

# ***Revised Carbon Monoxide Attainment/Maintenance Plan Colorado Springs Attainment/Maintenance Area***



*10-year Revision to the Attainment/Maintenance Plan Adopted by:  
The Colorado Air Quality Control Commission, December 17, 2009*

*2<sup>nd</sup> Revision to the Attainment/Maintenance Plan Adopted by:  
The U.S. Environmental Protection Agency, September 7, 2004  
The Colorado Air Quality Control Commission, December 18, 2003  
The Pikes Peak Area Council of Governments, September 10, 2003*

*1<sup>st</sup> Revision to the Attainment/Maintenance Plan Approved by:  
The U.S. Environmental Protection Agency, December 22, 2000*

*Original Redesignation Request and Attainment/Maintenance Plan approved by:  
The U.S. Environmental Protection Agency, August 25, 1999*



Colorado Department  
of Public Health  
and Environment

Revisions prepared by:  
The Air Pollution Control Division  
Colorado Department of Public Health & Environment  
4300 Cherry Creek Drive South  
Denver, CO 80246-1530  
(303) 692-3100

## **Background**

The Environmental Protection Agency (EPA) approved a carbon monoxide (CO) redesignation request and maintenance plan for the Colorado Springs area on August 25, 1999 (64 FR 46279), which became effective on October 29, 1999. This action, which was adopted by the Colorado Air Quality Control Commission (AQCC) in January 1998, established a base (attainment) year of 1993 and an out (maintenance) year of 2010, provided for the continuation of the State's basic inspection and maintenance (I/M) program and the oxygenated gasoline program in the Colorado Springs area (as the programs existed in January 1998), established a CO emission budget of 212 tons per day (tpd) to be utilized in transportation conformity determinations, and established a contingency plan in the event a violation of the CO National Ambient Air Quality Standards (NAAQS) was measured.

On December 22, 2000, the EPA approved a revised Colorado Springs area CO attainment/maintenance plan, which became effective on February 20, 2001 (65 FR 80779). This action, which was adopted by the AQCC in February 2000, revised the attainment year from 1993 to 1990, provided for the continuation of the basic I/M program, eliminated the oxygenated gasoline program in El Paso County, revised the maintenance demonstration, revised the contingency plan, and revised the CO emission budget from 212 tpd to 270 tpd for the period 2001 and beyond.

On September 7, 2004, the EPA approved another revised Colorado Springs area CO attainment/maintenance plan, which became effective on November 8, 2004 (69 FR 54024). This action, which was adopted by the AQCC in December 2003, updated the emission inventories using the latest EPA-approved tools (including the MOBILE6.2 on-road mobile sources emission model), eliminated the basic I/M program in El Paso County from the federal State Implementation Plan (SIP), extended the maintenance year to 2015, and revised the CO emission budget from 270 tpd to 531 tpd for the period 2010 and beyond.

This revision to the attainment/maintenance plan -- considered a "limited maintenance plan" -- revises the attainment year from 1990 to 2007, updates the base year emission inventory using the latest EPA-approved tools (including the MOBILE 6.2 on-road mobile sources emission model), and extends the maintenance year through 2020. This attainment/maintenance plan confirms that the CO standard will be maintained for a second ten-year period after the original redesignation.

### **Limited Maintenance Plan Option**

Colorado is using the Limited Maintenance Plan option in preparing this second ten-year revision. The option is explained in EPA guidance of October 6, 1995, from Joseph W. Paisie, Group Leader, Integrated Policy and Strategies Group, U.S. Environmental Protection Agency.

The guidance allows for a less rigorous approach than was previously required in developing attainment/maintenance plans for CO nonattainment areas that have design

values at or below 7.65 ppm (85% of the CO NAAQS). The Colorado Springs area's design value in this plan revision is 2.3 ppm (approximately 26% of the CO NAAQS). The Colorado Springs attainment/maintenance area's design value in the first ten-year plan was 5.5 ppm. The design values were determined by using the second-highest maximum eight-hour value of eight consecutive quarters, as required by EPA guidance. The Colorado Springs attainment/maintenance area has shown a continued reduction in CO values throughout the maintenance period.

The limited maintenance plan approach requires development of an emission inventory but does not require the inventory to be projected for future years. The maintenance demonstration is considered to be satisfied if the monitoring data show that the area is meeting the air quality criteria for limited maintenance areas (at or below 7.65 ppm or 85% of the CO NAAQS).

Transportation conformity is demonstrated by showing that the transportation plans are consistent with the emission budget. The guidance for limited maintenance plans state that emissions budgets may be treated as essentially non-constraining for transportation conformity because it is unreasonable to expect that such an area will experience so much growth during the maintenance period that a violation of the CO NAAQS would result. Therefore, the "budget test" of the transportation conformity rule is met, according to the guidance.

### **Continued Attainment of the Carbon Monoxide Standard**

Attainment of the national ambient air quality standards for carbon monoxide is demonstrated when monitoring data for each site show no more than one exceedance per year of the 8-hour (9 ppm) and 1-hour (35 ppm) standards. The 8-hour standard has not been exceeded in the Colorado Springs area since 1989. The 1-hour standard has not been exceeded since 1979.

Monitoring data for 1999-2008 demonstrates that the Colorado Springs attainment/maintenance area continues to attain/maintain the national standard for carbon monoxide as required by 40 CFR 50.8. Data from 1999 through 2008 are provided to demonstrate continual attainment/maintenance since the redesignation to attainment was promulgated in 1999. This demonstration is based on quality assured monitoring data representative of the location of expected maximum concentrations of carbon monoxide in the Colorado Springs attainment/maintenance area. Data presented is the second highest maximum value recorded at the monitors. The second maximum value is used by EPA for determining compliance with the CO NAAQS.

The monitoring data presented in Table 1 verifies that the Colorado Springs attainment/maintenance area continues to attain the 8-hour NAAQS for carbon monoxide. Data recovery rates for the monitor exceeded the 75% completeness requirements for all years. All state and federal quality assurance procedures were complied with, further substantiating the validity of the measurements as indicators of ambient carbon monoxide levels in the Colorado Springs attainment/maintenance area.

### **Table 1**

**1999-2008, 8-Hour Carbon Monoxide Summary for Colorado Springs**

Standard: 8-hour = 9 ppm\*

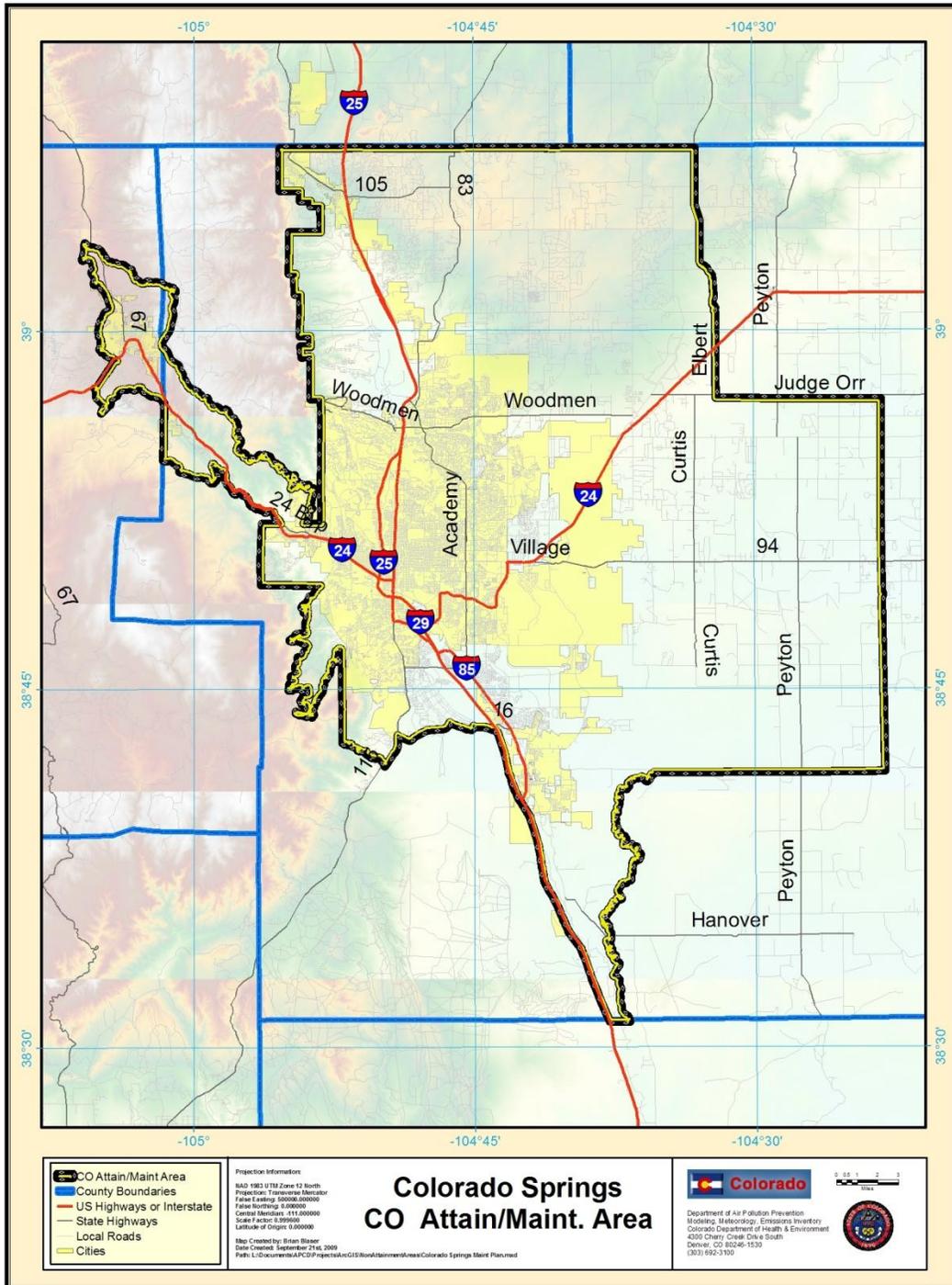
Site Name	8-Hour 2 <sup>nd</sup> Maximum (ppm)					
	1999	2000	2001	2002		
Colo. Spgs., 690 W. Hwy. 24	5.2	4.2	4.4	5.1		
Site Name	8-Hour 2 <sup>nd</sup> Maximum (ppm)					
	2003	2004	2005	2006	2007	2008
Colo. Spgs., 690 W. Hwy. 24	3.9	3.1	2.7	2.4	2.1	2.3

\*Due to mathematical rounding, a value of 9.5 ppm or greater is necessary to exceed the standard.

**Colorado Springs Carbon Monoxide Attainment/Maintenance Area Boundaries**

Beginning near the Town of Palmer Lake, at the Northwest corner of the Study Area at a point on the El Paso/Douglas County line, also on the Pike National Forest boundary, then: east along the County line to Elbert Road; south on Elbert Road to Judge Orr Road; east on Judge Orr Road to Ellicott Highway; south on Ellicott Highway to Squirrel Creek Road; west on Squirrel Creek Road to Williams Creek; south along Williams Creek to the confluence of Williams and Fountain Creeks; south along Fountain Creek to the El Paso/Pueblo County line; west on the County line to I-25; north on I-25 to Exit 132; west on Magrath to Weston Ave.; south on Weston Ave. to Barkeley Ave. and then straight on to Specker Ave.; northwest on Specker Ave. to Titus Blvd.; west on Titus Blvd. to SH-115; south on SH-115 to Rock Creek; northwest along Rock Creek to the Pike National Forest boundary; north along the Forest boundary to Old Stage Road; southwest on Old Stage Road to Gold Camp Road; north on Gold Camp Road to High Drive; north on High Drive to Lower Gold Camp Road; north on Lower Gold Camp Road to the Pike National Forest boundary; west along southern boundary of Sections 16, 17, and 18 of Township 14 South (T 14 S), Range 67 West (R 67 W); north along the western boundary of Sections 7 and 6 of T 14S R67 W; and east along the northern boundary of Sections 5 and 4 of T14S, R67W to US-24; northwest on US-24 to the Pikes Peak Toll Road; west on the Toll Road to the El Paso/Teller County line; north along the County line to Crystola Creek; west on Crystola Creek to County Road 28, north on County Road 282 to US-24; northeast on US-24 to Trout Creek Road; northwest on Trout Creek Road to Trout Creek; north along Trout Creek to the confluence of Trout and Mule Creeks; north along Mule Creek to Long Gulch; east along Long Gulch to White Gulch; east along White Gulch to Rampart Range Road; southeast on Rampart Range Road to the Pike National Forest Boundary; north along the Forest boundary to the El Paso/Douglas County line, to the point of origin.

**Figure 1. Colorado Springs Carbon Monoxide Attainment/Maintenance Area**



## Emission Inventories

The area shown in Figure 1 represents the area in which the Pikes Peak Area Council of Governments (PPACG) serves as the “Lead Planning Agency” for air quality and the “Metropolitan Planning Organization” (MPO) for transportation.

This attainment/maintenance plan revision utilizes 2007 as the attainment year for emission inventories, which is the same year from which the 2.3 ppm design value was derived. Emission inventories for a typical winter day are presented in Table 2 for the 2007 attainment year. Each inventory accounts for the emission control programs effective during that period.

The modeling domain consists of the Colorado Springs attainment/maintenance area, which encompasses the city of Colorado Springs and surrounding communities (see Figure 1). The emission inventories, included here and detailed in the Technical Support Document for this attainment/maintenance plan revision, were developed using U.S. Environmental Protection Agency (EPA) approved emissions modeling methods, including EPA’s MOBILE6 model and local VMT data for on-road mobile source emissions, EPA’s non-road model, local demographic information for area and off-road sources, and reported actual emissions for point sources. The inventory represents average daily winter emissions. The MOBILE6 and non-road model inputs represent these average daily winter conditions. Heating and wood burning emissions were apportioned from annual emission estimates by heating degree day data from the Western Regional Climate Center. Other source categories were apportioned from annual to daily by dividing by 365.

**Table 2. CARBON MONOXIDE Emission Inventory (tons per day)**

<b>Inventory Summary</b>	<b>Source Category</b>	<b>2007</b>
	Aircraft	2.92
	Biogenic	0.00
	Commercial Cooking	0.19
	Fuel Combustion	1.62
	Highway Vehicles	319.16
	Non O&G Point Sources	2.27
	Non-Road	40.45
	Railroads	0.21
	Structure Fires	0.09
	Woodburning	140.49
	<b>Grand TOTAL</b>	<b>507.39</b>

Note: Results are reported with two decimal place precision to provide representation of smaller source categories. This level of precision is not intended to suggest a level of accuracy.

## **Enforceable Control Measures for the Maintenance Period**

- Federal Motor Vehicle Emission Control tailpipe standards and regulations, including those for small engines and non-road mobile sources. Credit is taken for these federal requirements, but they are part of a federally-administered program and not a state commitment of the Colorado SIP.
- Air Quality Control Commission (AQCC) Regulation No. 3, Air Pollution Emission Notices - Permits
- AQCC Regulation No. 4, Wood Stove Standards
- AQCC Regulation Number 6, New Source Performance Standards
- AQCC Common Provisions Rule

The Common Provisions and Regulation No. 6 delineate industrial source control programs. The Common Provisions, and Parts A and B of Regulation No. 3, already are included in the approved Colorado SIP. Regulation No. 6 and Part C of Regulation No. 3 implement the federal standards of performance for new stationary sources and the federal operating permit program. The revised Colorado Springs attainment/maintenance plan makes no changes to these regulations.

## **Maintenance Demonstration**

This attainment/maintenance plan utilizes the EPA's Limited Maintenance Plan option, as explained above. The Limited Maintenance Plan approach can be utilized when an area has a design value at or below 7.65 ppm (85% of the CO NAAQS). The design value for the Colorado Springs attainment/maintenance area is 2.3 ppm (approximately 26% of the CO NAAQS), which is the highest second maximum concentration for the 2007-2008 monitoring period.

## **Transportation Conformity Determination**

Under the Limited Maintenance Plan approach, transportation conformity is demonstrated by showing that transportation plans are consistent with any existing emission budgets. When any existing budgets expire, conformity is then presumed and regional analyses and emission budget tests for transportation conformity are no longer necessary. The guidance for limited maintenance plans states that emission budgets may be treated as essentially non-constraining for transportation conformity because it is unreasonable to expect that such an area will experience so much growth during the maintenance period that a violation of the CO NAAQS would result. Therefore, the “budget test” of the transportation conformity rule is met, according to the guidance.

For the Colorado Springs Attainment/Maintenance Area, the previous EPA-approved motor vehicle emission budget was 531 tons of carbon monoxide per day for 2010 and beyond (69 FR 54019, September 7, 2004). According to the EPA’s Limited Maintenance Plan guidance and SIP and conformity requirements, the motor vehicle emission budget is to remain in place, and conformity demonstrated to this motor vehicle emission budget, through 2010. Beginning in 2011, this motor vehicle emission budget is no longer applicable and a regional emissions analysis will not need to be performed for conformity determinations for the respective long range transportation plan (LRTP) or transportation improvement program (TIP) because the 2010 motor vehicle emission budget would no longer be in the timeframe of the transportation plan. However, until such time as the Limited Maintenance Plan revision becomes Federally-effective (i.e., until EPA’s adequacy finding is effective), the PPACG will need to continue to perform the necessary regional emissions analyses for the current motor vehicle emission budget for the appropriate years in their respective LRTP and TIP conformity determinations.

While the Colorado Springs Attainment/Maintenance Area (under the Limited Maintenance Plan approach) is not subject to the budget test, the area remains subject to other transportation conformity requirements.

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

The Air Pollution Control Division (APCD) will continue to operate an appropriate air quality monitoring network in accordance with 40 CFR Part 58 to verify the continued attainment of the CO NAAQS. If measured mobile source parameters (e.g., vehicle miles traveled, congestion, fleet mix, etc.) change significantly over time, the APCD will perform the appropriate studies to determine whether additional and/or re-sited monitors are necessary. An annual review of the NAMS/SLAMS air quality surveillance system will be conducted in accordance with 40 CFR 58.10 to determine whether additional and/or re-sited monitors are necessary and to determine whether the system continues to meet the monitoring objectives presented in Appendix D of 40 CFR Part 58.

## **Contingency Plan**

Section 175A(d) of the Clean Air Act requires that the attainment/maintenance plan contain contingency provisions to assure that the State will promptly correct any violation of the CO NAAQS which occurs in the Colorado Springs attainment/maintenance area.

The contingency plan must ensure that the contingency measures are adopted expeditiously once the need is triggered. The primary elements of the contingency plan involve the tracking and triggering mechanisms to determine when contingency measures are needed and a process for implementing appropriate control measures.

### **Tracking**

The tracking plan for the Colorado Springs attainment/maintenance area consists of continuous carbon monoxide monitoring and analysis of carbon monoxide concentrations by the APCD. The APCD will notify the EPA, the AQCC, the PPACG and local governments of any exceedance of the carbon monoxide standard within 30 days of occurrence. The ongoing regional transportation planning process carried out by the PPACG in coordination with the Colorado Department of Transportation (CDOT), the APCD, the AQCC, and the EPA, will serve as another means of tracking mobile source carbon monoxide emissions into the future. Since revisions to the regions' transportation improvement programs are prepared every two years and must go through a transportation conformity determination, a process is in place to periodically review the VMT and mobile source emissions of carbon monoxide presented in this attainment/maintenance plan.

### **Triggering and Response**

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 have an appropriate time-frame to correct a violation by implementing one or more adopted contingency measures. 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.

An exceedance of the CO NAAQS (any value 9.5 ppm or greater) may trigger a voluntary, local process by the PPACG and the 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 CO NAAQS. Specifically, this would be a *second* value of 9.5 ppm or greater at the same monitor during any calendar year.

The State will move forward with mandatory implementation of contingency measures under the SIP if a violation of the CO NAAQS occurs. No more than 60 days after being notified by the APCD that a violation occurred, the PPACG - in conjunction with the APCD, the AQCC and local governments - will initiate a process to begin evaluating

potential contingency measures. The PPACG will present recommendations within 120 days of notification, and the recommended contingency measures will be presented to the AQCC within 180 days of notification.

The AQCC then will hold a public hearing to consider the recommended contingency measures, along with any other contingency measures the AQCC 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.

### **List of Potential Contingency Measures**

The PPACG and the APCD may choose one or more of the following measures to recommend to the AQCC for consideration. The measures will be designed to bring the area quickly back into compliance with the CO NAAQS.

- An basic vehicle inspection and maintenance program as set forth in AQCC Regulation No. 11, prior to modifications made as of December 18, 2003, with the addition of any on-board diagnostics components required by federal law.
- A 2.7% oxygenated gasoline program as set forth in AQCC Regulation No. 13, prior to modifications made as of February 17, 2000.
- In addition to these potential contingency measures, the State may evaluate other potential strategies, including but not limited to, nonattainment New Source Review permitting requirements, enhanced I/M, transportation control measures and mandatory wood burning restrictions, in order to address any future violations in the most appropriate and effective manner possible.

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

It is required that an attainment/maintenance plan revision be submitted to the EPA demonstrating that the carbon monoxide standard will be maintained for a second ten-year period. The purpose of this final revision is to fulfill that requirement for an additional ten years (through 2020) following the first ten-year period.

If future changes in mobile source models or other unforeseen considerations raise potential issues with the conformity process, the State will address the need to revise the attainment/maintenance plan at that time.