially includes the Town of Telluride, the Town of Mountain Village, and portions of San Miguel County, which are within the Telluride airshed. A map illustrating the area boundary is shown in Figure 1.

**Figure 1.**  
**Map of the Telluride/Mountain Village/San Miguel County**  
**Attainment/Maintenance Area**



## **Continued Attainment of the PM10 Standard**

Chapter Two presents the most recent five years (2004-08) of monitored data, and shows that Telluride area has maintained attainment of the standard since the redesignation was approved.

## **Attainment/Maintenance Plan**

Chapter Three contains the core elements EPA has established as necessary for approval of maintenance plans:

1. Description of the control measures for the maintenance period
2. Emission inventories for current and future years
3. Maintenance demonstration
4. Mobile source emissions budget
5. Approved monitoring network
6. Verification of continued attainment
7. Contingency plan
8. Subsequent maintenance plan revisions

## CHAPTER 2: CONTINUED MAINTENANCE OF PM10 NAAQS

Attainment of the 24-hour PM10 NAAQS, which is 150 micrograms per cubic meter ( $\text{ug}/\text{m}^3$ ) of PM10 in ambient air (based on a 24-hour averaging time for the measurement) is demonstrated when the average annual number of expected exceedances is less than or equal to one. The following information demonstrates, as required by Section 107(d)(3)(E) of the Clean Air Act, that the Telluride area continues to attain the national 24-hour standard for PM10. This demonstration is based on quality assured monitoring data.

### PM10 Monitoring

PM10 ambient air monitoring in the Telluride area consists of one station at 333 West Colorado Avenue.

This section shall not be construed to establish a monitoring network in the federally-enforceable SIP. EPA has already approved a monitoring SIP for the State of Colorado and this description of the PM10 monitoring network shall not be construed to amend such monitoring SIP.

### Monitoring Results and Attainment Demonstration

The monitoring data presented below verifies that the Telluride area is attaining the 24-hour PM10 NAAQS, in accordance with the federal requirements of 40 CFR Part 58. The three-year average of expected values greater than  $150 \text{ ug}/\text{m}^3$  ppm is less than or equal to one. Summary data are shown in the following table.

Figure 2. Monitored PM10 Values

24-hour maximum PM10 values micrograms per cubic meter ( $\text{ug}/\text{m}^3$ ) (PM10 NAAQS = $150 \text{ ug}/\text{m}^3$ )								
	2001	2002	2003	2004	2005	2006	2007	2008
333 W. Colorado Ave.	59	67	97	72	70	69	77	82

### Quality Assurance Program

PM10 monitoring data for the Telluride area have been collected and quality-assured in accordance with 40 CFR, Part 58, Appendix A, EPA's "Quality Assurance Handbook for Air Pollution Measurement Systems, Vol. 11; Ambient Air Specific Methods", the APCD's Standard Operating Procedures Manual, and Colorado's Monitoring SIP which EPA approved in 1993. The data are recorded in EPA's AIR QUALITY SYSTEM (AQS) and are available for public review at the APCD and through EPA's AQS database.

## CHAPTER 3: ATTAINMENT/MAINTENANCE PLAN

Telluride PM10 Attainment/Maintenance Plan Revision 11/19/09

This attainment/maintenance plan is a SIP revision and provides for maintenance of the relevant NAAQS in the area for the ten-year period through 2021.

The EPA has established the core elements listed below as necessary for approval of attainment/maintenance plans:

- Description of the control measures for the maintenance period
- Emission inventories for current and future years
- Maintenance demonstration
- Mobile source emissions budget
- Approved monitoring network
- Verification of continued attainment
- Contingency plan
- Subsequent maintenance plan revisions

## **Attainment/Maintenance Plan Control Measures**

### **Control Measures Included in the Attainment/Maintenance Plan**

The Telluride area will rely on the control programs listed below to demonstrate maintenance of the 24-hour PM10 standard through 2021. No emission reduction credit has been taken in the attainment/maintenance demonstration for any other current State or local control programs and no other such programs, strategies, or regulations shall be incorporated or deemed as enforceable measures for the purposes of this maintenance demonstration.

The attainment/maintenance plan takes credit for the following federally-enforceable control measures, which, except where otherwise noted, are included in the SIP:

### **Federal fuels and tailpipe standards and regulations**

Credit is taken in this attainment/maintenance plan for current federal regulations concerning motor vehicles, fuels, small engines, diesels, and non-road mobile sources. While credit is taken for these federal requirements, they are not part of the Colorado SIP.

### **Woodburning**

Air Quality Control Commission Regulation No. 4 covers wood stoves, conventional fireplaces and woodburning on high pollution days, as approved by EPA as part of the federal SIP in 1997. This maintenance plan makes no changes to Regulation No. 4.

The Town of Telluride and San Miguel County have adopted wood and coal burning emission reduction measures. These wood and coal burning controls were adopted and implemented throughout the 1980s and early 1990s, were approved by EPA in 1994, and are defined in detail in Section II. A. of the "State Implementation Plan-Specific Regulations for Nonattainment – Attainment/Maintenance Areas (Local Elements).

All of these requirements remain effective, until they are removed or revised by a future SIP revision.

Telluride PM10 Attainment/Maintenance Plan Revision 11/19/09

## **Stationary Sources**

Emissions from stationary sources of pollution are regulated by several Air Quality Control Commission Regulations:

- 1) Regulation No. 1 regulates emissions of particulates, smoke, sulfur dioxide, and nitrogen oxides and establishes limits on these pollutants from covered sources. Sections I-IV, Sections VI-IX, and Appendices A and B are already included in the approved SIP. This maintenance plan incorporates the regulatory limits in calculations of maximum allowable emissions for stationary sources. No additional revisions are made to Regulation No. 1 as part of the maintenance plan revision.
- 2) Regulation No. 3 lays out provisions of the State of Colorado's stationary source permitting program. Parts A and B of Regulation No. 3 are already included in the approved SIP. Part C implements the federal operating permit program and this reference to Part C of Regulation No. 3 shall not be construed to mean that these regulations are included in the SIP.
- 3) Regulation No. 6 implements the federal standards of performance for new stationary sources. This maintenance plan makes no changes to this regulation. This reference to Regulation No. 6 shall not be construed to mean that these regulations are included in the SIP.
- 4) The Common Provisions Regulation contains general provisions applicable to all emissions sources in Colorado. This maintenance plan makes no changes to this regulation.

The emission inventories for stationary sources supporting the maintenance demonstration have followed all relevant EPA rules and guidance documents for calculating such emissions.

As an attainment/maintenance area since August 14, 2001, the State and federal attainment PSD permitting requirements remain in effect in the Telluride area. This program requires the application of Best Available Control Technology when constructing new or modified major stationary sources.

## **Street Sanding Controls**

There is a requirement that any user that applies street sanding material in the Telluride attainment/maintenance area must use materials containing less than two percent fines. This strategy was adopted in 1994 and approved by EPA in 1996, and it is defined in detail in Section II.B. of the "State Implementation Plan-Specific Regulations for Nonattainment – Attainment/Maintenance Areas (Local Elements).

## Emission Inventories

This section presents emission inventories for the attainment/maintenance plan.

All of the inventories were developed using EPA-approved emission modeling methods and updated transportation and demographics data. The PM10 attainment/maintenance plan Technical Support Document contains detailed information on model assumptions and parameters for each source category.

Figure 3. Emission Inventories

### PM10 Emission Inventory (PM 10 Pounds Per Day).

Area and Mobile Sources	Source Category	2007	2015	2021
	Agriculture	5.39	5.39	5.39
	Commercial Cooking	23.35	30.17	35.29
	Construction	270.66	349.68	408.94
	Fuel Combustion	0.14	0.18	0.22
	Highway Vehicles	6.99	6.69	6.46
	Non-Road	50.54	65.29	76.36
	Paved Road-Dust	367.72	491.61	584.53
	Structure Fires	0.22	0.28	0.33
	Unpaved Road-Dust	324.98	434.47	516.59
	Woodburning	234.71	303.22	354.61
	TOTAL	1284.70	1686.99	1988.71

## Maintenance Demonstration

This attainment/maintenance plan provides for maintenance of the NAAQS through the year 2021.

Because there have never been exceedances of the annual standard in the Telluride area, an analysis for maintenance of the annual standard was not prepared. Protection of the 24-hour standard should be sufficient to protect the annual standard since the 24-hour standard has always been the standard of concern.

A design day concentration of 82 ug/m<sup>3</sup> has been selected as a conservative value that represents the highest 24-hour maximum PM10 value recorded in the Telluride area between 2006-2008. This 82 ug/m<sup>3</sup> concentration occurred on March 28, 2008. No reduction for background values has been taken into account for the design day value, making the 82 ug/m<sup>3</sup> a conservative estimate of PM10 ambient air concentrations in the Telluride area, meaning that the design value likely overstates the actual amount of PM10.

The emissions inventory data presented in this report is used to determine the growth in PM10 emissions from the 2007 base year to the 2021 maintenance year. The emissions inventory shows an increase in PM10 from 1,285 pounds per day in 2007 to 1,989 pounds per day in 2021. This represents an increase of 54.79 percent in emissions:

$$1,989/1,285 = 1.5479, \text{ or } 54.79 \text{ percent.}$$

The design day concentration of 82 ug/m<sup>3</sup> of PM10 is then increased 54.79 percent to "roll forward" to the 2021 attainment year. This roll-forward modeling shows a 2021 concentration of 126.9 ug/m<sup>3</sup>:

$$82 \text{ ug/m}^3 \times 1.5479 = 126.9 \text{ ug/m}^3$$

Since 126.9 ug/m<sup>3</sup> is below the 150 ug/m<sup>3</sup> standard, maintenance is demonstrated through 2021.

## Emissions Budget for PM10

Federal "transportation conformity" regulations provide for the use of mobile source emission budgets in making conformity determinations in the area. The emission budget serves as a ceiling on mobile source emissions that federally funded or approved transportation projects must comply or "conform" with.

This maintenance plan establishes an emission budget for the area of 1,108 pounds of PM10 per day for 2021 and beyond for the Telluride area. This budget is the total of the 2021 mobile source PM10 emissions presented in the Figure 3 table above, which includes emissions from vehicle exhaust and road dust. This budget has been adopted in the AQCC's "Ambient Air Quality Standards for the State of Colorado" regulation.

## **Monitoring Network / Verification of Continued Attainment**

The APCD will continue to operate an appropriate air quality monitoring network of NAMS and SLAMS monitors in accordance with 40 CFR Part 58 to verify the continued attainment of the PM10 NAAQS. Annual review of the NAMS/SLAMS air quality surveillance system will be conducted in accordance with 40 CFR 58.20(d) to determine whether the system continues to meet the monitoring objectives presented in Appendix D of 40 CFR Part 58.

The State will also track and document measured mobile source parameters (e.g., vehicle miles traveled, congestion, fleet mix, etc.) and new and modified stationary source permits. If these and the resulting emissions change significantly over time, the APCD will perform the appropriate studies to determine 1) whether additional and/or re-sited monitors are necessary and 2) whether mobile and stationary source emission projections are on target.

## Contingency Provisions

Section 175A(d) of the CAA requires that the maintenance plan contain contingency provisions to assure that the State will promptly correct any violation of the PM10 NAAQS standard which occurs after redesignation to attainment. Attainment/maintenance areas are not required to have preselected contingency measures, just a list of measures that could be considered for future implementation.

The contingency plan must also ensure that the contingency measures are adopted expeditiously once the need is triggered. The primary elements of the contingency plan are: 1) the list of potential contingency measures; 2) the tracking and triggering mechanisms to determine when contingency measures are needed; and 3) a description of the process for recommending and implementing the contingency measures.

The triggering of the contingency plan does not automatically require a revision of the SIP, nor is the area necessarily redesignated once again to nonattainment. Instead, the State will normally have an appropriate amount of time to correct the violation by implementing one or more contingency measures as necessary. In the event that violations continue to occur after contingency measures have been implemented, additional contingency measures will be implemented until the violations are corrected.

### **Potential Contingency Measures**

Section 175A(d) of the CAA requires the attainment/maintenance plan to include as potential contingency measures all of the control measures contained in the SIP before redesignation which were relaxed or modified through the attainment/maintenance plan. For the Telluride area, there were no control measures relaxed or modified.

The State may evaluate potential strategies in order to address any future violations in the most appropriate and cost-effective manner possible. Potential measures appropriate for the Telluride area include, but are not limited to:

- Increased street sweeping requirements
- Expanded, mandatory use of alternative de-icers
- More stringent street sand specifications
- Road paving requirements
- Woodburning restrictions
- Re-establishing new source review permitting requirements for stationary sources
- Other emission control measures appropriate for the area based on the consideration of cost-effectiveness, PM10 emission reduction potential, economic and social considerations, or other factors that the State deems appropriate.

## **Tracking and Triggering Mechanisms**

### **Tracking**

The primary tracking plan for the Telluride area consists of continuous PM10 monitoring by APCD as described above. APCD will notify EPA; the AQCC; the Colorado Department of Transportation (CDOT); and the governments for the Town of Telluride, the Town of Mountain Village and San Miguel County of any exceedance of the 24-hour NAAQS within 45 days of occurrence.

### **Triggering Contingency Measures**

An exceedance of the 24-hour PM10 NAAQS may trigger a voluntary, local process by the Town of Telluride, the Town of Mountain Village, San Miguel County and APCD to identify and evaluate potential contingency measures. However, the only federally-enforceable trigger for mandatory implementation of contingency measures shall be a violation of the NAAQS. Specifically, the three-year average of expected exceedances at a monitoring site would have to be greater than 1.0 for a violation to occur.

### **Process for Recommending and Implementing Contingency Measures**

The State will move forward with mandatory implementation of contingency measures under the SIP if a violation of the PM10 NAAQS occurs.

No more than 60 days after being notified by the APCD that a violation of the 24-hour PM10 NAAQS has occurred, the Town of Telluride, the Town of Mountain Village, and San Miguel County, in coordination with the APCD, AQCC and CDOT will initiate a process to begin evaluating potential contingency measures.

The AQCC will then hold a public hearing to consider the contingency measures recommended by the Town of Telluride, the Town of Mountain Village, San Miguel County, APCD and CDOT along with any other contingency measures the Commission believes may be appropriate to effectively address the violation. The necessary contingency measures will be adopted and implemented within one year after a violation occurs.

## **Subsequent Attainment/Maintenance Plan Revisions**

The previously approved attainment/maintenance plan addressed the period through 2012. The purpose of this attainment/maintenance plan revision is to provide for maintenance of the PM10 standard for an additional period through 2021. No additional revisions of the PM10 Attainment/Maintenance Plan are anticipated at this time. If future changes in mobile source models or other unforeseen considerations raise potential issues with maintaining the PM10 standard, the State will address the need to revise the attainment/maintenance plan at that time.