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PM10 REDESIGNATION REQUEST

AND MAINTENANCE PLAN FOR THE

LAMAR AREA

Adopted by the Colorado
Air Quality Control Commission
November 2001

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CHAPTER 1. INTRODUCTION

The City of Lamar, Prowers County, and the State of Colorado request redesignation to an "attainment" status for the Lamar PM10 nonattainment area. The Lamar area has been designated as nonattainment for the National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter of ten microns or less (PM10) since 1990, and the area is presently demonstrating attainment with the PM10 NAAQS. The Maintenance Plan section of this document will demonstrate that the area will be able to maintain the NAAQS through the year 2015. The benefits of redesignation to attainment status include:

1. Areas redesignated to attainment lose the stigma associated with nonattainment of the NAAQS.

2. Areas redesignated to attainment do not become "serious" nonattainment areas even if a violation of the NAAQS occurs. This means that specific control measures can be applied to address a violation without going through a rigorous federal process, where serious areas must implement mandatory control measures and be subject to numerous administrative activities.

3. Prevention of Significant Deterioration (PSD) permitting requirements replace New Source Review (NSR) permitting requirements for new and modified major stationary sources. These permitting requirements are less stringent but still protective of air quality, and are important for large industrial facilities.

This Redesignation Request and Maintenance Plan is designed to document and ensure continuing attainment of the NAAQS for PM10 in the Lamar area. This document is intended to comply with requirements of the federal Clean Air Act (CAA), and with relevant procedures and policies of the United States Environmental Protection Agency (EPA). This document is organized into three chapters. 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, *Redesignation Submittal*, is the State's request to the EPA to redesignate the Lamar area to attainment for PM10. Chapter 3, *Maintenance Plan*, is being submitted for inclusion in the federally-enforceable State implementation Plan and provides for maintenance of the PM10 standard through the year 2015.

A. BACKGROUND

1. PM10 National Ambient Air Quality Standard

In 1971, the EPA set 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 TSP standard to the PM10 NAAQS. The current PM10 NAAQS allow for a maximum annual average of 50 micrograms per cubic meter (ug/m^3) and a 24-hour average of 150 ug/m^3. The 24-hour PM10 NAAQS may not be exceeded more than three times over any three-year period.

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 standards are subject to change, based on new scientific evidence summarized in air quality criteria documents.

As stated in the Code of Federal Regulations (40 CFR Part 50.6),

The standards are attained when the expected number of days per calendar year with a 24-hour average concentration above 150 ug/m^3 is equal to or less than one (based on 3-year average), and the annual arithmetic mean concentration is less than or equal to 50 ug/m^3 (based on 3-year average), as determined by Appendix K.

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. The standard allows for a maximum annual average of 50 ug/m^3 and a 24-hour average of 150 ug/m^3. The 24-hour standard may not be exceeded more than three times over any three year period. Air quality measurements in the Lamar area satisfy this requirement, as shown in Chapter 2.

2. Lamar Nonattainment Area Classification History

Because of observed problems with air particles, monitoring of total suspended particulates (TSP) began in 1975, and continued through 1987. In 1987, based on relatively high TSP levels, the Lamar area was designated as a "Group I" area for PM10. The Lamar area was then designated a "moderate" nonattainment area in 1990 pursuant to section 107(d)(4)(B) of the CAA.

B. ORGANIZATIONS INVOLVED IN PREPARING AND APPROVING PLAN

Preparation of this PM10 Redesignation Request/Maintenance Plan was a cooperative effort of the City of Lamar, Prowers County, the Colorado Department of Transportation, and the Air Pollution Control Division (APCD) of the Colorado Department of Public Health and Environment. The EPA, through its regional office in Denver, provided policy advice and technical assistance, and is responsible for final approval of this redesignation request and maintenance plan.

C. MAINTENANCE DEMONSTRATION

The Lamar PM10 Redesignation Request and Maintenance Plan demonstrates maintenance of the National Ambient Air Quality Standards for PM10 through the year 2015. An emission inventory roll-forward analysis was completed to demonstrate that maintenance.

D. NATURAL EVENTS ACTION PLAN

Recognizing the need to protect public health in areas where PM10 exceeds the NAAQS due to natural events such as unusually high winds, a Natural Events Action Plan was developed for the Lamar area based on EPA guidance. The Plan outlines specific procedures to be taken in response to high wind events and is designed to 1) educate the public about the problem; 2) mitigate health impacts on exposed populations during events; and 3) identify and implement Best Available Control Measures (BACM) for anthropogenic sources of windblown dust. Elements of the Plan include: 1) documentation and analysis of available air quality data; 2) use of public education programs including brochure development and distribution, media releases, public meetings, and a public notification program including an advisory to suggest what actions can be taken to minimize exposure; and, 3) determination and implementation of BACM. Measures in place in the Lamar area include: the planting of a wind break of trees in an affected

area, the shutdown of a local landfill during high wind conditions, a vegetative cover of sod at a local recreational open space, the stabilization of a railroad corridor affecting local air quality, and the presence of a voluntary street sweeping program in Lamar. The Natural Events Action Plan is not part of the State Implementation Plan but was approved by EPA on June 5, 1998. The reference to the Natural Events Action Plan shall not be construed to mean that this effort is included in the SIP.

E. SOIL CONSERVATION PLANS

Though discussed in the 1993 PM10 State Implementation Plan (Lamar Element), soil conservations plans are not control measures for PM10. The soil conservation plans that control emissions from agricultural land wind erosion were not included in the SIP because these measures are federally mandated and will be implemented by the United States Department of Agricultural (59 FR 29733, col. 3 (June 9, 1994)).

CHAPTER 2. REDESIGNATION SUBMITTAL

The State of Colorado requests that the EPA redesignate the Lamar nonattainment area to attainment status with respect to the NAAQS for PM10. The following information demonstrates, as required by Section 107(d)(3)(E) of the CAA, that the Lamar area has attained the PM10 NAAQS. This is based on quality assured monitoring data representative of the location of expected maximum concentrations of PM10 in the area.

A. REQUIREMENTS FOR REDESIGNATION

Section 107(d)(3)(D) and (E) of the CAA defines the five required components of a redesignation request and maintenance plan. These components and their descriptions follow:

Attainment of the Standard

The State must show that the area is attaining the PM10 NAAQS. This demonstration must be based on monitoring data representative of the location of the expected maximum concentrations of PM10 in the nonattainment area.

State Implementation Plan (SIP) Approval

The State must demonstrate that it has a fully approved State Implementation Plan (SIP) Element for Lamar under Section 110(k) of the CAA.

Permanent and Enforceable Improvement in Air Quality

The State must demonstrate that the improvement in air quality leading to redesignation is due to permanent and federally enforceable emissions reductions.

Section 110 and Part D Requirements

The State must meet all requirements of Section 110 and Part D of the CAA. Section 110 describes general requirements of SIPs, while Part D pertains to requirements applicable to nonattainment areas.

Maintenance Plan

The State must have a fully approved maintenance plan that meets the requirements of Section 175A of the CAA. This plan must provide for the maintenance of the NAAQS for at least 10 years following redesignation, and the plan must contain a contingency plan that describes potential control measures that could be implemented to ensure continued maintenance of the PM10 NAAQS. The maintenance plan is set out in Chapter 3.

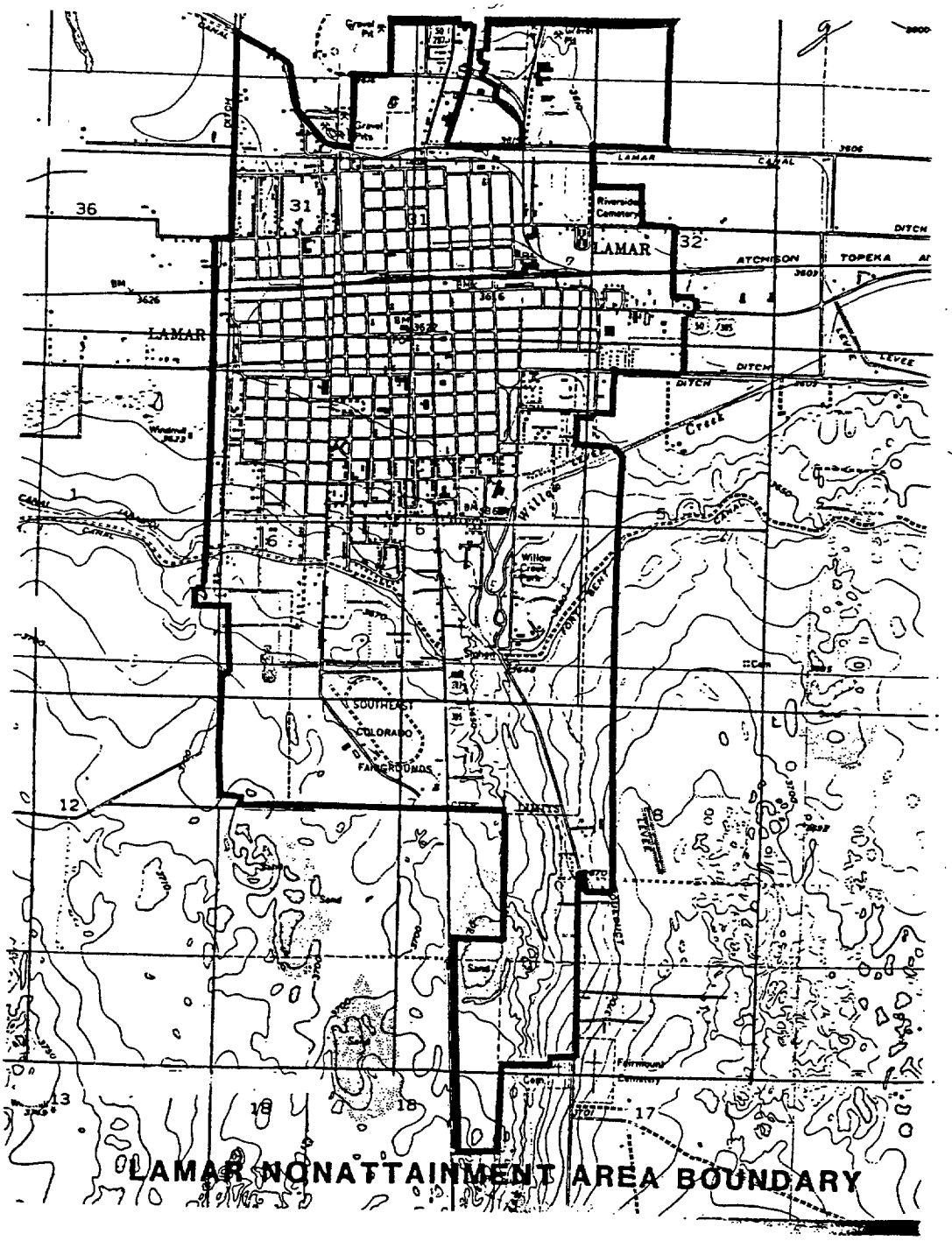
B. LAMAR ATTAINMENT/MAINTENANCE AREA BOUNDARIES

The boundary for the Lamar PM10 attainment/maintenance area is defined as follows:

The boundary for the Lamar PM10 attainment/maintenance area was officially adopted by the Colorado Air Quality Control Commission on June 20, 1991. The boundary is shown in the following figure. The non-attainment area is the city limits of Lamar as they existed on August 1. 1991. This boundary was determined to be the reasonable Lamar airshed by considering local topography, meteorology, and land use practices.

Figure 1.

Map of the Lamar Attainment/Maintenance Area



C. LAMAR HISTORICAL PERSPECTIVE

Total Suspended Particulate (TSP) monitoring began in 1975, occurring at the Lamar Power Plant and at the Lamar Municipal Complex. Historic TSP levels were the basis for Lamar being designated as a "Group I" area for the new PM10 standards, which were promulgated by the EPA in 1987. Group I locations were those areas estimated to have a greater than 95 percent probability of exceeding the new PM10 standards.

Monitoring for PM10 in Lamar began in 1985. The following tables show good quarterly data completeness for the last five years. Data recovery is calculated by calendar quarter, and the tables show the number of actual samples days divided by the number of scheduled samples days, with the resulting data recovery. Valid quarters must have at least 75 percent data recovery. Quarters not meeting this criterion are bolded in the tables below.

Lamar Power Plant PM_{10} Data Completeness
(100 N. 2nd Ave.)
1996 through 2000
(# samples collected / # scheduled samples) X 100 = (%)

Year	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Overall
1996	79/91 (87%)	90/91 (99%)	88/92 (96%)	84/92 (91%)	341/366 (93%)
1997	78/90 (87%)	87/91 (96%)	86/92 (93%)	81/92 (88%)	332/365 (91%)
1998	87/30 (>100%)	88/30 (>100%)	91/31 (>100%)	85/31 (>100%)	351/122 (>100%)
1999	79/31 (>100%)	89/31 (>100%)	92/31 (>100%)	91/30 (>100%)	351/123 (>100%)
2000	84/31 (>100%)	89/30 (>100%)	58/31 (>100%)	91/30 (>100%)	322/122 (>100%)

Lamar Municipal Complex PM_{10} Data Completeness
(104 E. Parmenter)
1996 through 2000
(# samples collected / # scheduled samples) X 100 = (%)

Year	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Overall
1996	61/91 (67%)	91/91 (100%)	52/92 (56%)	39/92 (42%)	243/366 (66%)
1997	70/90 (78%)	76/91 (84%)	78/92 (85%)	88/92 (96%)	312/365 (85%)
1998	79/30 (>100%)	83/30 (>100%)	83/31 (>100%)	78/31 (>100%)	323/122 (>100%)
1999	86/31 (>100%)	91/31 (>100%)	92/31 (>100%)	68/30 (>100%)	337/123 (>100%)
2000	85/31 (>100%)	88/30 (>100%)	81/31 (>100%)	88/30 (>100%)	342/122 (>100%)

There are three quarters of less than ideal (75%) data collection. Incomplete quarters and explanations by quarter are provided below.

1. Lamar Municipal Complex Q1 1996: 21 samples out of 91 were invalidated due to a failed audit of the samplers.

2. Lamar Municipal Complex Q3 & Q4 1996: The technician responsible for sample collection quit without notice on August 23, and it wasn't until November 14 that a new technician was hired.

The next two tables list the yearly maximum, second maximum, estimated exceedances and annual average for Lamar since 1996 at both the Lamar Power Plant and the Municipal Complex, excluding exceedances due to natural events.

Lamar PM10 Monitoring Data at Lamar Power Plant
(Annual average for those years with any quarterly data recovery less than 75% is shown in parentheses)

Year	Maximum Concentration ug/m^3	2nd Max. Concentration ug/m^3	Yearly Estimated Exceedances	3-year Avg. Estimated Exceedances	Annual Avg. Concentration ug/m^3
1996	126	80	0	0	24
1997	101	92	0	0	23
1998	137	100	0	0	26
1999	145	145	0	0	29
2000	137	136	0	0	29

Lamar PM10 Monitoring Data at Lamar Municipal Complex
(Annual average for those years with any quarterly data recovery less than 75% is shown in parentheses)

Year	Maximum Concentration ug/m^3	2nd Max. Concentration ug/m^3	Yearly Estimated Exceedances	3-year Avg. Estimated Exceedances	Annual Avg. Concentration ug/m^3
1996	145	65	0	0	(18)
1997	110	98	0	0	18
1998	89	86	0	0	21
1999	109	80	0	0	22
2000	107	102	0	0	22

During the periods identified above, there were exceedances of the NAAQS due to high winds in the Lamar area. These exceedances have been excluded from the attainment determination because there exists a Lamar Natural Events Action Plan. The high PM10 concentrations recorded on the dates

noted below were associated with unusually high wind speeds and little or no precipitation. The circumstances surrounding the Lamar exceedances have provided adequate reason for the Division and others to believe that the high wind events have caused exceedances of the NAAQS that otherwise would not have occurred. These concentrations and their associated dates are as follows:

January 17, 1996- 259 ug/m^3
April 8, 1999- 203 ug/m^3
December 17, 2000- 178 ug/m^3

EPA has concluded the above as natural events and their documentation to be adequate based on a letter dated July 3, 2001.

D. MAXIMUM CONCENTRATION MONITORING

As illustrated in this Maintenance Plan (Section 3B), some of the highest levels of PM10 emissions occur in the vicinity of the Power Plant and the central business district. This is where the majority of residential, commercial, and pedestrian activities occur. The APCD's two monitoring sites are located in the center of these high emission and concentration areas, and are believed to be representative of maximum PM10 concentrations.

E. STATE IMPLEMENTATION PLAN APPROVAL

The following presents a brief summary of the development and the approval of the Lamar PM10 nonattainment SIP Element.

1993 SIP ELEMENTS

A Lamar SIP Element was adopted by the AQCC in April 1993 and became effective April 1993. The Lamar SIP Element was approved by the EPA on June 9, 1994. The Plan did not include mandatory control measures as they were not needed to demonstrate attainment.

F. PERMANENT AND ENFORCEABLE IMPROVEMENT IN AIR QUALITY

The State must demonstrate, based on Section 107(d)(3)(E) of the CAA, that the improvement in air quality leading to attainment of the NAAQS and the redesignation request is not the result of temporary reductions in emissions or unusually favorable meteorology. For Lamar, non-attainment was largely the result of blowing dust due to high wind events. As these are naturally occurring and uncontrollable, no mandatory controls have been required for the Lamar area. The area was able to demonstrate attainment in the 1993 State Implementation Plan without additional control measures.

1. OVERVIEW

Lamar was designated a non-attainment area in 1990 due to high TSP values and high PM10 concentrations due to high wind events.

Economic conditions are clearly not responsible for relatively low PM concentrations in the Lamar area. Over the last ten years, the area has experienced growth while at the same time experienced PM10 concentrations below the NAAQS. The Colorado State Demographer's Office reports that between 1990 and 2000, the population of Lamar grew 0.61% annually and the population of Prowers County grew by 0.72% annually. A review of the Colorado Department of Transportation's (CDOT) information for Highway 287 in the Lamar area indicates average daily traffic grows annually at a rate of nearly 1%. During this period of growth, attainment of the PM10 NAAQS was demonstrated, and few concentrations above 100 ug/m^3 were measured. High wind events resulted in exceedances of the PM10 NAAQS, but these natural events are excluded from determination of non-attainment/attainment.

Favorable meteorology is also an unlikely reason why the area remained in attainment of the NAAQS (excluding the natural events that were measured in the area). Although winter and spring meteorological conditions are highly variable, there is no evidence to suggest that meteorological conditions experienced in the 1990's have not been "typical" (though it is difficult to make concrete conclusions based on short-term meteorological records). The APCD concludes that the good air quality in the Lamar area is the result of the implementation of emission reduction measures, not meteorological fluctuations.

2. CONTROL MEASURES

The following describes the control measures that have been implemented in the Lamar area.

a. Control of Emissions from Stationary Sources

Although there are few stationary sources located in the Lamar attainment/maintenance area, the State's comprehensive permit rules will limit emissions from any new source that may, in the future, locate in the area. These rules include: 1) Regulation No. 1, "Emission Control Regulation for Particulates, Smoke, Carbon Monoxide and Sulfur Oxides;" 2) Regulation No. 3, "Air Pollution Emission Notices, Construction Permits and Fees, Operating Permits, and Including the Prevention of Significant Deterioration;" 3) Regulation No. 4, "New Woodstoves and Woodburning Appliance Use During High Pollution Days;" 4) Regulation No. 6, "Standards of Performance for New Stationary Sources;" and 5) the "Common Provisions" regulation.

The Common Provisions, and Parts A and B of Regulation No. 3, are already included in the approved State-wide SIP. Regulation No. 6 implements the federal standards of performance for new stationary sources. The maintenance plan makes no changes to these regulations. This reference to Regulation No. 6 shall not be construed to mean that this regulation is included in the SIP.

Regulation No. 1 applies to fugitive dust, fuel burning equipment, incinerators, and certain manufacturing processes as potential sources of PM10.

As indicated above, emissions from new or modified major stationary sources emissions of PM10 are controlled under Regulation No. 3's nonattainment area new source review (NSR) permitting requirements. The NSR provisions require all new and modified major stationary sources to apply emission control equipment that achieves the "lowest achievable emission rate" (LAER) and to obtain emission offsets from other stationary sources of PM10. Once this redesignation request and maintenance plan has been approved by the EPA, the prevention of significant deterioration (PSD) permitting requirements become effective. The PSD requirements are a relaxation from the NSR requirements, as LAER becomes the less stringent "best available control technology" (BACT), and offsets are not required. The application of these provisions is possible, but not foreseen, in the Lamar area.

b. Federal Motor Vehicle Emission Control Program

The FMVECP has reduced PM10 emissions through a continuing process of requiring diesel engine manufacturers to produce new vehicles that meet tighter and tighter emission standards. As older, higher emitting diesel vehicles are replaced with newer vehicles, PM10 emissions in the Lamar area will be reduced.

c. Voluntary and State-Only Measures

In addition to the measures discussed above, there are other activities that result in the reduction of PM10 emissions. Some notable examples include:

- The City of Lamar has historically cleaned their streets in town throughout the winter and spring using street sweepers. The frequency of this voluntary effort is determined by weather.
- The City of Lamar and areas immediately surrounding require that new development have paved streets.
- Any owner or operator responsible for the construction or maintenance of any existing or new unpaved roadway which has vehicle traffic exceeding 200 vehicles per day in the attainment/maintenance area and surrounding areas must stabilize the roadway in order to minimize fugitive dust emissions. These State-wide requirements are defined in detail in the AQCC's Regulation No. 1.

These strategies are considered to be voluntary local initiatives and State-only requirements, and are intended to reduce PM10 emissions. These strategies are not intended to be federally enforceable.

G. CLEAN AIR ACT SECTION 110 AND PART D REQUIREMENTS

For the purposes of redesignation, all of the requirements of CAA Section 110 and Part D applicable to the area must first be met. The requirements of Section 110 and Part D applicable to the Lamar area are already included in the SIP for Colorado and have already been approved by EPA. In particular, see EPA's final approval actions for the Lamar SIP Element (Federal Register, Vol. 59, No. 110, June 9, 1994).

CHAPTER 3. MAINTENANCE PLAN

A. REQUIREMENTS

Section 107(d)(3)(E) of the CAA provides that for an area to be redesignated to an attainment classification, EPA must fully approve a maintenance plan which meets the requirements of CAA Section 175A. The maintenance plan will constitute a SIP revision and must provide for maintenance of the relevant NAAQS in the area for at least ten years after redesignation. Since the requirement is for ten years after redesignation, some lead time for the EPA approval process (up to 18 months per CAA Section 107(d)(3)(D)) should be considered in establishing the maintenance year, which the State determines to be 2015. An additional requirement (Section 175A(d)) is the submittal of a SIP revision eight years after the original redesignation request/maintenance plan is approved that provides for maintenance of the NAAQS for an additional ten years following the first ten-year period. The State of Colorado commits to submit such a revised maintenance plan as required by the CAA and EPA policy.

Section 175A further states that the plan shall contain such additional control measures to demonstrate long-term maintenance. At this time, additional controls are not necessary. The maintenance plan shall contain a contingency plan to ensure the prompt correction of any unforeseen violation of the PM10 NAAQS. Failure to maintain the NAAQS and triggering of the contingency plan will not necessitate a revision of the SIP Element, unless required by the EPA Administrator, as stated in CAA Section 175A(d).

The provisions that are addressed in this maintenance plan include emission inventories (for a base year and a future year), a maintenance demonstration, an emission budget, an approved monitoring network, verification of continued attainment, and a contingency plan.

B. EMISSION INVENTORIES

The following presents PM10 emission inventories for the 2000 attainment year and the 2015 maintenance year. These inventories reflect the base and projected conditions in the Lamar area.

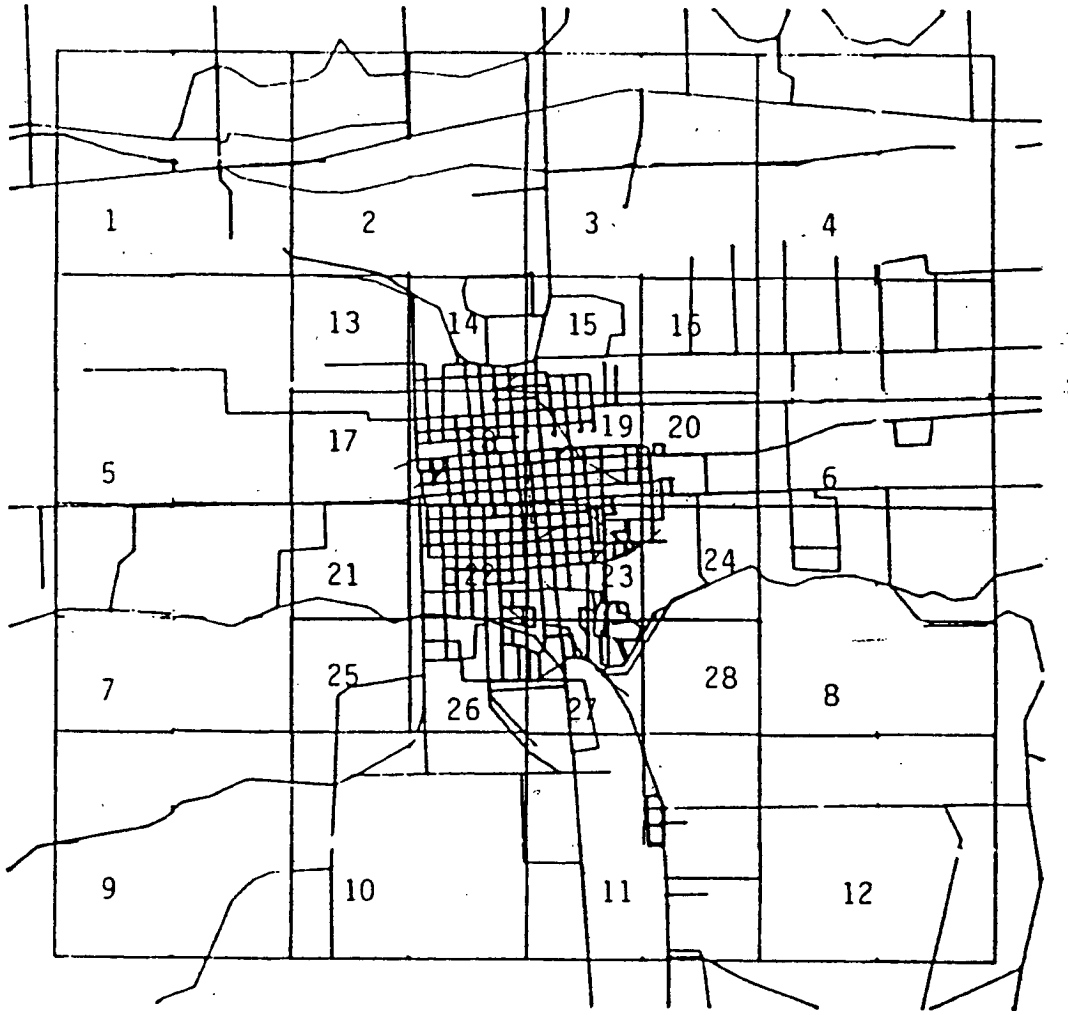
1. 2000 Emission Inventory

The 2000 PM10 emission inventory for the Lamar attainment/maintenance area is presented below. This inventory incorporates the emission estimates for woodburning (fireplaces and wood stoves) for the year 1997 that are contained in the latest version of the nonattainment area SIP Element adopted in 1993 and rolled forward to 2000. Mobile exhaust emissions for the year 1997 were also taken from the 1993 SIP Element and adjusted up to 2000 levels. Highway re-entrained road dust emissions for the year 2000 were developed using the latest traffic counts from CDOT as well as revised emission factors that incorporate the latest EPA methods for determining paved road emissions. Arterial and local street re-entrained emissions for 2000 were determined using VMT information contained in the 1993 SIP Element (grown to 2000 by appropriate growth rates) as well as the latest EPA methods for determining paved road emissions and measured silt loadings from the area. Finally, gravel road emissions were developed using VMT information contained in the 1993 SIP Element (grown to 2000 by appropriate growth rates) as well as EPA methods for determining gravel road emissions. VMT was also adjusted using actual Colorado Department of Transportation traffic counts (see the Technical Support Document for more detail), where ADT was increased 18.7% to account for initial under-prediction in 1993 SIP effort and as confirmed from actual CDOT traffic counts. All emission estimates were prepared by using EPA-approved methods and assigned to geographic grids. The 28 grids from the 1993 SIP element were preserved for consistency, and the grid system map illustrates these grids. As noted, each of the outer grids, 1-12, cover four (4) square kilometers and the city center grids, 13-28, each cover one (1) square kilometer in area. Grids 1-12 are rural in land use with the majority of the emissions coming from wind related fugitive dust emissions from open ground. Areas to the south of Lamar (grids 9-12) are dominated by undeveloped natural sand dunes or open ground with little vegetative cover. Grid areas to the east, west, and north of the downtown area (grids 1-8) are dominated by farmed land with a large feedlot located in grid 8, immediately east of Lamar.

The following table presents the 2000 daily PM10 emission estimates for each source category in pounds per day. Detailed explanations of the methods used to determine these emissions may be found in the Technical Support Document for this maintenance plan.

LAMAR PM-10 SIP AREA

EMISSION INVENTORY GRID SYSTEM



2000 PM10 Emission Inventory for the Lamar Attainment/Maintenance Area (lbs./day)

Grid	High-way	Arter-ials	Local Roads	Un-Paved Roads	Veh. Exh.	Fire-places	Wood-stoves	Tilling	Wind Erosion / Feedlot	Point sources	Grain Elev.	Storage Piles	Total
1	331.3	0	59.5	.4	3.7	2.7	3.4	4.7	450.0	0	0	0	855.66
2	315.2	0	66.5	.4	3.6	3.0	3.9	2.9	315.0	0	0	6.3	716.76
3	424.4	0	105.7	.4	3.5	4.7	6.1	2.2	239.7	0	0	0	786.66
4	0	0	79.3	.7	.6	3.6	4.7	5.1	547.7	0	0	0	641.68
5	0	0	86.3	1.4	.5	3.9	5.0	3.7	467.3	0	0	0	568.1
6	134.4	0	187.2	1.7	2.5	8.4	11.0	7.3	812.7	0	0	0	1165.2
7	0	0	86.3	1.0	.5	3.9	5.0	1.0	222.2	0	0	0	319.9
8	0	0	118.9	2.4	.7	5.3	6.9	0	978.0	0	0	0	1112.2
9	0	0	46.0	0	.3	2.1	2.7	0	0	0	0	0	51.1
10	0	0	66.5	1.4	.4	3.0	3.9	0	0	0	0	0	75.2
11	172.1	0	53.3	1.4	3.4	2.4	3.1	0	0	0	0	0	235.7
12	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	72.9	2.7	.5	3.3	4.3	0.4	46.3	0	0	0	130.4
14	0	80.9	26.6	2.0	1.0	7.2	9.3	0	0	0	0	0	127
15	190.8	0	19.7	2.4	2.8	0.9	1.1	.2	31.4	1265.2	1.3	15.4	1531.2
16	0	0	39.6	0	.3	1.8	2.3	.5	61.2	0	0	0	105.7
17	0	0	42.2	0	.3	2.0	2.5	.1	15.7	0	0	0	62.8
18	0	129.9	374.7	0	3.6	26.5	34.2	0	0	0	0.3	0	569.17
19	439.1	74.2	234.5	.7	6.9	16.1	20.7	0	0	4.9	0	0	797.1
20	33.4	0	23.6	0	.5	1.0	1.4	.1	21.8	0	0	0	81.8
21	0	0	59.5	.7	.4	2.7	3.4	.1	16.5	0	0	0	83.3
22	0	161.8	492.3	0	4.7	34.2	44.2	0	0	0	0	0	737.2
23	289.8	178.9	287.1	0	6.6	26.1	33.6	0.1	5.0	0	0	0	827.11
24	0	0	58.2	1.4	.4	2.7	3.4	0	0	0	0	0	66.1
25	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	170.3	445.0	3.1	4.5	32.6	42.1	0	0	0	0	0	697.6
27	199.3	70.1	63.6	0	3.3	8.0	10.4	0	0	1.2	0	0	355.85
28	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2530	866	3195	24	56	208	269	28	4231	1271	2	22	12700

2. 2015 Emission Inventory

The following table presents the 2015 daily emission estimates for each source category in pounds per day. The 2000 fugitive dust emissions from paved and unpaved roads were increased by just over 13 percent based on long-term traffic projections from CDOT (10 - 20% increase over a 20-year period) through 2015. The road paving that the City of Lamar plans on completing is not assumed in the 2015 inventory as the paving is considered voluntary and not enforceable by the State. The 2000 emissions from woodburning were increased by 9.6%, which was determined from City of Lamar population projections obtained from the Colorado State Demographer's Office. Emissions from vehicle exhaust were capped at year 2000 levels. This cap is based on the modeled mobile exhaust emissions from the Pagosa Springs PM10 Maintenance Plan that showed exhaust emissions remain relatively flat from 1994 to 2010 (13.3 lbs/day and 12.1 lbs/day, respectively) even as VMT steadily increased. In addition, vehicle emissions do not change much using the updated modeling for small towns. Thus, Pagosa Springs is a good surrogate for Lamar. Detailed information on these growth rates may be found in the Technical Support Document.

2015 PM10 Emissions Inventory for the Lamar Attainment/Maintenance Area (lbs/day)

Grid	High-way	Arter-ials	Local	Un-paved	Veh. Exh.	Fire-places	Wood stove	Till-ing	Wind Erosion/ Feedlot	Point Sources	Grain Elev.	Storage Piles	Total
1	367.1	0	68.2	.4	3.7	2.9	3.7	4.7	450.0	0	0	0	901.4
2	349.9	0	76.3	.4	3.6	3.3	4.2	2.9	315.0	0	0	6.3	761.9
3	455.8	0	121.2	.4	3.5	5.2	6.6	2.2	239.7	0	0	0	834.6
4	0	0	90.9	.8	.5	4.0	5.2	5.1	547.7	0	0	0	654.2
5	0	0	99.0	1.6	.5	4.3	5.5	3.7	467.3	0	0	0	581.9
6	144.3	0	214.7	2	2.5	9.2	12.1	7.3	812.7	0	0	0	1204.8
7	0	0	99.0	1.2	.5	4.3	5.4	1.0	222.2	0	0	0	333.7
8	0	0	136.4	2.7	.7	5.9	7.6	0	978.0	0	0	0	1131.4
9	0	0	52.8	0	.3	2.3	3.0	0	0	0	0	0	58.4
10	0	0	76.3	1.6	.4	3.2	4.2	0	0	0	0	0	85.7
11	197.3	0	61.1	1.6	3.4	2.6	3.4	0	0	0	0	0	269.5
12	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	83.6	3.1	.5	3.6	4.7	0.4	46.3	0	0	0	142.2
14	0	92.8	30.8	2.3	1.0	8.0	10.1	0	0	0	0	0	145.0
15	204.9	0	22.6	2.7	2.8	1.0	1.2	.2	31.4	1274.3	1.5	15.4	1556.8
16	0	0	45.5	0	.3	2.0	2.5	.5	61.2	0	0	0	111.8
17	0	0	48.4	0	.3	2.1	2.7	.1	15.7	0	0	0	69.4
18	0	149	429.8	0	3.6	29.0	37.5	0	0	0	0.3	0	648.9
19	476	85.1	269	.8	6.9	17.6	22.7	0	0	5.3	0	0	883.4
20	35.8	0	27	0	.5	1.1	1.5	.1	21.8	0	0	0	87.8
21	0	0	68.2	.8	.4	2.9	3.7	.1	16.5	0	0	0	92.6
22	0	185.6	564.7	0	4.7	37.5	48.4	0	0	0	0	0	840.9
23	332.4	205	329.3	0	6.6	28.6	36.8	0.1	5.0	0	0	0	943.8
24	0	0	66.7	1.6	.4	2.9	3.7	0	0	0	0	0	75.3
25	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	195.4	510.4	3.5	4.5	35.8	46.2	0	0	0	0	0	795.8
27	228.6	80.4	72.9	0	3.3	8.8	11.4	0	0	1.3	0	0	406.7
28	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2792	993	3665	28	56	228	294	28	4231	1281	2	22	13620

3. Intermittent Years' Emission Inventories

To demonstrate compliance of the PM10 NAAQS through 2015, emission inventories for the years 2005 and 2010 have been prepared and are as follows:

2005 and 2010 PM10 Emissions Inventory for the Lamar Attainment/Maintenance Area (lbs/day)

Year	Mobile	Fire-place	Wood stove	Till-ing	Wind Erosion/ Feedlot	Point Sources	Grain Elev.	Storage Piles	Total
2005	6982	214	277	28	4231	1273	2	22	13,029
2010	7255	221	285	28	4231	1276	2	22	13,320

4. Stationary Sources Inventory

To demonstrate the PM10 contribution from stationary sources, the following stationary source emission inventory is included for base year 2000:

Source	Emissions (lbs/day)
Carder	1170.6
Utility Board of Lamar	44.9
SE Colorado Co-Op	0.5
Valco	1.7
Neoplan	4.2
Fiberglass Component	0.3
All Rite	28.2
Hog Slat	15.3
City of Lamar	4.9
Lamar Community College	1.2

C. LAMAR DESIGN VALUE

The "design value" is the critical air quality value from which the maintenance plan is based. The design value, and the conditions that occur on the day which it was measured, are utilized to develop emission inventories and serve as a baseline for modeling ambient concentrations into the future. PM10 values are discussed in terms of the 24-hour PM10 NAAQS, rather than the annual NAAQS, because the 24-hour NAAQS is the standard of concern and the annual NAAQS has never been exceeded. The selection of this design value utilized EPA's table look-up method from EPA's "PM10 SIP Development Guideline" document (for the three most recent years of data). Based on the number of samples collected during the 1998 - 2000 period (1,024 samples at Lamar Power Plant and 1,002 samples at the Municipal Complex site and 2,026 samples total) by the EPA reference method hi-vol samplers, the third

highest concentration should be the design value, according to this guidance. The five highest concentrations measured during the period 1998 –2000, excluding natural event concentrations, are:

145 ug/m^3 – January 26, 1999
145 ug/m^3 – October 29, 1999
137 ug/m^3 – April 11, 1998
137 ug/m^3 - December 18, 2000
136 ug/m^3 – May 31, 2000

Because the third highest concentration is appropriate for the design value selection, a value of 137 ug/m^3 is selected as the design value.

D. MAINTENANCE DEMONSTRATION

In order for this redesignation request to be complete and approvable, the CAA requires that the maintenance plan provide for maintenance of the PM10 NAAQS for at least 10 years following EPA's approval of the plan. As stated earlier in this document, attainment of the 24-hour and annual PM10 NAAQS has been demonstrated in the Lamar area, and this maintenance demonstration will demonstrate continued attainment, or maintenance, of the 24-hour NAAQS through the year 2015. Because there have never been exceedances of the annual standard in Lamar (beside natural event concentrations), 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.

Data presented throughout this document are utilized to demonstrate maintenance of the PM10 NAAQS for the Lamar area. If this 2015 projection is below the 24-hour PM10 NAAQS of 150 ug/m^3, then maintenance is demonstrated. As demonstrated below, the 2015 maintenance concentration for the Lamar attainment/maintenance area is **145.4** ug/m^3.

Emission Inventory Roll-Forward Analysis

Since the 1993 SIP Element for Lamar relied upon the use of the emission inventory roll-forward analysis to demonstrate maintenance, the same approach is used below.

Subtract the Background Concentration from the Design Value Concentration:

The background concentration is subtracted from the design day concentration of 137 ug/m^3 because the background concentration would remain if all emissions in the emissions inventory were reduced to zero. A background PM10 concentration of 21 ug/m^3 is assumed to occur on any given day in the area, as described in Section 8.1 of the 1993 SIP Element.

Design Day Concentration:	137 ug/m^3
Background Concentration:	- 21 ug/m^3
	116 ug/m^3

The following presents the emissions inventory roll-forward approach that was used to calculate the 2015 maintenance concentration:

Design day concentration (137 ug/m^3) less background (21 ug/m^3) = 116 ug/m^3

$$\frac{116 \text{ ug/m}^3}{12{,}700 \text{ lbs/day}} = \frac{X}{13{,}620 \text{ lbs/day}}$$

where x= 124.4 ug/m^3

adding background (21 ug/m^3), 124. 4 ug/m^3 + 21 ug/m^3= 145.4 ug/m^3, demonstrating maintenance of the PM10 NAAQS in the year 2015.

E. MAINTENANCE PLAN CONTROL MEASURES

There are no mandatory control measures adopted specifically for the Lamar area because the area could demonstrate long-term maintenance of the PM10 NAAQS without specific controls. The Maintenance Plan eliminates from the SIP mandatory contingency measures as these are not required for re-designated areas. The stationary source controls in the Common Provisions, 5 CCR 1001-2; Regulation No. 1, Emission Control Regulation for Particulates, Smoke, Carbon Monoxide and Sulfur Oxides; Regulation No. 3, Air Contaminant Emissions Notices, 5 CCR 1001-5; Regulation No. 4, New Woodstoves and Woodburning Appliance Use During High Pollution Days; Regulation No. 6, Standards of Performance for New Stationary Sources, 5 CCR 1001-8; and certain aspects of the Lamar Natural Events Action Plan serve to control PM10 emissions for stationary sources. The Common Provisions, and Parts A and B of Regulation No. 3, are already included in the approved SIP. Regulation No. 6 implements the federal standards of performance for new stationary sources, but is not part of the SIP.

This maintenance plan makes no changes to these regulations. This reference to Regulation No. 6 shall not be construed to mean that this regulation is included in the SIP.

F. EMISSION BUDGET

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 7,534 lbs./day for 2015 and beyond for the modeling area. This budget is the total of the 2015 mobile source PM10 emissions presented in B.2 above, which includes emissions from vehicle exhaust, highways, paved arterial and local roads, and gravel roads. This budget has been adopted in the AQCC's "Ambient Air Quality Standards for the State of Colorado" regulation.

G. MONITORING NETWORK/VERIFICATION OF CONTINUED ATTAINMENT

The APCD has monitored ambient PM10 concentrations in the Lamar area since 1985. The APCD has operated, and will continue to operate, the Lamar PM10 monitoring network in full accordance with the federal provisions of 40 CFR Part 58 and the EPA-approved Colorado Monitoring SIP Element. The APCD will also analyze the monitoring data to verify continued attainment of the PM10 NAAQS. This information will provide the necessary information to determine whether the Lamar area continues to attain the PM10 NAAQS. Detailed information regarding the State's monitoring efforts and historical monitoring data can be found in Chapter 2 of this document.

In addition, the State will track the progress of the maintenance plan through a periodic review (every three years) of the assumptions made in the emissions inventories to assure continued maintenance of the PM10 NAAQS. A revised inventory will be developed if assumptions indicate a significant change in the factor(s) used to develop the attainment inventory.

H. CONTINGENCY PLAN

Section 175(A)(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 that may occur after the

redesignation of the area to attainment. EPA's redesignation guidance notes that the State is not required to have fully adopted contingency measures that will take effect without further action by the State. However, the contingency plan should ensure that contingency measures are adopted expediently once the need is triggered. The primary elements of the contingency plan involve the tracking and triggering mechanisms to determine when contingency measures would be needed and a process for implementing appropriate control measures.

1. Tracking

The tracking plan for the Lamar area will consist of monitoring and analyzing PM10 concentrations. In accordance with 40 CFR Part 58, Colorado will continue to operate and maintain the Lamar PM10 monitoring network.

2. Trigger 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 normally have an appropriate time-frame to correct the violation with implementation of one or more adopted contingency measures. In the event that violations continue to occur, additional contingency measures will be adopted until the violations are corrected.

Upon notification of a PM10 NAAQS exceedance not attributed to natural high wind events and blowing dust, the APCD and local government staff in the Lamar area will develop appropriate contingency measure(s) intended to prevent or correct a violation of the PM10 standard. Information about historical exceedances of the standard, the meteorological conditions related to the recent exceedance(s), and the most recent estimates of growth and emissions will be reviewed. The possibility that an exceptional event occurred will also be evaluated. (Notification to EPA, and to the local governments in the Lamar area, of any exceedance will generally occur within 30 days, but no later than 45 days.) This process will be completed within six months of the exceedance notification. If a violation of the PM10 NAAQS has occurred, a public hearing process at the State and local level will begin. If the AQCC agrees that the implementation of local measures will prevent further exceedances or violations, the AQCC may endorse or approve of the local measures without adopting State requirements. If, however, the AQCC finds locally adopted contingency measures to be inadequate, the AQCC will adopt State enforceable measures as deemed necessary to prevent additional exceedances or violations. Contingency measures will be adopted and fully implemented within one year of a PM10 NAAQS

violation. Any State-enforceable measures will become part of the next revised maintenance plan, submitted to the Colorado Legislature and EPA for approval.

3. Potential Contingency Measures

The APCD and local government staff may choose one or more of the following contingency measures to recommend to local officials and the AQCC for consideration. Contingency measures will be selected that bring the area back into compliance with the PM10 NAAQS and that specifically meet the needs of the Lamar area. It is likely that no federal or State General Fund monies will be available to fund the implementation of the selected contingency measure(s). Most, if not all, of the costs will be borne by local citizens and governments, local industries, and any State government agency implementing a contingency measure.

- Street sweeping requirements
- Road paving requirements
- Street sand specifications
- Woodburning restrictions
- Use of alternative de-icers
- Re-establishing new source review permitting requirements for stationary sources
- Controls at existing stationary sources
- Transportation control measures designed to reduce vehicle miles traveled
- 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

I. SUBSEQUENT MAINTENANCE PLAN REVISIONS

As stated above, it is required that a maintenance plan revision be submitted to the EPA eight years after the original redesignation request/maintenance plan is approved. This revision is to provide for maintenance of the NAAQS for an additional ten years following the first ten-year period. The State of Colorado commits to prepare and submit a revised maintenance plan as required.