SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

FINAL

2002 COACHELLA VALLEY PM10 STATE IMPLEMENTATION PLAN

(A Supplement to the 1996 Coachella Valley PM10 Attainment Redesignation Request and Maintenance Plan)

June 25, 2002

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LIST OF ACRONYMS AND ABBREVIATIONS

APCD	Air Pollution Control District
AQMD	South Coast Air Quality Management District
AQMP	Air Quality Management Plan
BACM	Best Available Control Measure
Basin	South Coast Air Basin
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CVAG	Coachella Valley Association of Governments
MSM	Most Stringent Measure
NAAQS	National Ambient Air Quality Standards
NEP	Natural Events Policy
NEAP	Natural Events Action Plan
PM10	Particulate Matter with Aerodynamic Diameter less than 10 Microns
RACM	Reasonably Available Control Measure
SIP	State Implementation Plan
U.S. EPA	U.S. Environmental Protection Agency

RESOLUTION NO. 02-21

A Resolution of the South Coast Air Quality Management District Governing Board certifying the Final Negative Declaration (ND) for the 2002 Coachella Valley PM10 State Implementation Plan and adopting the 2002 Coachella Valley PM10 State Implementation Plan, referred to as the "2002 CVSIP."

WHEREAS, the South Coast Air Quality Management District finds and determines that the proposed 2002 CVSIP is considered a "project" pursuant to the California Environmental Quality Act (CEQA); and

WHEREAS, because the 2002 CVSIP is a Plan, it is not subject to the South Coast Air Quality Management District's certified regulatory program, but instead is subject to standard CEQA regulatory requirements; and

WHEREAS, the South Coast Air Quality Management District has prepared a ND, setting forth the potential adverse environmental impacts of adopting and implementing the proposed 2002 CVSIP, and that the ND has received public comment to which staff has prepared responses, such that it is now a Final ND; and

WHEREAS, the adequacy of the Final ND, including responses to comments, has been determined by the South Coast Air Quality Management District Governing Board prior to its certification; and

WHEREAS, it was concluded in the ND that implementing the proposed 2002 CVSIP would not generate any significant adverse environmental impacts; and

WHEREAS, the Coachella Valley is currently classified as "serious" non-attainment for fine particulate matter (PM10) in accordance with the federal Clean Air Act (CAA); and

WHEREAS, PM10 exceedances in the Coachella Valley are primarily due to locally generated sources of fugitive dust (e.g., natural windblown sources, agricultural activities, construction activities, and vehicular travel on paved and unpaved roads) and not as a result of secondary PM10 generated from PM10 precursor gaseous emissions; and

WHEREAS, the Riverside County portion of the Salton Sea Desert Air Basin non-attainment area that includes the Coachella Valley is under the South Coast Air Quality Management District ("District") jurisdiction under the provisions of Health and Safety Code Section 40413; and

WHEREAS, the District and local Coachella Valley jurisdictions have a demonstrated history of implementing PM10 control strategies; and

WHEREAS, after applying the U.S. Environmental Protection Agency (U.S. EPA) Natural Events Policy, the Coachella Valley did not experience any violations of the federal PM10 National Ambient Air Quality Standards (NAAQS) during the period 1993 through 1998; and

WHEREAS, despite previous outstanding efforts, the Coachella Valley exceeded the federal annual average PM10 NAAQS during the period 1999 through 2001, which demonstrates that the 2001 attainment date is impracticable; and

WHEREAS, areas classified as serious non-attainment are required to attain the federal PM10 NAAQS for PM10 by December 31, 2001; and

WHEREAS, the District is committed to comply with the requirements of the federal CAA; and

WHEREAS, federal CAA Section 188 (e) allows a one-time extension of a serious PM10 non-attainment date for up to five years provided that: 1) previous SIP commitments have been met, 2) demonstration of attainment by December 31, 2001 is impracticable, 3) most stringent measures are implemented, and 4) attainment is achieved by the most expeditious alternative date practicable; and

WHEREAS, the 2002 CVSIP demonstrates that the Coachella Valley will attain the federal PM10 NAAQS by 2006; and

WHEREAS, the 2002 CVSIP, in conjunction with previously submitted planning documents and PM10 control programs, meets all CAA requirements to support an extension of the Coachella Valley PM10 attainment date to December 31, 2006; and

WHEREAS, 40 CFR Part 93 requires that emission budgets for criteria air pollutants be specified in the State Implementation Plan (SIP) for transportation conformity use; and

WHEREAS, 40 CFR Part 93 does not require emission budgets beyond the criteria air pollutant attainment year; and

WHEREAS, the Governing Board of the South Coast Air Quality Management District voting on this resolution has reviewed and considered the ND; and

WHEREAS, a public workshop was held by the District in the Coachella Valley on May 23, 2002, in order to solicit public input on the 2002 CVSIP; and

WHEREAS, a notice of public hearing was released and published 30 days prior to June 21, 2002; and

WHEREAS, on June 21, 2002, the South Coast Air Quality Management District duly held a public hearing to consider the certification of the Final ND and the adoption of the 2002 CVSIP; and

WHEREAS, the record of these proceedings is located at South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California, 91765, and the custodian of the record is the Clerk of the Board.

NOW, THEREFORE, BE IT RESOLVED, that the South Coast Air Quality Management District Governing Board hereby certifies that the Final ND for the 2002 CVSIP has been completed in compliance with the requirements of CEQA and finds that the Final ND, including response to comments, is adequate and thereby approves it; and

BE IT FURTHER RESOLVED, that because no significant adverse impacts were identified in the ND from implementing the proposed 2002 CVSIP, a Statement of Findings pursuant to CEQA Guidelines §15091, a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093, and a Mitigation Monitoring Plan pursuant to CEQA Guidelines §15097 were not required; and

BE IT FURTHER RESOLVED, that the South Coast Air Quality Management District Governing Board adopts the 2002 CVSIP dated June 2002, and all appendices attached thereto; and

BE IT FURTHER RESOLVED, that the South Coast Air Quality Management District Governing Board directs the Executive Officer to forward a copy of this Resolution, the Final 2002 CVSIP, and the Final ND to the California Air Resources Board (CARB) and U.S. EPA for concurrent review; and

BE IT FURTHER RESOLVED, that the Executive Officer is hereby directed to work with CARB and U.S. EPA to ensure expeditious approval of the 2002 CVSIP; and

BE IT FURTHER RESOLVED, that the South Coast Air Quality Management District Governing Board directs the Executive Officer to update the 2002 CVSIP, including emissions budgets in 2003, using the latest approved motor vehicle emissions model and planning assumptions;

BE IT FURTHER RESOLVED, that the South Coast Air Quality Management District Governing Board requests that the U.S. EPA approve the District's commitment to forward to the CARB for review and submittal to the U.S. EPA as a revision to the State Implementation Plan by 2003 the update to the PM10 emissions inventory portion of the 2002 CVSIP, including revised emissions budgets using the latest approved motor vehicle emissions model and planning assumptions; and

BE IT FURTHER RESOLVED, that the South Coast Air Quality Management District Governing Board requests that the U.S. EPA approve the emissions budgets based on the 2002 CVSIP for use only until the U.S. EPA finds adequate the revised budgets for the same years submitted as part of the 2003 revision to the 2002 CVSIP; and

BE IT FURTHER RESOLVED, that the South Coast Air Quality Management District Governing Board finds that the emission budgets are "consistent with applicable requirements for reasonable further progress, attainment, or maintenance (whichever is relevant to the given implementation plan submission);" pursuant to 40 CFR 93.118(e)(4)(iv); and

BE IT FURTHER RESOLVED, that the South Coast Air Quality Management District Governing Board directs the Executive Officer to appropriate sufficient staff resources to ensure timely development and implementation of the proposed control measures and adequate inspection of fugitive dust sources and enforcement of adopted local ordinances and District rules.

AYES:	Antonovich, Bernson, Carney, Glover, Loveridge, Mikels, Paulitz, Verdugo-Peralta, and Wilson
NOES:	None
ABSENT:	Burke, LaPisto-Kirtley and Silva

Dated: June 21, 2002

Clerk of the Board

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INTRODUCTION

This executive summary includes:

- ✓ Background information about recent PM10 air quality in the Coachella Valley and pertinent regulatory background;
- ✓ A quick guide to this 2002 Coachella Valley PM10 State Implementation Plan (2002 CVSIP);
- ✓ Questions and answers concerning this 2002 CVSIP, its purpose and development

AIR QUALITY AND REGULATORY BACKGROUND

The South Coast Air Quality Management District (AQMD) is the local agency responsible for air quality assessment and improvement in the Coachella Valley. The Coachella Valley is the desert portion of Riverside County in the Salton Sea Air Basin. The Coachella Valley and the AQMD have a demonstrated history of adopting and implementing PM10 dust controls to ensure healthful air for local residents and tourists. These efforts are summarized in the 1996 Coachella Valley PM10 Redesignation Request and Maintenance Plan (1996 CV Plan). U.S. EPA has not taken action on the 1996 CV Plan nor previous Coachella Valley PM10 SIPs. (U.S. EPA did SIP-approve the Coachella Valley's local dust control ordinances and AQMD's fugitive dust rules, effective January 8, 1999.) The attainment date for serious non-attainment areas to achieve the PM10 NAAQS is 2001. After years of demonstrating attainment of the PM10 standards, PM10 levels in the last three years (1999-2001) do not demonstrate attainment of the annual average PM10 NAAQS. (Coachella Valley has attained the 24-hour PM10 standard since 1993.) Under the federal Clean Air Act (CAA), an area can request an extension of up to five years to attain the PM10 NAAQS, if certain requirements are met. If U.S. EPA does not grant the extension, U.S. EPA can find that the area has failed to attain by the deadline and swiftly impose significant planning and control requirements (e.g., 5% PM10 emission reduction per year until attainment) on that area.

When it became apparent that the Coachella Valley would not be able to continue to demonstrate attainment of the PM10 NAAQS through the 2001 attainment year, AQMD staff, in conjunction with local Coachella Valley jurisdictions, agencies, and stakeholders, quickly prepared the 2002 CVSIP, which includes control program enhancements that meet the Most Stringent Measure (MSM) requirements and a request for extension of the PM10 attainment date. Local assistance with 2002 CVSIP preparation was also provided by the Coachella Valley Air Quality Ad Hoc Task Force (see Appendix A). This 2002 Coachella Valley PM10 State Implementation Plan (2002 CVSIP) contains all the required elements for a request for extension of the PM10 attainment deadline.

GUIDE TO THE 2002 CVSIP

The 2002 CVSIP addresses the recent rise in PM10 levels above the standard by establishing additional controls needed to demonstrate expeditious attainment of the PM10 NAAQS. This attainment plan builds upon a historically proactive and successful dust control program by Coachella Valley jurisdictions and the AQMD.

The 2002 CVSIP details the modifications to the previous analyses and programs, but a more complete description of previous efforts is contained in the 1990 SIP for PM10 in the Coachella Valley (1990 CVSIP) and the SIP for PM10 in the Coachella Valley: 1994 "BACM" Revision (1994 CVSIP) and the 1996 CV Plan. Many elements of these previous plans are included by reference in the 2002 CVSIP. The following summarizes the highlights of each chapter of the 2002 CVSIP:

Chapter 1: Background Information
The introduction describes the purpose of the 2002 CVSIP, brief background information on the Coachella Valley, the 1990, 1994 and 1996 Coachella Valley plans and the implementation status of related dust control programs, latest dust control efforts, and the public process used in developing the 2002 CVSIP.

Chapter 2: Air Quality Summary
This chapter describes the air quality subsequent to the 1996 CV Plan, from 1997 through 2001. It also describes recent high-wind natural events and documentation of the exceedance of the annual average PM10 standard in 2001 (1999 through 2001 data).

Chapter 3: Emission Inventory Update
The 2002 CVSIP uses the year 2000 as its base year. Emissions in most categories are based on estimates used in the 1996 CV Plan. The major change is in construction emissions through the use of actual 2000 construction activity data from the Construction Industry Research Board and road construction activity and emissions based on SCAG's latest RTP, in conjunction with CARB's latest construction emission factors. Future growth is based on projections from the 1996 CV Plan. Future year baseline and controlled emissions are presented for 2006 (attainment year) and 2003 (reasonable further progress milestone year). The chapter also includes emission budgets for use in transportation conformity determinations.

Chapter 4: Most Stringent Measures Analysis
As required by the federal CAA, this chapter contains the analysis of dust control rules in other serious PM10 non-attainment areas and compares them to Coachella Valley rules (AQMD) and ordinances (local jurisdictions).

Chapter 5: Proposed Control Strategy
This chapter contains the 2002 CVSIP control measures that describe revisions to current rules and ordinances that would implement the feasible and/or applicable MSMs. Where applicable, justification of less stringent measures based on technical or economic unfeasibility, as allowed by the federal CAA, is provided.

Chapter 6: Attainment Demonstration
This chapter contains the modeling attainment demonstration, based on the proposed control strategy.

Chapter 7: Natural Events Action Plan Status and Update
This chapter describes the 1996 Natural Events Action Plan (NEAP), its implementation status and new initiatives that will be added to create the 2002 NEAP update.

Chapter 8: Request for Extension of the 2001 PM10 Attainment Deadline
This chapter contains the official request for extension of the 2001 PM10 attainment deadline and a discussion of how CAA requirements for an attainment date extension have been met by the 2002 CVSIP. It also includes a request that U.S. EPA and CARB parallel process their review of the 2002 CVSIP, beginning with the release of the draft 2002 CVSIP. The Governing Board Resolution for the 2002 CVSIP includes a SIP commitment to revise the 2002 CVSIP in 2003 using the latest technical information, including the latest approved EMFAC version and planning assumptions.

QUESTIONS AND ANSWERS ABOUT THE 2002 CVSIP

The following questions and answers describe the current PM10 conditions, the regulatory requirements and the need for an immediate request for extension of the 2001 PM10 attainment deadline, which is contained in this 2002 CVSIP.

Didn't the Coachella Valley attain the PM10 standards?
Yes. In 1996, the AQMD prepared the 1996 CV Plan, which demonstrated attainment of the PM10 standards, requested attainment redesignation, and provided a maintenance plan for the Valley. The 1996 CV Plan was approved by the AQMD in December 1996 and by CARB in February 1997. Excluding natural high-wind events under the U.S. EPA's Natural Events Policy, ambient PM10 levels demonstrate compliance with the three-year expected annual average PM10 NAAQS from 1995 through 1999 and the 24-hour PM10 NAAQS from 1993 through 2001. Unfortunately, PM10 levels from 1999 through 2001 were elevated and do not demonstrate attainment of the annual average PM10 NAAQS.

What has been done to respond to these higher PM10 levels? If the Valley has exceeded the PM10 standard, why not just implement the contingency measures in the 1996 CV Plan maintenance plan?
U.S. EPA did not take action on the redesignation request and maintenance plan in the 1996 CV Plan. Thus, simply implementing the contingency measures is not sufficient to avoid a notice of failure to attain. In the 2002 CVSIP, AQMD proposes to implement contingency measures CVCTY 1A, "Minimal Track-out" and CVCTY 2, "Control of Emissions from Agricultural Activities, by extending Rule 403 South Coast Air Basin provisions to the Coachella Valley. Local golf courses have already implemented CVCTY 3, "Control of Emissions from Turf Overseeding" by implementing the recommendations from studies conducted by the University of California at Riverside, which was sponsored by the AQMD and CVAG. CVAG has also conducted local outreach to landscaping companies and the public for their smaller overseeding areas. Although many local golf courses have voluntarily implemented CVCTY-3, it has not been adopted as an AQMD

rule. Therefore, it is being carried forward from the 1996 CV Plan and incorporated into the 2002 CVSIP. The Coachella Valley has continued its Clean Streets Management program, including extensive post-event road cleaning.

Has the AQMD or the Coachella Valley taken any other actions to respond to the recent increases in PM10 levels?

In response to higher ambient PM10 levels in 1999 and 2000, the Coachella Valley jurisdictions, agencies, stakeholders and AQMD staff have implemented a number of proactive PM10 control and compliance programs to reduce PM10 levels, in addition to the turf overseeding control program mentioned above. These include:

- ✓ Increased AQMD compliance activities since 1999, resulting in over 137 rule violation notices
- ✓ AQMD meetings with Coachella Valley construction contractors (1999, 2000)
- ✓ AQMD Town Hall Meeting (December 2000)
- ✓ CVAG approves implementation of revised and detailed dust control plan review and compliance guidance, developed by AQMD and CVAG, and reviewed by local stakeholders (March 2001)
- ✓ Valley-wide dust control conference (March 2001)
- ✓ AQMD assigns a full-time inspector for dust control compliance and outreach to jurisdictions and builders in the Coachella Valley (May 2001)
- ✓ Each Coachella Valley jurisdiction has designated a "dust czar" to coordinate dust control (e.g., dust plan review, ordinance enforcement, public and industry outreach)
- ✓ 16 Compliance Promotion Classes, sponsored by CVAG and AQMD, whose curriculum includes fugitive dust control requirements and strategies, public nuisance prevention and provisions, and fugitive dust control plan review and development, held for over 300 attendees, including city, county, and water district employees, developers / contractors, and tribal representatives (on-going since May 2001)
- ✓ Continuing use of Congestion Management Air Quality (CMAQ) funds for mobile-source-related PM10 prevention and mitigation projects (since 1998)
- ✓ Exploration of additional funding opportunities for public and private PM10 prevention and mitigation projects and facilitation of current funding programs (since May 2001)

These programs are described more completely in Chapter 1. PM10 levels have decreased since the high levels of 52.7 and 51.9 $\mu g/m^3$ in 1999 and 2000, respectively to only 50.2 $\mu g/m^3$ in 2001. Continued improved implementation of current programs may be sufficient to achieve the PM10 standard. However, these programs did not reduce PM10 levels enough to demonstrate PM10 NAAQS attainment for the year 2001, necessitating a request for extension of the 2001 attainment deadline.

Given the Coachella Valley's history of proactive dust control, including its latest efforts, can't AQMD just write a letter requesting an extension?
No. The federal CAA lists very specific required elements that must accompany any request for extension. The 2002 CVSIP includes the required elements for an approvable request for extension.

Why has the development of the 2002 CVSIP been expedited?
If U.S. EPA does not approve an extension of the 2001 PM10 attainment deadline, it could issue a failure to attain notice within 6 months of the deadline. AQMD staff intends to present this 2002 CVSIP before July 2002.

What are the consequences if U.S. EPA issues a notice of failure to attain?
Serious areas that fail to attain the PM10 standard must develop a SIP within a year of failure date that demonstrates a minimum 5% per year reduction in PM10 primary or precursor emissions. In a desert area such as the Coachella Valley, such a requirement could mean significant reduction and/or stoppage of construction, farming, and other anthropogenic activities that produce or allow fugitive dust.

Did any other serious non-attainment area have to request an extension?
Yes. The AQMD submitted such a request in February 1997 for the South Coast Air Basin (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties). U.S. EPA has yet to take any action on this request. Maricopa County, which includes the greater Phoenix Arizona area, submitted their request in February 2000. U.S. EPA approved the Maricopa County SIP on January 10, 2002. Clark County, which includes the greater Las Vegas area, submitted their latest PM10 plan and extension request to U.S. EPA in June 2001. The San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) of California prepared a SIP and extension request in May 1997. The SJVUAPCD withdrew its SIP in February 2002, and U.S. EPA issued a notice of failure to submit and a proposed notice of failure to attain for the San Joaquin Valley on February 28, 2002. In the proposed notice of failure to attain, U.S. EPA stated that the San Joaquin Valley had until December 31, 2002 to submit a new plan that demonstrates an annual 5% emission reduction of PM10 pollutants (primary or precursor) until attainment.

What are the required elements of an approvable request for extension?
Among the required elements are:

- demonstration that all previous SIP commitments have been implemented,
- demonstration that the 2001 attainment date is impracticable,
- documentation the control measures in the SIP are as stringent as the MSMs that have been implemented and/or achieved in practice by any state and are feasible for the area, and
- demonstration that the expected attainment date is the most expeditious alternative date practicable.

In addition, the 2002 CVSIP has other elements, such as a transportation conformity budget and Natural Events Action Plan update.

Does the 2002 CVSIP meet the requirements of an approvable request for extension?
Yes. AQMD staff believes that the 2002 CVSIP meets or exceeds all the requirements of an approvable request for extension.

Why is the 2002 CVSIP brief compared to other requests for extension that include the MSM analysis?
The 1990, 1994, and 1996 Coachella Valley SIPs and Plans document the development and implementation of an extensive PM10 dust control program, as well as an extensive description of dust sources and emissions. These SIPs and Plans were submitted to U.S. EPA by CARB after their approval by the AQMD Governing Board. Much of the required technical analysis of sources and control measures is contained in those plans. Since the 2002 CVSIP builds on these previous plans, it only documents those additional requirements necessary for an extension request, such as the MSM analysis, enhanced control strategy, and attainment demonstration.

CHAPTER 1

BACKGROUND INFORMATION

INTRODUCTION

This chapter discusses the following:

- ✓ The purpose and regulatory background of this plan;
- ✓ The Coachella Valley area;
- ✓ Previous Coachella Valley SIPs, plans and dust regulations;
- ✓ Coachella Valley's latest dust control efforts; and
- ✓ The public process used during the development of this plan.

PURPOSE AND REGULATORY BACKGROUND

The Coachella Valley is currently designated as a serious non-attainment area for PM10. The AQMD is the air agency responsible for air quality planning and regulations in the Coachella Valley (Health and Safety Code §§ 40410, 40413). Since it was designated as a PM10 non-attainment area, Coachella Valley governments, agencies, private and public stakeholders, along with the AQMD, have proactively worked to reduce unhealthful levels of PM10 dust. These efforts are detailed in the 1990 SIP for PM10 in the Coachella Valley (1990 CVSIP), the 1994 BACM Revision of the 1990 CVSIP (1994 BACM CVSIP), and the 1996 Coachella Valley PM10 Attainment Redesignation Request and Maintenance Plan (1996 CV Plan). As noted in the 1996 CV Plan, local and AQMD dust control efforts were so successful that Coachella Valley became the first serious non-attainment area in the nation to request redesignation. The local dust control ordinances and AQMD's fugitive dust rules 403 and 403.1 were SIP-approved by U.S. EPA on January 8, 1999 (cf. 63 FR 67784-67787, dated December 9, 1998). The AQMD has invoked the U.S. EPA's Natural Events Policy (NEP) to identify high PM10 days that resulted from high-wind natural events. These days are not used in determining the 24-hour or annual average PM10 levels. Based on monitoring data and the NEP, the Coachella Valley demonstrated attainment of the annual average PM10 NAAQS (expected annual average mean for past three years) for each year from 1995 through 1999. It has demonstrated attainment of the 24-hour PM10 NAAQS from 1993 through 2001.

In 1999, annual average PM10 levels jumped up to 52.7 $\mu g/m^3$, significantly above levels seen in previous years. (PM10 levels all reflect removal of natural events, if any.) An improving economy had resulted in greater development, particularly of large resorts and recreational areas. After a series of AQMD enforcement actions at these large developments, the AQMD began a program of greater enforcement and outreach to developers and builders, and local government dust plan review and enforcement staff. Local and AQMD efforts redoubled in 2001 (see below) when annual average PM10 levels decreased slightly in 2000, but remained high (51.7 $\mu g/m^3$). PM10 levels were significantly lower in the first two quarters of 2001, but high levels in the third quarter particularly resulted in a PM10 level of 50.2 $\mu g/m^3$ in 2001. The expected annual average mean for 1999-2001 was 51.7 $\mu g/m^3$. A more complete description of recent PM10 levels and NAAQS analysis can be found in Chapter 2.

The federal CAA requires that a serious non-attainment area achieve the PM10 NAAQS by December 31, 2001. Based on the analysis of PM10 levels from 1999 through 2001, the Coachella Valley failed to attain the annual average PM10 NAAQS. It did attain the 24-hour average PM10 NAAQS.

Accordingly, the purpose of this plan is to revise the previous PM10 State Implementation Plans (SIPs) to request an extension of the 2001 PM10 attainment deadline for the Coachella Valley and to submit the required MSM analysis, attainment demonstration and other elements necessary to qualify for approval of such an extension request by the U.S. EPA.

THE COACHELLA VALLEY AREA

The Coachella Valley PM10 non-attainment area consists of an approximately 2,500 square mile portion of central Riverside County (see Figures 1-1 and 1-2). The Valley itself is within the newly created Salton Sea Air Basin (formerly Southeast Desert Air Basin) and is aligned in a northwest-southeast orientation stretching from Banning Pass to the Salton Sea. Geographically, the Valley is bounded by the San Jacinto Mountains to the west, and the Little San Bernardino Mountains to the east. Elevation ranges from approximately 500 feet above sea level in the northern part of the Valley to about 150 feet below sea level near the Salton Sea.

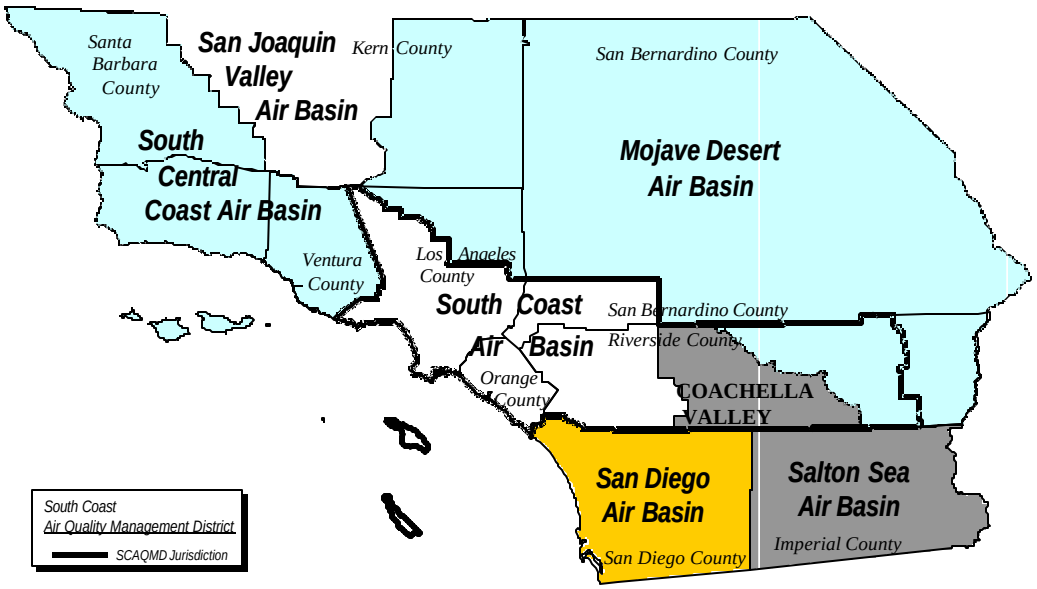

FIGURE 1-1

District, Air Basins, and Coachella Valley Air Monitoring Stations

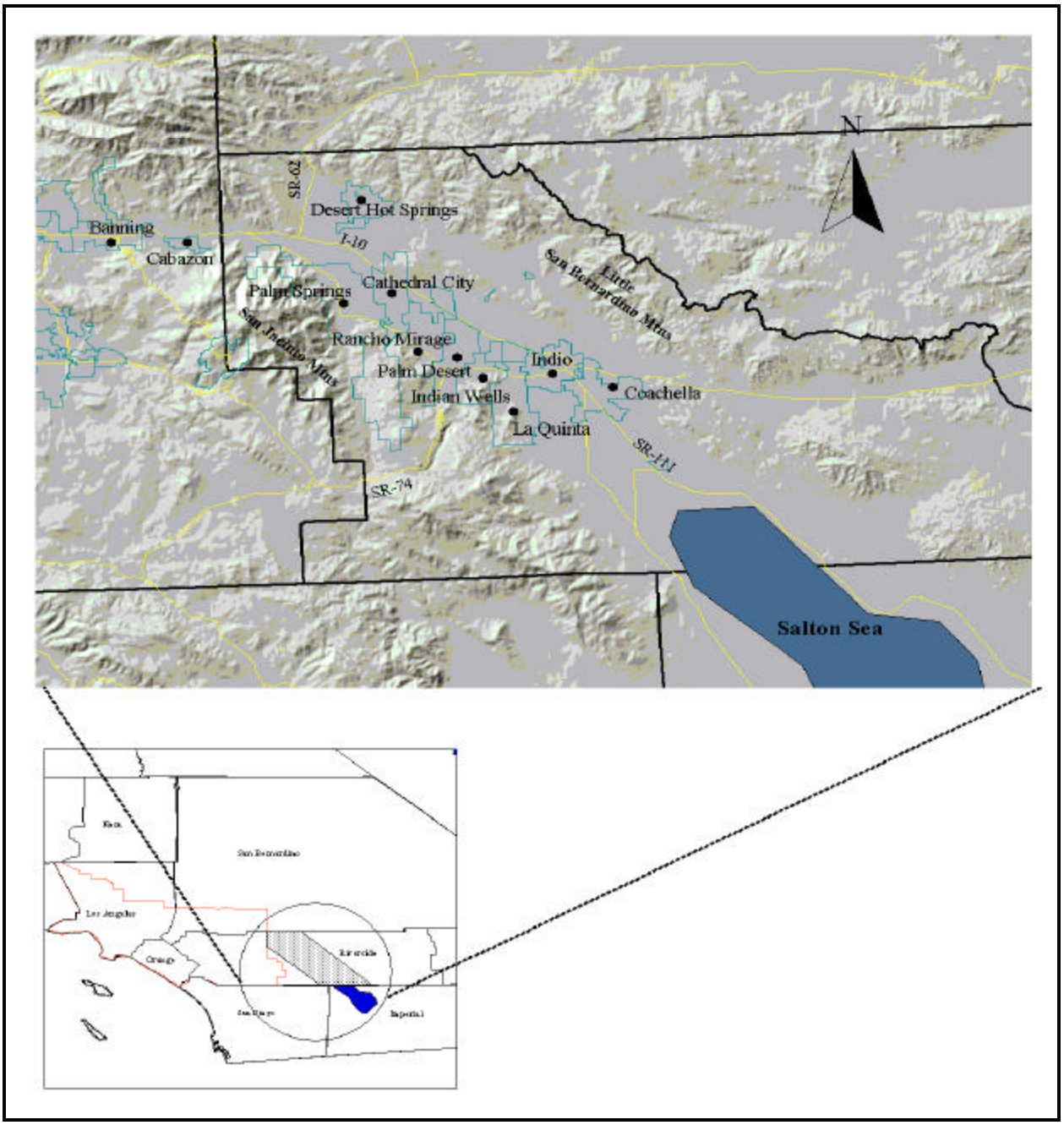

FIGURE 1-2

Coachella Valley Communities

As shown in Table 1-1, the Coachella Valley is a rapidly growing area, with the population expected to nearly double by the year 2020. Continued growth in the area is powered by an economic focus on recreation, tourism, and agriculture. The northern part of the valley, northwest of Indio, is the most densely populated area, with residential housing primarily toward the wind-sheltered areas near the foothills of the Santa Rosa Mountains. In recent years, however, population growth has pushed the residential development northward, closer to the high-wind belt. South of Indio, agricultural activity is dominant, and population densities are much lower than in the northwestern portion of the Valley. Figure 1-2 shows the locations of communities within the Coachella Valley.

TABLE 1-1

Coachella Valley Historical Population and Population Forecasts

	1980	**1990**	**2000**	**2010**	**2020**
Population	139,000	267,000	374,000	469,000	598,000

Coachella Valley's Meteorology, Climate, Winds and Blowsand

This section summarizes the Coachella Valley's meteorology, climate, wind conditions and its blowsand, all of which contribute to the dusty conditions in the Valley. High winds over the blowsand regions of the Coachella Valley can result in uncontrollable high PM10 levels and require significant levels of clean-up by local governments and developers. A more detailed description of the Valley's meteorology, climate, winds, and blowsand can be found in the first chapter of the 1990 CVSIP, 1994 CVSIP and the 1996 CV Plan, which are included by reference.

The climate of the Coachella Valley is a continental, desert-type, with hot summers, mild winters, and very little annual rainfall. Precipitation is less than six inches annually and occurs mostly in the winter months from active frontal systems, and in the late summer months from thunderstorms. Temperatures exceed 100 degrees Fahrenheit, on the average, for four months each year, with daily highs near 110 degrees Fahrenheit during July and August. Summer nights are very mild with minimum temperatures in the mid-70's. During the winter season, daytime highs are quite mild, but the dry air is conducive to nocturnal radiational cooling, with early morning lows around 40 degrees.

The Coachella Valley is exposed to frequent gusty winds. The strongest and most persistent winds typically occur immediately to the east of Banning Pass, which is noted as a wind power generation resource area. Aside from this locale, the wind conditions in the remainder of the valley are geographically distinct. Stronger winds tend to occur in the open mid-portion of the valley, while lighter winds tend to occur closer to the foothills. Less frequently, widespread gusty winds occur over all areas of the valley.

Within the Coachella Valley, there is a natural sand migration process that has direct and indirect effects on air quality. Called "blowsand," this natural sand migration process produces PM10 in two ways: (1) by direct particle erosion and fragmentation (natural PM10), and (2) by secondary effects, as sand deposits on road surfaces are

ground into PM10 by moving vehicles and resuspended in the air (man-made PM10). The following is a summary description of the Valley's blowsand problem, as contained in a report prepared Donald Weaver in his "Initial Blowsand Study for the Coachella Valley" prepared in October 1992 (see Appendix A of the 1996 CV Plan).

Under natural conditions, the overall region of blowsand activity encompasses approximately 130 square miles extending from near Cabazon to Indio, and lying primarily between the San Gorgonio Mountains and the Whitewater River channel on the southwest and San Bernardino Mountains and the Indio Hills on the northeast. Sands supplied by floodwaters to the westerly and northerly portions of the region are transported by strong, essentially unidirectional winds to the southerly portion of the region. Transporting winds emanate from the San Gorgonio Pass and occur most frequently and with the greatest intensity during the spring and early summer months. Once having entered the Valley, the winds tend to dissipate rapidly in the southeasterly direction, losing virtually their entire capability of transporting significant quantities of sand before reaching the lower portion of the Whitewater River channel near Indio.

The alluvial floodplain of the Whitewater River extending between Windy Point and Indian Avenue, together with the alluvial floodplain extending along the base of the Indio Hills constitute the primary blowsand source areas. The large accumulation or deposition area, which presently contains over two billion cubic yards of wind-deposited sand, extends over the southerly and easterly portions of the region.

The blowsand process varies considerably over time, depending on the availability of flood-provided sand, fluctuations in the transporting wind regime, and to a lesser extent, changes in vegetative cover within the Valley. An average of 180,000 cubic yards of sand are transported by wind from the described sources annually. Mean annual rates of transport, expressed in terms of cubic yards per one-foot-wide path (CYPF) extending in the direction of sand movement, have been determined for the entire region under natural conditions, and range from near zero in the southeasterly portion near Indio to more than 35 CYPF near Indian Avenue.

PREVIOUS COACHELLA VALLEY SIPS AND PLANS

Since adoption of the 1990 CVSIP, the local Coachella Valley jurisdictions, the Coachella Valley Association of Governments (CVAG), and the AQMD have worked closely to implement the various 1990 CVSIP control measures. This team approach has resulted in what was the most comprehensive dust control program in the nation at that time. The 1996 CVSIP, which is incorporated by reference, describes the implementation status of these control measures in detail in its Chapter 1. In the 1994 CVSIP, additional BACM measures were identified. However, by 1996, the Coachella Valley had achieved the PM10 NAAQS and the AQMD requested its redesignation to attainment. At that time, the 1994 CVSIP BACM measures were incorporated as contingency measures in the 1996 CV Plan. The following sections summarizes the implementation of these dust control measures.

Local Dust Control Ordinances

Each of the nine Coachella Valley cities and the County of Riverside have each adopted dust control ordinances based on the components of the model dust control ordinance:

- Cathedral City Ordinance No. 377 (2/18/93)
- Coachella Ordinance No. 715 (10/6/93)
- Desert Hot Springs Ordinance No. 93-2 (5/18/93)
- Indian Wells Ordinance No. 313 (2/4/93)
- Indio Ordinance No. 1138 (3/17/93)
- La Quinta Ordinance No. 219 (12/15/92)
- Palm Desert Ordinance No. 701 (1/14/93)
- Palm Springs Ordinance No. 1439 (4/21/93)
- Rancho Mirage Ordinance No. 575 (8/5/93)
- County of Riverside Ordinance No. 742 (1/4/94)

The AQMD reviewed each of the locally-adopted dust control ordinances to ensure that they contain requirements that are at least as stringent as those contained in the model dust control ordinance, which was developed cooperatively by CVAG, its member jurisdictions, and the AQMD. These ordinances were submitted as SIP revisions in February 1995. These ordinances were approved by U.S. EPA as a SIP revision effective January 8, 1999 (cf. 63 FR 67784-67787, dated December 9, 1998).

Clean Streets Management Program

Entrained road dust PM10 emissions are one of the larger source categories in the Coachella Valley. Accordingly, the 1990 CVSIP proposed several control measures (e.g., post-event/enhanced street cleaning, road shoulder stabilization, etc.) intended to reduce paved road PM10 emissions. In order to ensure control measure implementation, CVAG staff worked diligently to secure funding for the clean streets management program. The results of this work effort have been the allocation of over $6,000,000 in Congestion Management and Air Quality (CMAQ) funds, as established under the federal Intermodal Surface Transportation Efficiency Act (ISTEA), which has now become the Transportation Efficiency Act for the 21st Century (TEA-21). Under the program, local jurisdictions submitted proposals to CVAG requesting funding for implementation of clean streets management practices (e.g., stabilization of unpaved shoulders, installation of wind breaks, etc.).

To date, all but approximately $2.5 million in TEA-21 funds have been obligated for Coachella Valley PM10 reduction projects. CVAG and local jurisdiction staff have been working to obligate the remaining $2.5 million in TEA-21 funds prior to September 30, 2002. According to the Riverside County Transportation Commission, future year TEA-21 CMAQ monies will also be available to fund air quality-related projects, including the transportation-related PM10-reduction projects.

CVAG staff has also prepared a detailed CMAQ ISTEA Project Procedures manual that provides local jurisdictions with step-by-step guidance from project design through construction. Appendix D of the 1996 CV Plan contains the introduction portion of the CMAQ ISTEA Project Procedures manual. Appendix C of the 1996 CV Plan contains a table that provides a summary description of these projects and the jurisdictions in which they are proposed. As part of the CMAQ ISTEA process,

each jurisdiction must clearly document the actions taken and must meet their previously approved project descriptions for reimbursement of expenses. This documentation process provides verification of the targeted actions.

As part of the clean streets management program, CVAG has hired a contractor to conduct "post-event" street cleaning. The purpose of this project is to provide local jurisdictions with the ability to rapidly remove deposited material from the area's road network following rain or wind storm events. This program is also funded under CMAQ and has been especially beneficial during the spring blowsand season. Local jurisdictions have also used these funds for cleaning streets using in-house forces.

Rule 403 - Fugitive Dust

AQMD Rule 403 was amended in November 1992, July 1993, February 1997 (BACM amendments for South Coast Air Basin only), and December 1998 (addresses SIP deficiency). As an AQMD rule, the associated emissions reductions are permanent and enforceable. Additionally, AQMD Rule 403 serves as a "backstop" for the locally adopted dust control ordinances. Effective January 8, 1999 (cf. 63 FR 67784-67787, dated December 9, 1998), U.S. EPA granted a limited approval/limited disapproval of Rule 403 (as amended February 1997). As noted by the U.S. EPA air director in his letter dated December 4, 1998, the December 1998 amendment to Rule 403 addresses the SIP deficiency (adding U.S. EPA approval to CARB and AQMD Executive Officer discretion in approving alternative test methods). U.S. EPA published a direct final approval of Rule 403 (and Rule 1186) on February 17, 2000 (65 FR 8057-8060). In its December 9, 1998 action, U.S. EPA also SIP-approved the following sections of the Rule 403 Implementation Handbook: Chapter 3, “Soil Moisture Testing Methods;” Chapter 4, “Storage Piles;” Chapter 6, “Best Available Control Measures;” Chapter 7, “Reasonably Available Control Measures;” and Chapter 8, “Guidance for Large Operations.”

Rule 403.1 - Wind Entrainment Of Fugitive Dust

The AQMD’s Governing Board adopted Rule 403.1 in January 1993. A wind forecasting system was also developed in association with this rule. Under the forecasting system, owner/operators of subject facilities can obtain a forecast of the wind conditions by calling (800) CUT-SMOG. A forecast of anticipated PM10 levels was also added to this system to alert the public to days when high winds may lead to unhealthful PM10 levels. As with Rule 403, this is an AQMD Rule and its associated emissions reductions are permanent and enforceable. Effective January 8, 1999 (cf. 63 FR 67784-67787, dated December 9, 1998), U.S. EPA SIP-approved Rule 403.1. It also SIP-approved the following sections of the Rule 403.1 Implementation Handbook: Chapter 4, “Wind Monitoring” and Chapter 5, “Storage Piles.”

LATEST DUST CONTROL EFFORTS

In response to significant dust control problems and nuisance situations at large construction sites in Spring 1999, AQMD enforcement, planning, and prosecution staff held a series of meetings with local developers and builders to stress the need and legal requirements to control dust on their sites. Local government officials and staff were briefed on the need to enforce their current dust ordinances as the economy

surged and local construction activities increased. Although PM10 levels showed some decrease in 2000, significant violations of AQMD rules continued at certain large construction sites, as well as other fugitive dust sources. In December 2000, the AQMD held a Town Hall meeting attended by over 150 people to address public nuisance concerns and the threat to the Coachella Valley's PM10 attainment status. As a result of meetings with the CVAG Executive Committee and it sub-committees, AQMD staff proposed a series of actions to improve compliance with existing dust control regulations and expedite other PM10 control programs.

In March 2001, CVAG adopted and improved implementation by all local jurisdictions of detailed Guidelines for Dust Control Plan Review for Local Governments (dated January 2001), which had been prepared by AQMD staff in conjunction with CVAG and local government staff and developers/builders (see Appendix B). Based on this enhanced guidance, CVAG and AQMD sponsored on-going Compliance Promotion Classes that detailed fugitive dust control requirements of local and AQMD regulations, public nuisance provisions and prevention, and fugitive dust control plan development, review and compliance. To date, over 16 classes have been held with over 300 attendees, including city, county, and water district employees (158), developers / contractors / builders (142), and tribal representatives (8). In addition, a valley-wide dust control conference was held in March 2001 to increase awareness and outreach to valley developers, builders, local government plan review and enforcement staff, and the public. The conference was videotaped and re-played on the local cable channel.

In May 2001, AQMD assigned a full-time inspector to the Coachella Valley to improve outreach and compliance with existing dust control regulations. This was in addition to AQMD inspectors who had been responding to potential AQMD rule violations. This dedicated AQMD dust inspector has helped run the Compliance Promotion Classes described above. In addition, each Coachella Valley jurisdiction has assigned a "dust czar" to coordinate dust control for that jurisdiction (e.g. dust plan review, ordinance enforcement, public and industry outreach, AQMD liaison). All "dust czars" have taken the Compliance Promotion Class and have worked with the AQMD inspector to address dust sources within their individual jurisdictions.

To expedite implementation of CMAQ-funded PM10 control projects, CVAG and AQMD staff met and continue to meet with representatives from the Federal Highway Administration (FHWA), Caltrans, Riverside County Transportation Commission (RCTC) and others to facilitate approval of these important projects. In August 2000, FHWA agreed to extend the eligibility of PM10 projects to include the maintenance of sand fencing and re-application of chemical stabilizers. (FHWA had previously established the CMAQ eligibility of paving, chemical stabilization, sand fencing, and clean streets management [e.g. post-event sweeping] programs.) CVAG has hired contractors to work with all of the local jurisdictions to prepare the proper funding documentation for their PM10 control projects.

In an effort to ensure the effective and timely utilization of CMAQ funds for PM10 mitigation projects, CVAG has initiated a CMAQ Technical Assistance Program. The objectives of the Technical Assistance Program are as follows:

- Quantify and document the PM10 emission reduction benefits of CMAQ projects previously approved and implemented within the Coachella Valley;
- Assist CVAG member jurisdictions in identifying transportation-related PM10 reduction projects for funding under the current or future CMAQ funding allocations;
- Assist CVAG member jurisdictions in submitting approved CMAQ projects to Caltrans District 8 Local Assistance;
- Interface with Caltrans District 8 staff during CMAQ project submittal to address questions regarding a proposed project's eligibility under the FHWA guidelines, including the development of substantiating documentation relative to the proposed project's PM10 reduction benefits.

To assist CVAG staff in implementing these objectives, CVAG has retained the services of recognized technical experts in areas of health effects, emission reduction quantification, and project implementation. These technical consultants work one-on-one with each jurisdiction to identify and implement cost-effective PM_{10} reduction projects appropriate to that jurisdiction. Accomplishments of the CVAG technical assistance team to date are as follows:

- The team has met with each CVAG member jurisdiction one or more times;
- Cost-effective PM10 reduction projects have been identified for each jurisdiction;
- Field reviews have been conducted with Caltrans in cases where project eligibility was a potential issue;
- Emissions reduction benefits for all projects submitted to Caltrans have been quantified and documented.

SIP DEVELOPMENT PUBLIC PROCESS

Continuing its tradition of proactive dust control, local Coachella Valley stakeholders have worked closely with AQMD staff in preparing this 2002 CVSIP. Shortly after being briefed on the potential non-attainment status, CVAG's Executive Committee established the Coachella Valley Ad Hoc Air Quality Task Force (CV Task Force) on February 14, 2002. The CV Task Force is charged with assisting AQMD staff in crafting proposed revisions to local and AQMD dust regulations that would meet the most stringent measures (MSM) criteria necessary for U.S. EPA to approve the request for extension of the PM10 attainment deadline.

The CV Task Force includes mayors and city council members of all Coachella Valley cities, a County Supervisor from Riverside County, tribal chairs or vice-chairs from all local Indian tribes, CVAG Energy and Environmental Resources subcommittee members (city managers), the Coachella Valley Economic Partnership, and representatives from the local farm bureau, building industry association, developers, Caltrans, as well as staff from AQMD, CARB, and U.S. EPA (see Appendix A). Other interested stakeholders, including SunLine Transit Agency, Coachella Valley Water District, Southern California Gas Company, local developers, the Construction Industry Air Quality Coalition (CIAQC), local farmers, and the

"dust czars," have also participated. The CV Task Force also established separate sub-committees to review and comment on SIP development and implementation issues. The sub-committees included: construction activities MSMs, roadways/open areas/parking lots MSMs, agricultural activities MSMs, enforcement, and funding. The CV Task Force has met March 14 and April 25, 2002. The MSM and enforcement sub-committees met on April 17, 18, and 24, 2002. The funding sub-committee met with Caltrans and FHWA in January 2002 and continues to hold meetings on an as-needed basis. A public workshop for the draft 2002 CVSIP ~~will be~~ was held on May 23, 2002 in the Coachella Valley. Over 130 people attended, representing the public, developers, local government and government agencies, farmers, business interests, and the media.

It is intended that the CV Task Force will continue to meet after the adoption of the 2002 CVSIP to assist in adoption and implementation of the control measures that it helped develop. Pursuant to the direction from CVAG's Energy and Environmental Resources subcommittee, these control measures will be developed into a model ordinance for consideration and adoption by all local jurisdictions and/or SIP commitments for government PM10 control actions. AQMD staff will continue to support the CV Task Force in the implementation of the 2002 CVSIP.

CHAPTER 2

PM10 AIR QUALITY

INTRODUCTION

This chapter discusses the following:

- ✓ Summary of Pre-1996 PM10 air quality,
- ✓ Summary of High-Wind Natural Events from 1996 through 2001; and
- ✓ PM10 air quality from 1997 through 2001, including demonstration of non-attainment of the PM10 annual average NAAQS in 2001.

SUMMARY OF PRE-1996 PM10 AIR QUALITY

The AQMD currently monitors ambient air quality, including PM10 concentrations, at two air monitoring stations in the Coachella Valley. Coachella Valley 1 station is located in the generally upwind and more wind-sheltered area (City of Palm Springs). Coachella Valley 2 station is located downwind of the most heavily populated areas of the Coachella Valley and the blowsand region (City of Indio). Detailed information about the air monitoring sites, their placement and representativeness can be found in the 1990 CVSIP and its technical appendices. PM10 is sampled by means of size selective inlet high volume (SSI) samplers that collect airborne particles with diameter smaller than approximately 10 micrometers. PM10 samples are collected on a quartz fiber filter over a 24-hour period. The filters are returned to the AQMD's laboratory for weighing and chemical analysis. PM10 was collected with SSI samplers every sixth day, so that the number of samples is approximately 60 for a given year if data are complete. The following tables are from the 1996 CV Plan:

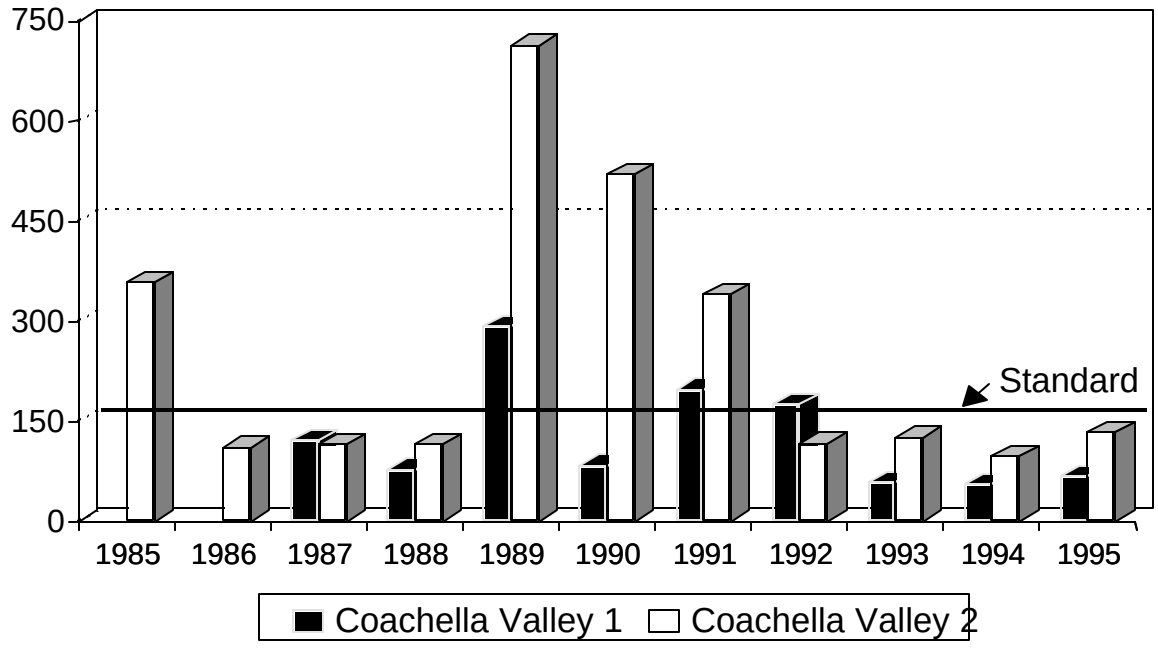

FIGURE 2-1

Maximum 24-Hour PM10 ($\mu g/m^3$), 1985 - 1995

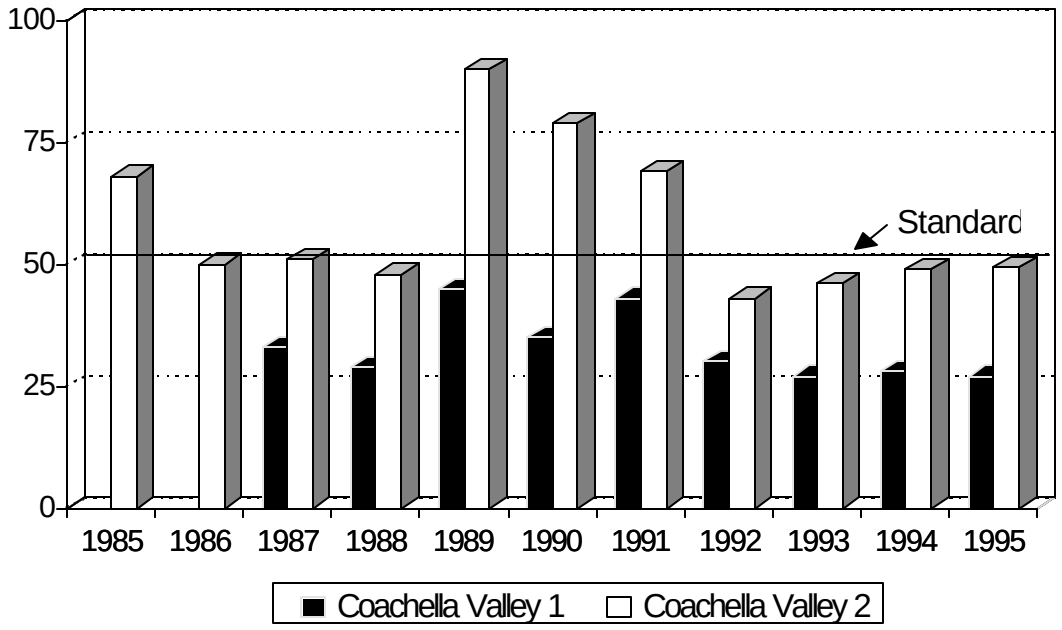

FIGURE 2-2

Annual Average PM10 ($\mu g/m^3$), 1985 - 1995

The figures reflect the removal of June 2, 1995 as high-wind natural event. This event was summarized in the 1996 CV Plan.

HIGH-WIND NATURAL EVENTS FROM 1996 THROUGH 2001

In May of 1996 the U.S. EPA released its natural events policy (NEP) that was intended to provide guidance to air districts regarding the exclusion of ambient air quality data affected by extraordinary natural events (e.g., volcanic and seismic activity, wildland fires, and high-winds). The policy represents the U.S. EPA's most recent interpretation of CAA Section 188(f) and Appendix K to 40 CFR, part 50. Under the policy, air districts may request the redesignation of a nonattainment area to attainment if it can be demonstrated that the area would be meeting the standards if the emissions caused by natural events can be excluded. In order to qualify for the exclusion of ambient air quality data, the policy requires the adoption of a natural events action plan (NEAP) to minimize emissions and to protect public health. AQMD staff submitted the NEAP for the Coachella Valley in the 1996 CV Plan. The status and update of this NEAP is included in this submittal (see Chapter 7).

The Coachella Valley has had only one day with a 24-hour average PM10 concentration above the federal standard of 150 $\mu g/m^3$ during the 1993-1995 time period. This day, June 2, 1995, resulted in a 24-hour PM10 level of 199 $\mu g/m^3$ and can be attributed to a high wind event with windblown dust that can be categorized as a “natural event.” AQMD staff documented that this was a high-wind natural event

that met the NEP requirements and requested that it be removed for purposes of attainment demonstration.

From 1996 through 2001, fourteen other days met the definition of exceedances of the 24-hour standard caused by high-wind natural events. AQMD staff has documented each of these events in accordance with the NEP and submitted them to CARB so that they can be removed from consideration when determining the attainment status of the Coachella Valley. Table 2-1 summarizes these high wind natural events:

TABLE 2-1

Coachella 2 (Indio) High-Wind Natural Events, 1996-2001

YEAR	High-Wind Natural Events
1996 (2day)	Jan. 16th (155 μg/m^3); Jul. 26th (215 μg/m^3)
1997 (2 days)	Mar. 17th (157 μg/m^3); Apr. 28th (182 μg/m^3)
1998 (1 day)	Jun. 16th (158 μg/m^3)
1999 (no days)	NONE
2000 (3 days)	Apr. 21st (190 μg/m^3); May 15th (201 μg/m^3); Sep. 21st (183 μg/m^3)
2001 (5 days)	Jun. 3rd (245 μg/m^3); Jun. 12th (180 μg/m^3); Jul. 3rd (155 μg/m^3); Aug. 17th (604 μg/m^3); Sep. 13th (165 μg/m^3)

The trend in high-wind natural events is consistent with the overall meteorological trends and observations. The years 1997 through 1998 were El Nino years in Southern California. Coachella Valley had rainfall levels at or above their historical mean values of 4.94" (Palm Springs) and 3.12" (Indio). From 1999 through 2001, rainfall dropped was less than average, particularly in 1999 and 2000, when rainfall totals were only about 1/3rd of historical averages. (1999 Palm Springs rainfall was an historical low of 0.76".) High levels of rain bring down material from the local mountain ranges, into the alluvial flood plains that replenish the blowsand areas (see above). Subsequent dry years leave the blowsand material highly susceptible to wind entrainment. This is consistent with the rise in the number of natural events in 2000 and 2001 and the anecdotal reports by AQMD inspectors, developers, and the public.

The Coachella Valley had a total of six days with 24-hour average PM10 concentrations above the NAAQS (i.e., exceeding 150 μg/m^3) during the period from 1993 through 1999, as measured every six days with a size selective inlet (SSI) sampler. In each of these cases, the 24-hour PM10 exceedance was measured downwind at the Coachella Valley 2 (Indio) air quality monitoring station. Starting March 22, 2000, the frequency of SSI samples at Indio was increased to every three days to better capture the windblown dust events that occur in the Coachella Valley. With this increased sampling frequency, 24-hour PM10 exceedances were measured at Indio on April 21, May 15 and September 21, 2000. In 2001, six high-wind natural events occurred in the Coachella Valley, on June 3, June 12, July 3, August 17, August 20, and September 13. In all cases except August 20, a 24-hour PM10 NAAQS violation occurred at Indio based on the one-in-three-day SSI sampling. On August 20, the SSI sampler at Indio measured 149 μg/m^3, very close to the NAAQS but technically not a violation. On August 17, 2001, the one-in-six-day SSI sampling

at the Coachella Valley 1 (Palm Springs) and the San Gorgonio Pass (Banning Airport, in the South Coast Air Basin) air monitoring stations also exceeded the 24-hour PM10 NAAQS.

Three meteorological mechanisms have been identified that lead to high winds and windblown dust in the Coachella Valley[1], as follows:

1. Strong pressure and density gradients between the marine-modified coastal air mass and the desert air mass;
2. Storm system/frontal passages (mainly associated with winter storms);
3. Strong downbursts and gust fronts from thunderstorm activity (summer).

The following table summarizes the primary meteorological mechanism responsible for each high wind natural event in the Coachella Valley, starting with the year 2000, and the peak PM10 concentration measured:

EVENT DATE	Meteorological Mechanism	INDIO SSI PM10 (µg/m^3)
April 21, 2000	1	190
May 15, 2000	2	201
September 21, 2000	1	183
June 3, 2001	1	245
June 12, 2001	1	180
July 3, 2001	3	155
August 17, 2001	3	604
August 20, 2001*	1	149*
September 13, 2001	3	165

* 149 µg/m^3 on 8/20/01 occurred three days after the 604 µg/m^3 natural event on 8/17/01. AQMD staff believes that 149 µg/m^3 meets the criteria for a natural event, although U.S. EPA staff has indicated that levels below 150 µg/m^3 would not quality for exclusion. AQMD staff is still in discussion with U.S. EPA and CARB concerning submittal of natural event documentation. Until that is resolved, AQMD staff is not claiming this day as a natural event.

The high PM10 concentrations measured in each case were the result of high wind conditions that generated windblown dust and can be categorized as natural events under the US EPA Natural Events Policy[2]. Each of the five Type 1 events resulted from a northwesterly high-wind regime, in which the moist marine air from the South Coast Air Basin was forced through the Banning/San Gorgonio Pass by a strong pressure gradient and dust was entrained from the Whitewater Wash blowsand source area in the Coachella Valley. The Type 2 event on May 15, 2000 was the result of a

[1] Durkee, K.R. The EPA Natural Events Policy as Applied to High-Wind PM_{10} Exceedances in the Coachella Valley. Proceedings of the Air and Waste Management Assn. Annual Meeting, June 1998.

[2] Nichols, M.D. U.S. EPA Memorandum from Mary D. Nichols, Assistant Administrator for Air and Radiation, to Directors; Subject: Areas Affected by PM-10 Natural Events; U.S. Environmental Protection Agency, May 1996.

fast-moving storm system that generated high winds through the San Gorgonio Pass, also picking up natural blowsand from the Whitewater Wash. The three remaining Type 3 events were due to transport of large amounts of dust that was entrained by thunderstorm activity over the deserts of Arizona and northern Mexico. In these cases, the dust was transported into the Coachella Valley by the relatively light, southeasterly "monsoonal" wind flows that were prevalent over the deserts of the southwestern US.

Coachella Valley 1 monitoring station is in a region (Palm Springs) that is more sheltered from high winds and is generally upwind of most fugitive dust sources. It has had only one high-wind natural event since 1993. It occurred on August 17, 2001, which is the same day that Coachella Valley 2 (Indio) recorded a PM10 level of 604 $\mu g/m^3$. The PM10 level at the Coachella Valley 1 station that day was 432 $\mu g/m^3$. The documentation for the August 17, 2001 high-wind natural event includes the request that it be excluded from the attainment determination for both stations.

PM10 AIR QUALITY FROM 1996 THROUGH 2001

PM10 continues to be sampled by means of size selective inlet high volume (SSI) samplers that collect airborne particles with diameter smaller than approximately 10 micrometers. PM10 samples are collected on a quartz fiber filter over a 24-hour period. The filters are returned to the AQMD's laboratory for weighing and chemical analysis. Until March 2000, PM10 was collected with SSI samplers every sixth day, so that the number of samples was approximately 60 for a given year if data were complete. After that date, and in accordance with monitoring protocols for the proposed new PM standards, PM10 has been collected with SSI samplers every third day at the Coachella Valley 2 station. Exceedances of the federal and state PM10 standards are usually expressed in terms of percent of days sampled that exceeded. For the purposes of determining attainment of the federal 24-hour and annual PM10 standards, U.S. EPA has specified that an expected annual number of exceedances and an expected annual arithmetic mean must be calculated. The details of the computation are outlined in the Federal Register.[3]

The expected annual number of exceedances is defined as the average of the estimated number of exceedances for three (or more) consecutive years. Coachella Valley 1, at the western end of the valley closest to the South Coast Air Basin, recorded only one exceedance of the federal 24-hour PM10 standard during the period 1993-2001. That exceedance (432 $\mu g/m^3$ on August 17, 2001) has been documented as a high-wind natural event. Therefore, Coachella Valley 1 has an expected annual number of exceedances of zero (see Table 2-2). Coachella Valley 2, further east in the valley and further from the Basin, recorded fifteen days of exceeding the 24-hour average PM10 standard from 1993 through 2001 (see preceding sections). However, all of these days have been documented as high-wind natural events. When these days are excluded from the data as natural event days, the expected number of exceedances of the 24-hour standard is zero (see Table 2-3). Thus, Coachella Valley is demonstrated to be in attainment of the 24-hour PM10 standard.

[3] Federal Register, Vol. 82, No. 126, Wednesday July 1, 1987. Appendix K, p 24667.

TABLE 2-2

Coachella Valley 1: 24-Hour Average PM10 in $\mu g/m^3$

	1996	**1997**	**1998**	**1999**	**2000**	**2001***
No. of Samples*	61	59	58	58	56	50
Max 24-hour average (w/o natural events)	130	63	72	104	44	53
Number (%) above federal standard (w/o natural events)	0 (0%)	0 (0%)	0 (0%)	0(0%)	0 (0%)	0*(0%)
Natural event 24-hour average PM10	NA	NA	NA	NA	NA	432

* Excludes High-Wind Natural Events under the NEP.

TABLE 2-3

Coachella Valley 2: 24-Hour Average PM10 in $\mu g/m^3$

	1996	**1997**	**1998**	**1999**	**2000**	**2001***
No. of Samples*	58	54	80	56	103	116
Max 24-hour average (w/o natural events)	117	144	114	119	114	149** (136)
Number (%) above federal standard (w/o natural events)	0* (0%)	0* (0%)	0* (0%)	0 (0%)	0* (0%)	0* (0%)
Natural Event 24-hour average PM10	215, 155	182, 157	158	NA	201,190, 183	604, 245, 180, 165, 155

* Excludes High-Wind Natural Events under the NEP.

** 149 $\mu g/m^3$ on 8/20/01 occurred three days after the 604 $\mu g/m^3$ natural event on 8/17/01. AQMD staff believes that 149 $\mu g/m^3$ meets the criteria for a natural event, although U.S. EPA staff has indicated that levels below 150 $\mu g/m^3$ would not quality for exclusion. AQMD staff is still in discussion with U.S. EPA and CARB concerning submittal of natural event documentation. Until that is resolved, AQMD staff is not claiming this day as a natural event.

Table 2-4 shows the expected annual arithmetic mean for the Coachella Valley stations. The expected annual average is computed from the estimated annual arithmetic mean for three consecutive years. The estimated annual arithmetic mean for each year is the average of the four calendar quarter means. Coachella Valley 1, under the NEP, has an expected annual arithmetic mean of 26.7 $\mu g/m^3$ based on data for 1999-2001. Coachella Valley 2, under the NEP, has an expected annual arithmetic mean of 51.6 $\mu g/m^3$ for 1999-2001, which is above the standard level of 50 $\mu g/m^3$.

TABLE 2-4

Expected Annual Arithmetic Mean

Site/Year	Arithmetic Mean PM10 Concentration µg/m3					Expected
	Q1	Q2	Q3	Q4	AAMQM	AAM
Coachella Valley 1						
99	27.1	28.8	35.6	23.9	28.9	
00	16.9	25.0	28.6	26.9	24.4	
01	22.3	29.6	69.1	22.0	35.8	
01*	22.3	29.6	32.8	22.0	26.7	26.7
Coachella Valley 2						
99	54.6	48.9	59.5	47.7	52.7	
00	47.9	63.3	60.7	49.8	55.4	
00*	47.9	53.1*	56.6*	49.8	51.9*	
01	35.7	63.5	91.9	44.8	59.0	
01*	35.7	52.7*	67.9*	44.8	50.2*	51.6*

* Values after deletion of high-wind natural events.
Qn = arithmetic mean PM10 for nth calendar quarter.
AAMQM = annual arithmetic mean of quarterly means.
Expected AAM = expected annual arithmetic mean = average of three years AAMQM.

In summary, Tables 2-5 and 2-6 show the annual average mean and 3-year expected annual average mean PM10 for Coachella Valley 1 and 2, respectively, from 1993 through 2001.

TABLE 2-5

Coachella Valley 1 Annual Average Mean (AAM) and Lagging 3-Year AAM PM10 in $\mu g/m^3$ (* Denotes High-Wind Natural Events Excluded under the NEP)

	1993	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001***
AAM	27.0	27.7	27.4	29.3	26.4	26.4	28.9	24.4	26.7
3-Year Average			27.4	28.1	27.7	27.4	27.2	26.5	26.7

TABLE 2-6

Coachella Valley 2 Annual Average Mean (AAM) and Lagging 3-Year AAM PM10 in $\mu g/m^3$ (* Denotes High-Wind Natural Events Excluded under the NEP)

	1993	**1994**	**1995***	**1996***	**1997***	**1998***	**1999**	**2000***	**2001***
AAM	46.4	48.7	49.6	50.7	49.7	47.2	52.7	51.9	50.2
3-Year Average	52.9	46.2	48.2	49.7	50.0	49.2	49.9	50.6	51.6

CHAPTER 3

EMISSIONS INVENTORY UPDATE

INTRODUCTION

This chapter discusses the following:

- ✓ 1996 CV Plan emissions inventory;
- ✓ A description of the specific revisions to the previous emission inventory; and
- ✓ The 2002 CVSIP emissions inventory

1996 CV PLAN EMISSIONS INVENTORY

Except for a minor amount of transport from the South Coast air basin, ambient PM10 in the Coachella Valley results from local primary PM10 fugitive dust sources. There are a variety of activities that can contribute to PM10 emissions, which are grouped into two general categories, stationary sources and mobile sources. Stationary sources can be further differentiated into "point" and "area" sources. Point sources have one or more identified and fixed pieces of equipment at a permitted facility. Area sources consist of numerous small facilities or stationary sources of emissions with locations that are not specifically identified in the emissions data base. Mobile sources can also be differentiated into two major categories, "on-road" and "other" mobile sources. On-road mobile sources include light-duty automobiles; light-, medium-, and heavy-duty trucks; and motorcycles. Examples of "other" mobile sources include aircraft, locomotives, mobile equipment, and off-road recreational vehicles.

Significant progress was made since the adoption of the 1994 CVSIP, which improved the PM10 fugitive dust emissions inventory. The 1996 CV Plan detailed the progress and the results for a variety of projects related to emissions inventory improvement.

Reprinted from the 1996 CV Plan, Table 3-1 represents the annual average and 24-hour PM10 baseline emissions contributed by major source categories in 1995. Annual average estimates represent PM10 emission levels experienced on an average day while 24-hour values represent the PM10 emissions occurring on a worst-case windy day (wind speed exceeded 60 miles per hour). Specifically, the 24-hour values for windblown dust categories were calculated using a lognormal distribution to estimate wind events, and the AP-42 emission factor for windblown emissions from erodible surfaces

As indicated in Table 3-1, about 50 tons of PM10 were emitted on an average day in the Coachella Valley. Approximately 48 tons/day (~ 95% of the total) were fugitive dust emissions from wind erosion of disturbed sources, entrained road dust, construction and demolition activity, and farming operations. Windblown dust from disturbed desert soils accounts for ~11 tons per day; windblown dust from agricultural lands accounts for ~16 tons/day. About 1.6 tons of primary PM10 emissions are emitted by mobile sources in the study area, with heavy-duty diesel trucks accounting for over half of the total. However, mobile sources contribute to PM10- exceedances through entrained paved road dust (~9 tons per day) and entrained unpaved road dust (~5 tons per day).

TABLE 3-1

1995 PM10 Emission Inventory by Major Source Category
Coachella Valley Study Area
(tons/day)

Source Category	Ann. Avg.	24-hour
STATIONARY SOURCES - POINT SOURCES		
Fuel Combustion		
Other Mfg./Industrial	0.07	0.07
Other Service/Commerce	0.01	0.01
Residential	0.12	0.12
Total Fuel Combustion	**0.20**	**0.20**
Waste Burning		
Agricultural Debris	0.04	0.04
Range Management/other	0.03	0.03
Total Waste Burning	**0.07**	**0.07**
Industrial Processes		
Food & Agriculture	0.12	0.12
Mineral Processes	0.0	0.0
Metal Processes	0.0	0.0
Wood & Paper	0.10	0.10
Total Industrial Processes	**0.22**	**0.22**
Total Point Sources	**0.49**	**0.49**
STATIONARY SOURCES - AREA SOURCES		
Farming Operation	1.02	1.02
Construction & Demolition	1.34	1.34
Entrained Road Dust/Paved	9.27	9.27
Entrained Road Dust/Unpaved	5.44	5.44
Unplanned Fires	0.03	0.03
Municipal Solid Waste Disposal	0.02	0.02
Windblown Dust: Ag. Land	15.95	1,164.3
Windblown Dust: Dist. Land	11.15	813.9
Windblown Dust: Unpaved Roads	4.21	307.3
Total Area Sources	**48.43**	**2,302.62**
Total Stationary Sources	**48.92**	**2,303.11**

TABLE 3-1 (Continued)

1995 PM10 Emission Inventory by Major Source Category
Coachella Valley Study Area
(tons/day)

Source Category	Ann. Avg.	24-hour
MOBILE SOURCES		
On-Road Vehicles		
Light-Duty Passenger	0.23	0.23
Lt.- & Med.- Duty Trucks	0.08	0.08
Heavy-Duty Gas Trucks	0.03	0.03
Heavy-Duty Diesel Trucks	1.03	1.03
Total On-Road Vehicles	**1.38**	**1.38**
Other Mobile		
Off-Road	0.02	0.02
Trains	0.15	0.15
Aircraft/Government	0.0	0.0
Aircraft/Other	0.0	0.0
Mobile Equipment	0.07	0.07
Utility Equipment	0.01	0.01
Total Other Mobile	**0.26**	**0.26**
Total Mobile Sources	**1.64**	**1.64**
Total All Sources	**50.56**	**2,304.75**

REVISIONS TO THE PREVIOUS EMISSIONS INVENTORY

As noted in Chapter 2, ambient PM10 levels during non-high-wind events rose in the 1999 and 2000, and were above the annual average standard level even after dropping in 2001. AQMD staff had noted a significant rise in construction activity during that time, particularly in the commercial construction of several large recreational (e.g., tennis, golf courses) sites or communities. Coupled with this increase, AQMD staff also noted compliance problems at many of these sites. Complaints and Notices of Violations (NOVs) rose by a factor of 10 from preceeding years. Most NOVs were for Rule 403, although NOVs were written for Rules 401, 402 (Public Nuisance) and 403.1. Table 3-2 summarizes the complaints and NOVs by year for 1998 through 2001:

TABLE 3-2

NOVs and Complaints for 1998 through 2001
(Note: some NOVs may contain multiple rule infractions)

Year	Complaints	NOVs
1998	103	4
1999	426	31
2000	1401	30
2001	404	46

Construction Emissions

It is difficult to draw absolute conclusions from the complaint and NOV history, since AQMD staff had held meetings to increase public awareness of dust and had significantly increased its own enforcement activities. To better quantify the impact of increased construction, AQMD staff has obtained the latest Construction Industry Research Board (CIRB) data for the Coachella Valley (see Table 3-3). Residential development is presented in terms of acreage and commercial/industrial/governmental construction is presented in terms of valuation (millions). To aid with comparisons, all valuation data is presented in 1977 dollars. Year 2001 data is preliminary and subject to change. 1993 CIRB data was used in preparing the 1996 CV Plan emissions inventory.

TABLE 3-3

CIRB Data

Year	Residential (acreage)	Commercial ($ millions)	Industrial ($ millions)	Government, etc. ($ millions)
1993	264	13	1.0	6.3
1998	488	337	8.1	20.9
1999	533	391	7.2	31.9
2000	618	439	14.6	53.3
2001	627	458	4.2	29.7

This data clearly shows an order of magnitude increase in commercial development from 1993 and significant increases in other construction categories. Based on this data and the latest CARB emission factors, AQMD staff has calculated the 2000 construction emissions (non-road) to be 7.36 tons/day. This can be compared with the 1996 CV Plan emissions estimate of 0.7 tons/day for non-road construction emissions in 1995. The low emissions in the 1996 CV Plan reflected a level of construction activity that was occurring during an economic recession during the mid-90s. The 2002 CVSIP reflects the construction emissions that are currently occurring during a building boom.

Emissions have been revised for one other source category – road construction. The 1996 CV Plan was based on activity levels for road construction as determined by subtracting previous year road length estimates from current year estimates. This

resulted in road construction emissions being estimated at 0.7 tons/day. However, based on comment received after the adoption of the 1996 CV Plan and subsequent work done by both CARB and SCAG, AQMD staff is revising the road construction emissions to reflect the estimates contained in the 2001 RTP Transportation Conformity Reports prepared by SCAG in 2001. For the 2002 CVSIP, road construction in 2000 is estimated to be 0.06 tons/day, a significant decrease from previous estimates.

Mobile Sources

Intensive efforts are underway by CARB and others to revise the mobile source emissions model EMFAC and the related planning assumptions to improve the mobile source emissions inventory. The results of this work will not be available in time to meet the statutory deadline for the 2002 CVSIP. Thus, the 2002 CVSIP relies on the on-road and off-road mobile source emissions inventory in the 1996 CV Plan. Those inventories are based on EMFAC7G and SCAG planning assumptions used in the 1997 AQMP. As noted in Chapter 8, AQMD is making the SIP commitment to revise the 2002 CVSIP in 2003 to reflect the latest approved version of EMFAC and the latest approved planning assumptions. It will also present a revised transportation conformity budget in that revised SIP.

Other Source Categories

Although there may have been changes to source categories other than construction, AQMD staff has not seen changes in activity or violations that would result in the need to alter these categories for the purposes of the 2002 CVSIP. Thus, all other emission categories have not been revised. The 1995 estimates have been grown to the new base year of 2000, based on the 1996 CV Plan growth assumptions. The emissions in these categories will be revisited in the 2003 revision of the 2002 CVSIP described above.

2002 CVSIP EMISSIONS INVENTORY

As indicated in Table 3-4, about 55 tons of PM10 were emitted on an average day in the Coachella Valley in 2000 (compared with the 1996 CV Plan estimate of 49 tons/day for 1995). Approximately 53 tons/day (~ 96% of the total) were fugitive dust emissions from wind erosion of disturbed sources, entrained road dust, construction and demolition activity, and farming operations. About 1.5 tons/day of primary PM10 emissions are emitted by mobile sources in the study area, with heavy-duty diesel trucks accounting for over half of the total. However, mobile sources contribute to PM10 exceedances through entrained paved road dust (~7 tons per day) and entrained unpaved road dust (~5 tons per day). Existing control programs are incorporated into the 2000 base year inventory, including the Clean Streets Management Program. The control efficiency of previous control programs has been described and documented in the 1990 CVSIP , the 1994 CVSIP, the 1996 CV Plan, as well as staff reports for the AQMD's fugitive dust rules. As described in the 1996 CV Plan, the enhanced street sweeping program targets higher use roadways, therefore, the control factor is only applied to collector and major streets in the Coachella Valley.

TABLE 3-4

2000 PM10 Emission Inventory by Major Source Category
Coachella Valley Study Area (tons/day)

Source Category	Ann. Avg.	24-hour
STATIONARY SOURCES - POINT SOURCES		
Fuel Combustion		
Other Mfg./Industrial	0.03	0.03
Other Service/Commerce	0.01	0.01
Residential	0.15	0.15
Total Fuel Combustion	**0.19**	**0.19**
Waste Burning		
Agricultural Debris	0.04	0.04
Range Management/other	0.03	0.03
Total Waste Burning	**0.07**	**0.07**
Industrial Processes		
Food & Agriculture	0.18	0.18
Mineral Processes	0.0	0.0
Metal Processes	0.0	0.0
Wood & Paper	0.11	0.11
Total Industrial Processes	**0.29**	**0.29**
Total Point Sources	**0.55**	**0.55**
STATIONARY SOURCES - AREA SOURCES		
Farming Operation	1.06	1.02
Construction & Demolition	7.42	7.42
Entrained Road Dust/Paved	7.29	7.29
Entrained Road Dust/Unpaved	5.44	5.44
Unplanned Fires	0.03	0.03
Municipal Solid Waste Disposal	0.02	0.02
Windblown Dust: Ag. Land	15.95	1,164.3
Windblown Dust: Dist. Land	11.15	813.9
Windblown Dust: Unpaved Roads	4.21	307.3
Total Area Sources	**52.57**	**2,306.82**
Total Stationary Sources	**53.12**	**2,307.31**

TABLE 3-4 (Continued)

2000 PM10 Emission Inventory by Major Source Category
Coachella Valley Study Area (tons/day)

Source Category	Ann. Avg.	24-hour
MOBILE SOURCES		
On-Road Vehicles		
Light-Duty Passenger	0.18	0.18
Lt.- & Med.- Duty Trucks	0.10	0.10
Heavy-Duty Gas Trucks	0.05	0.05
Heavy-Duty Diesel Trucks	0.76	0.76
Total On-Road Vehicles	**1.09**	**1.09**
Other Mobile		
Off-Road	0.03	0.03
Trains	0.12	0.12
Aircraft/Government	0.0	0.0
Aircraft/Other	0.0	0.0
Mobile Equipment	0.07	0.07
Utility Equipment	0.01	0.01
Total Other Mobile	**0.23**	**0.23**
Total Mobile Sources	**1.32**	**1.32**
Total All Sources	**54.44**	**2,308.63**

Future Year Emissions

Future year emissions inventories were developed for 2003 and 2006 (see Tables 3-5 and 3-6, respectively), based on a specific set of projected growth rates for population, industry, and motor vehicle activity in the Coachella Valley used in the 1996 CV Plan. It was anticipated that 2006 would be the ultimate attainment year, with 2003 being used to determine intermediate reasonable further progress.

It should be noted that the 2003 and 2006 inventories are based on growing the high level of construction PM10 emissions estimated for 2000 using the previous growth factors. This results in a conservatively high estimate of future emissions in 2003 and 2006. If, as expected, the level of construction slows as prime areas are built out, actual future emissions may be less than these estimates.

TABLE 3-5

2003 PM10 Emission Inventory by Major Source Category
Coachella Valley Study Area (tons/day)

Source Category	Ann. Avg.	24-hour
STATIONARY SOURCES - POINT SOURCES		
Fuel Combustion		
Other Mfg./Industrial	0.03	0.03
Other Service/Commerce	0.02	0.02
Residential	0.17	0.17
Total Fuel Combustion	**0.22**	**0.22**
Waste Burning		
Agricultural Debris	0.04	0.04
Range Management/other	0.03	0.03
Total Waste Burning	**0.07**	**0.07**
Industrial Processes		
Food & Agriculture	0.18	0.18
Mineral Processes	0.0	0.0
Metal Processes	0.0	0.0
Wood & Paper	0.12	0.12
Total Industrial Processes	**0.30**	**0.30**
Total Point Sources	**0.59**	**0.59**
STATIONARY SOURCES - AREA SOURCES		
Farming Operation	0.98	0.98
Construction & Demolition	7.79	7.79
Entrained Road Dust/Paved	7.61	7.61
Entrained Road Dust/Unpaved	5.44	5.44
Unplanned Fires	0.03	0.03
Municipal Solid Waste Disposal	0.02	0.02
Windblown Dust: Ag. Land	15.95	1,164.3
Windblown Dust: Dist. Land	11.15	813.9
Windblown Dust: Unpaved Roads	4.21	307.3
Total Area Sources	**53.18**	**2,307.37**
Total Stationary Sources	**53.77**	**2,307.96**

TABLE 3-5 (Continued)

2003 PM10 Emission Inventory by Major Source Category
Coachella Valley Study Area (tons/day)

Source Category	Ann. Avg.	24-hour
MOBILE SOURCES		
On-Road Vehicles		
Light-Duty Passenger	0.18	0.18
Lt.- & Med.- Duty Trucks	0.10	0.10
Heavy-Duty Gas Trucks	0.06	0.06
Heavy-Duty Diesel Trucks	0.70	0.70
Total On-Road Vehicles	**1.04**	**1.04**
Other Mobile		
Off-Road	0.03	0.03
Trains	0.12	0.12
Aircraft/Government	0.0	0.0
Aircraft/Other	0.0	0.0
Mobile Equipment	0.07	0.07
Utility Equipment	0.01	0.01
Total Other Mobile	**0.23**	**0.23**
Total Mobile Sources	**1.27**	**1.27**
Total All Sources	**55.04**	**2,309.23**

TABLE 3-6

2006 PM10 Emission Inventory by Major Source Category
Coachella Valley Study Area (tons/day)

Source Category	Ann. Avg.	24-hour
STATIONARY SOURCES - POINT SOURCES		
Fuel Combustion		
Other Mfg./Industrial	0.03	0.03
Other Service/Commerce	0.02	0.02
Residential	0.20	0.20
Total Fuel Combustion	**0.25**	**0.25**
Waste Burning		
Agricultural Debris	0.03	0.03
Range Management/other	0.03	0.03
Total Waste Burning	**0.06**	**0.06**
Industrial Processes		
Food & Agriculture	0.18	0.18
Mineral Processes	0.0	0.0
Metal Processes	0.0	0.0
Wood & Paper	0.12	0.12
Total Industrial Processes	**0.30**	**0.30**
Total Point Sources	**0.61**	**0.61**
STATIONARY SOURCES - AREA SOURCES		
Farming Operation	0.92	0.92
Construction & Demolition	8.06	8.06
Entrained Road Dust/Paved	7.93	7.93
Entrained Road Dust/Unpaved	5.44	5.44
Unplanned Fires	0.03	0.03
Municipal Solid Waste Disposal	0.02	0.02
Windblown Dust: Ag. Land	15.95	1,164.3
Windblown Dust: Dist. Land	11.15	813.9
Windblown Dust: Unpaved Roads	4.21	307.3
Total Area Sources	**53.71**	**2,307.90**
Total Stationary Sources	**54.32**	**2,308.51**

TABLE 3-6 (Continued)

2006 PM10 Emission Inventory by Major Source Category
Coachella Valley Study Area (tons/day)

Source Category	Ann. Avg.	24-hour
MOBILE SOURCES		
On-Road Vehicles		
Light-Duty Passenger	0.20	0.20
Lt.- & Med.- Duty Trucks	0.11	0.11
Heavy-Duty Gas Trucks	0.06	0.06
Heavy-Duty Diesel Trucks	0.61	0.61
Total On-Road Vehicles	**0.98**	**0.98**
Other Mobile		
Off-Road	0.03	0.03
Trains	0.12	0.12
Aircraft/Government	0.0	0.0
Aircraft/Other	0.0	0.0
Mobile Equipment	0.07	0.07
Utility Equipment	0.01	0.01
Total Other Mobile	**0.23**	**0.23**
Total Mobile Sources	**1.21**	**1.21**
Total All Sources	**55.53**	**2,309.72**

Future Year Controlled Emissions

A future year controlled emissions inventory was developed based on implementation of the control measures in Chapter 5. [Note that the modeling demonstration also accounts for the reduction in the transport of secondary PM10 emissions from the South Coast Air Basin due to the projected decreases in PM10 levels there.] The control strategy calls for adoption of the control measures between July 2002 and January 1, 2004, as expeditiously as possible. The construction and earth-moving activity control measure (CV BCM-1) can be implemented immediately upon adoption, which will occur in late 2003. Since the analysis is focussed on the annual average PM10 standard and controls could not be implemented until Fall 2003 at the earliest, no annual average emission reductions can be assumed for 2003. CV BCM-2 (Disturbed Vacant Lands) and CV BCM-6 (Agriculture) will be fully implemented in 2004. Others, such as for paved roads and unpaved roads (CV BCM-4 and CV BCM-3, respectively), may be implemented in stages after adoption (no later than December 31, 2003), as described in Chapter 5. As such, the estimate of future year controlled emissions takes no credit for implementation in 2003, with emission reductions beginning in 2004 and the majority of emission reductions assumed by

2006, with full implementation of the SIP commitment. (Additional unpaved road treatment or paving will continue after 2006). Accordingly, the remaining emissions in 2006 after the implementation of future controls are presented in Tables 3-7. AQMD is committed to expeditiously adopt and implement the control measures, no later than the schedule specified in Chapter 5. Additionally, this plan assumes that the high level of construction will continue and that the most stringent level of control of all sources will be necessary to offset those emissions to expeditiously attain the PM10 standards by 2006. If construction activity slows toward the previous growth projections, attainment may occur sooner than 2006, in the most expeditious manner possible. Although expeditious implementation will result in some emission reductions in 2004 and 2005, full emission reduction potential described in Chapter 5 is not expected until 2006. The impact of the phased implementation of certain control measures and time necessary to achieve full control penetration and rule compliance leads to the conclusion that 2006 will be the earliest attainment date practicable. The specific levels of reductions in 2004 and 2005 cannot be sufficiently quantified to provide a meaningful attainment demonstration.

Transport of secondary particulates and emissions into the Coachella Valley from the South Coast Air Basin is expected to decrease in future years due to control in that area. The AQMD's 1997 AQMP outlines an overall control strategy that will ultimately achieve ambient air quality standards in the South Coast Air Basin. Short- and intermediate-term measures are proposed that make use of available technologies and management practices between the years 1997 and 2005. These measures are designed to satisfy the federal Clean Air Act requirement of reasonably available control technologies. Long-term measures will rely on the advancement of technologies and control methods that can reasonably be expected to occur between 2005 and 2010. The impact of these controls will reduce the amount of transported particulates into the Coachella Valley from both direct PM10 emissions and from secondary particulate resulting from Basin precursor emissions such as VOCs, NOx, SOx, and ammonia. A full discussion of the emissions that originate in the South Coast Air Basin can be found in the 1997 AQMP (Chapter 3 and Appendix III). As seen in attainment demonstration in Chapter 6, South Coast Air Basin controls reduce the level of transported PM10 to the Coachella Valley in future years in the control scenarios.

TABLE 3-7

2006 PM10 Emission Inventory by Major Source Category With 2002 CVSIP Controls
Coachella Valley Study Area (tons/day)

Source Category	Ann. Avg.	24-hour
STATIONARY SOURCES - POINT SOURCES		
Fuel Combustion		
Other Mfg./Industrial	0.03	0.03
Other Service/Commerce	0.02	0.02
Residential	0.20	0.20
Total Fuel Combustion	**0.25**	**0.25**
Waste Burning		
Agricultural Debris	0.03	0.03
Range Management/other	0.03	0.03
Total Waste Burning	**0.06**	**0.06**
Industrial Processes		
Food & Agriculture	0.18	0.18
Mineral Processes	0.0	0.0
Metal Processes	0.0	0.0
Wood & Paper	0.12	0.12
Total Industrial Processes	**0.30**	**0.30**
Total Point Sources	**0.61**	**0.61**
STATIONARY SOURCES - AREA SOURCES		
Farming Operation	0.90	0.90
Construction & Demolition	7.25	7.25
Entrained Road Dust/Paved	6.27	6.27
Entrained Road Dust/Unpaved	4.72	4.72
Unplanned Fires	0.03	0.03
Municipal Solid Waste Disposal	0.02	0.02
Windblown Dust: Ag. Land	15.95	1,164.3
Windblown Dust: Dist. Land	11.15	813.9
Windblown Dust: Unpaved Roads	4.21	307.3
Total Area Sources	**50.50**	**2,304.69**
Total Stationary Sources	**51.11**	**2,305.30**

TABLE 3-7 (Continued)

2006 PM10 Emission Inventory by Major Source Category With 2002 CVSIP Controls
Coachella Valley Study Area (tons/day)

Source Category	Ann. Avg.	24-hour
MOBILE SOURCES		
On-Road Vehicles		
Light-Duty Passenger	0.20	0.20
Lt.- & Med.- Duty Trucks	0.11	0.11
Heavy-Duty Gas Trucks	0.06	0.06
Heavy-Duty Diesel Trucks	0.61	0.61
Total On-Road Vehicles	**0.98**	**0.98**
Other Mobile		
Off-Road	0.03	0.03
Trains	0.12	0.12
Aircraft/Government	0.0	0.0
Aircraft/Other	0.0	0.0
Mobile Equipment	0.07	0.07
Utility Equipment	0.01	0.01
Total Other Mobile	**0.23**	**0.23**
Total Mobile Sources	**1.21**	**1.21**
Total All Sources	**52.32**	**2306.51**

Transportation Conformity Emission Budgets for Coachella Valley

40 CFR Part 93 requires that emission budgets for criteria air pollutants be specified in the SIP for transportation conformity use. Table 3-9 provides the emission budgets after implementation of the 2002 CVSIP controls for the milestone year (2003) and 2006 (the attainment year), consistent with the applicable requirements for reasonable further progress and attainment [40 CFR 93.118(e)(4)(iv)]. The emissions budget is used in conformity findings by other regulatory agencies. Conformity determinations for years after the attainment year are not required by U.S. EPA and are typically based on the emissions budgets for the attainment year. Emissions budgets after the attainment year may be submitted to U.S. EPA for transportation conformity purposes, provided an attainment demonstration is made.

As described earlier in this chapter, the mobile source portion of the 2002 CVSIP emissions inventory is based on EMFAC7G. Although extensive efforts are ongoing to update EMFAC, these efforts were not completed in time for inclusion into the 2002 CVSIP. Based on U.S. EPA comments, the AQMD will make a SIP commitment in the 2002 CVSIP Board Resolution to revise the 2002 CVSIP in 2003

to reflect, at a minimum, the latest approved version of EMFAC and the latest approved planning assumptions. This process will also present a revised Coachella Valley transportation conformity budget and will be submitted to CARB and the U.S. EPA for review and inclusion as a SIP addendum.

TABLE 3-8

2003 and 2006 Transportation Conformity Emission Budgets for the Coachella Valley (tons/day)

	2003 PM10	**2006 PM10**
Motor Vehicles	1.04	0.98
Reentrained paved road dust	7.61	6.27
Reentrained unpaved road dust	5.44	4.72
Road construction	0.06	0.06
Total	**14.15**	**12.03**