C H A P T E R 1

INTRODUCTION

Plan Purpose

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PLAN PURPOSE

The Coachella Valley is currently designated as a serious nonattainment area for PM_{10} (particulate matter with an aerodynamic diameter of 10 microns or less). Under the federal Clean Air Act (CAA), an area can be redesignated as attainment if, among other requirements, the U.S. Environmental Protection Agency (U.S. EPA) determines that the national ambient air quality standards (NAAQS) have been attained. U.S. EPA guidance further states that a determination of compliance with the NAAQS must be based on three complete, consecutive calendar years of quality-assured air quality monitoring data[1]. In applying U.S. EPA's recently approved Natural Events Policy (NEP), the Coachella Valley has not violated either the 24-hour or annual average PM_{10} standards during the last three calendar years (1993 through 1995). Accordingly, the purpose of this plan is to revise the previous PM_{10} State Implementation Plans (SIPs) to request a redesignation of the Coachella Valley to attainment for PM_{10}, and to submit the attendant maintenance plan and other required actions to qualify for such redesignation by the U.S. EPA.

STATUTORY BACKGROUND

Moderate Nonattainment

In November 1990, amendments to the federal CAA were signed into law, setting into motion new statutory requirements for attaining federal NAAQS for PM_{10}. All areas in the United States that were previously designated as federal nonattainment areas for PM_{10}, including the Coachella Valley, were initially designated as "moderate" PM_{10} nonattainment areas.

Under Section 189(a) of the CAA, revisions to the State Implementation Plan (SIP) for PM_{10} were due by November 15, 1991, incorporating "reasonably available control measures" (RACM) for PM_{10} and indicating an attainment date. In response to these requirements, the District adopted the "State Implementation Plan for PM_{10} in the Coachella Valley" (90-CVSIP) in November 1990. The 90-CVSIP identified candidate control measures and demonstrated attainment of the NAAQS for PM_{10} by the year 1995, one year after the statutory limit for moderate nonattainment areas.

[1] U.S. EPA, *Memorandum to Division Directors, Subject: Procedures for Processing Requests to Redesiginate Areas to Attainment,* Office of Air Quality Planning and Standards, Research Triangle Park, page 2, September 4, 1992.

Serious Nonattainment

CAA Section 188(b) specifies that any area that cannot attain the standards by December 1994 would subsequently be redesignated as a "serious" nonattainment area. In January 1993, U.S. EPA completed its initial redesignation process, and included the Coachella Valley among five nationwide areas redesignated as "serious" effective February 8, 1993. Section 189(b) of the CAA further specifies that a SIP revision is due within 18 months of the redesignation (August 8, 1994). This revision must assure that "best available control measures" (BACM) will be implemented and a demonstration of attainment will be submitted within four years of the redesignation date (February 8, 1997). In response to the CAA requirements for "serious areas", the District prepared a SIP revision (94-CVSIP) that identified candidate BACM for implementation prior to February 8, 1997.

Redesignation Request

Section 107 (d)(3)(E) of the CAA states that an area can be redesignated to attainment if the following five conditions are met:

1. The U.S. EPA has determined that the NAAQS have been attained.

2. The applicable implementation plan has been fully approved by U.S. EPA under Section 110(k).

3. The U.S. EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions.

4. The State has met all applicable requirements for the area under Section 110 and Part D.

5. The U.S. EPA has fully approved a maintenance plan, including a contingency plan, for the area under Section 175A.

This document demonstrates that, pending actions by the U.S. EPA all of the conditions required of a State have been met. The District is, therefore, requesting the redesignation of the Coachella Valley as attainment for PM_{10}. Chapter 5 (Redesignation Request) includes the references for each of the above listed conditions.

PM_{10} HEALTH EFFECTS

There are essentially two sources of PM10: natural sources, including sea salts, volcanic ash, and pollens, and man-made or anthropogenic sources. Man-made sources originate from direct emissions, such as industrial facilities; fugitive dust sources (e.g.,

construction sites) and paved and unpaved road dust; and secondary particulate matter that is formed in the atmosphere by the transformation of emitted gases such as volatile organic compounds (VOC), oxides of nitrogen (NOx) and oxides of sulfur (SOx). Studies indicate that approximately three-quarters of the Coachella Valley's PM_{10} are attributable to direct emissions (e.g., primarily fugitive dust, and to some extent, agricultural burning) while the remaining quarter is from secondary particulates.[2]

A consistent correlation between elevated ambient PM_{10} levels and an associated increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, a reduction in life-span, and the possibility of an increased incidence of cancer.

Daily PM_{10} levels are also related to acute respiratory hospital admissions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children and to increased medication use in children and adults with asthma.

The elderly, people with preexisting respiratory and /or cardiovascular disease and children appear to be the most susceptible to the effects of PM_{10}. There is a growing consensus among the scientific community that the fine fraction of PM_{10} may be relatively more toxic than the coarse fraction and is responsible for the majority of effects observed. Studies indicate that secondary particulates (nitrates, sulfates) are primarily within the fine fraction and primary particulates including fugitive dust are within the coarse fraction.

Although there is a growing body of scientific evidence to support the theory that fine particles are probably more toxic than the coarse particles, no evidence exists to support the corollary that coarse particles are relatively safe. Working with funding and staff support provided by the U.S. EPA, the District has entered into an agreement to conduct a three-year, two-phase study (Coachella Valley Health Effects Study) with staff from the California Public Health Foundation and the State Office of Environmental Health Hazard Assessment to determine whether course particles are as much of a health concern as fine particles generated from combustion sources. Further discussion of the study is provided in Chapter 6.

COACHELLA VALLEY AREA DESCRIPTION

The Coachella Valley PM_{10} nonattainment area consists of an approximately 2,500 square mile portion of central Riverside County (see Figures 1-1 and 1-2). The Valley

[2] South Coast Air Quality Management District (District), Moderate Area PM_{10} State Implementation Plan for the Coachella Valley. November 1990

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.

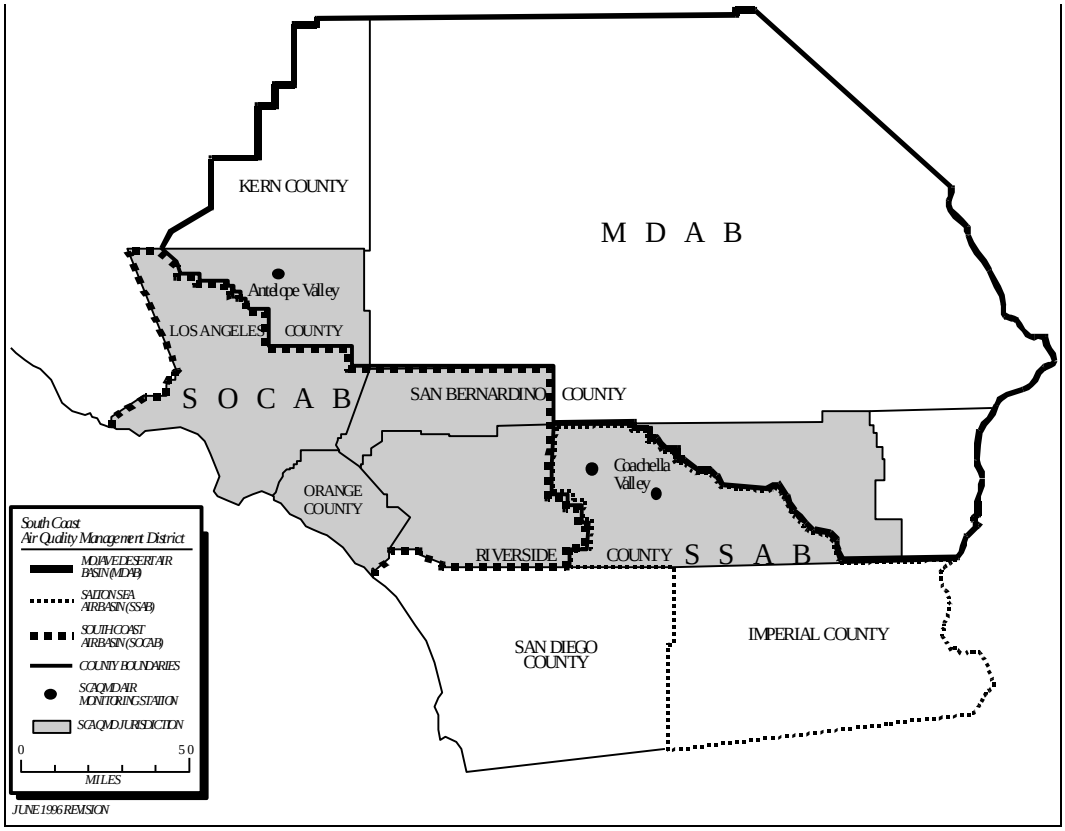

FIGURE 1-1

District, Air Basins, and Coachella Valley Air Monitoring Stations

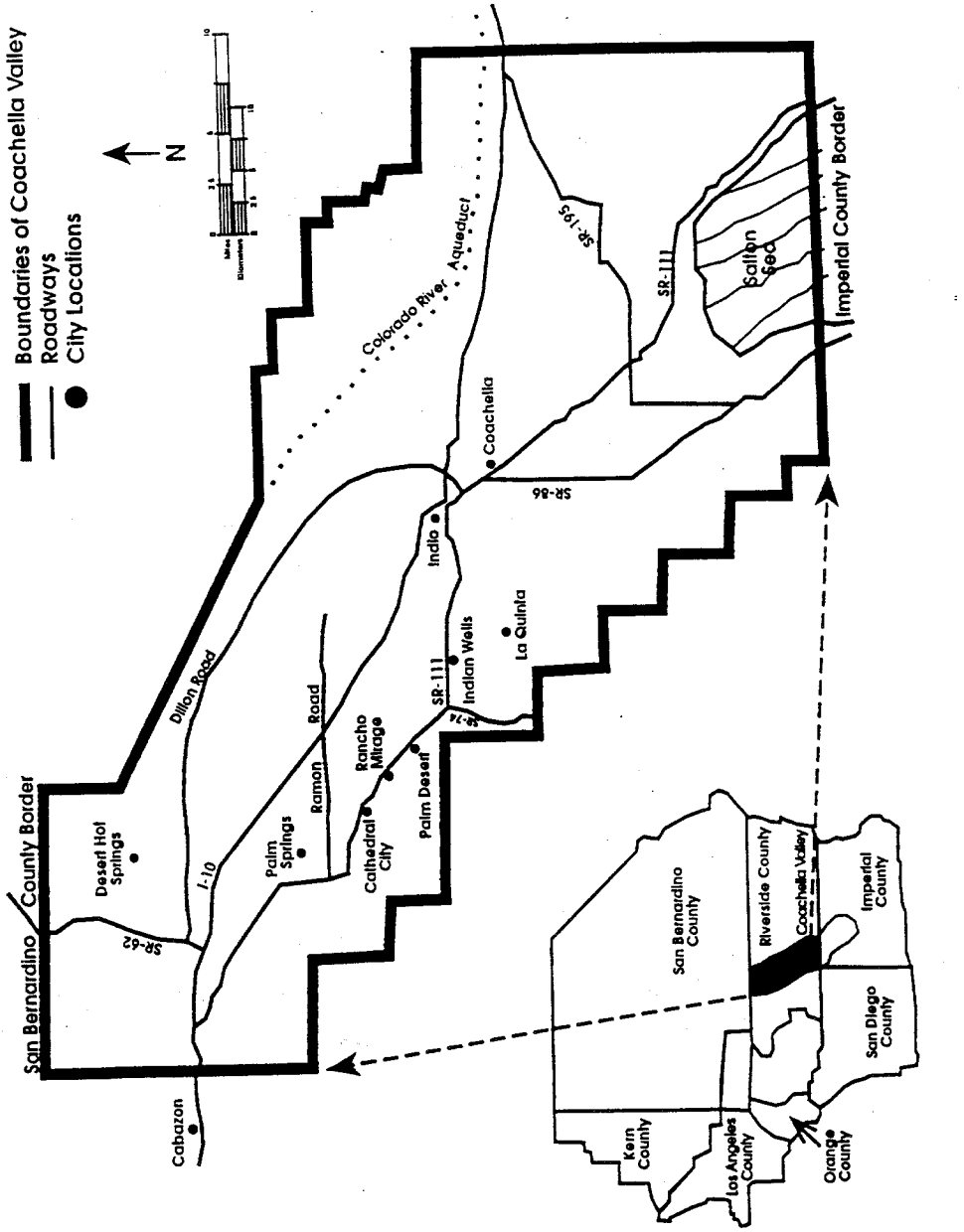

FIGURE 1-2

Coachella Valley Communities

As shown in Table 1-1, the Coachella Valley is a rapidly growing area, with the population expected to 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

Historical Population and Population Forecasts

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

Meteorology/Climate

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.

Average seasonal temperatures and precipitation levels are shown in Table 1-2 for two sites in the Coachella Valley.

TABLE 1-2

Seasonal Temperature and Precipitation Data

SITE	MONTH	MAX TEMP (°F)	MIN TEMP (°F)	PRECIP. (inches)
Palm Springs	January	69	40	1.03
	April	86	52	0.21
	July	108	73	0.17
	October	91	57	0.28
Thermal/Indio	January	71	39	0.66
	April	88	57	0.11
	July	107	78	0.07
	October	92	58	0.20

Winds

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.

There are two primary causes of these widespread wind conditions: (1) strong pressure and air mass density differences between the desert air mass and the marine-modified coastal air mass; and (2) strong downbursts from summertime thunderstorms. In the first condition, surface low pressure in the desert causes cooler and denser ocean-modified air to move through Banning Pass into the Coachella Valley. As synoptic (or very large-scale) weather patterns reinforce the localized regime through wind-inducing surface pressure gradients, strong and widespread winds result that frequently exceed 40 mph. These winds can persist for many hours and generally have a west-through-north wind component.

By comparison, winds generated by summer thunderstorms are more localized in nature, but the strong downward rushes of cooler air can produce wind gusts that occasionally exceed 60 mph. These wind gusts and gust "fronts" can pick up large amounts of natural desert soils which, once suspended in the atmosphere, can be transported over large distances, even though the gustiness subsides. Since the necessary weather pattern for producing such thunderstorms is one in which high level tropical moisture is transported into the deserts from areas to the southeast, these storms are typically associated with erratic southeasterly winds.

An annual wind rose for the District's Palm Springs air quality monitoring station is shown in Figure 1-3 for the eight-year period, 1988-1995. Northwesterly winds dominate throughout the year, with southeasterly winds showing a secondary peak frequency. Stronger winds occur most often in the spring and summer months. High-wind situations, which can produce widespread dust storms, are limited primarily to the spring months of April through June, although these conditions more rarely can occur any time during the year. In Palm Springs, where the winds are not as severe as other parts of the Valley, the frequency of hourly-averaged wind speeds over 30 mph is very low.

Blowsand

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 PM_{10} in two ways: (1) by direct particle erosion and fragmentation (natural PM_{10}), and (2) by secondary effects, as sand deposits on road surfaces are ground into PM_{10} by moving vehicles and resuspended in the air (man-made PM_{10}). The following is a summary description of the Valley's blowsand problem, as contained in a report prepared for the District[3]. Appendix A contains a complete version of the initial blowsand study.

[3] Weaver, Donald, Initial Blowsand Study for the Coachella Valley, October 1992.

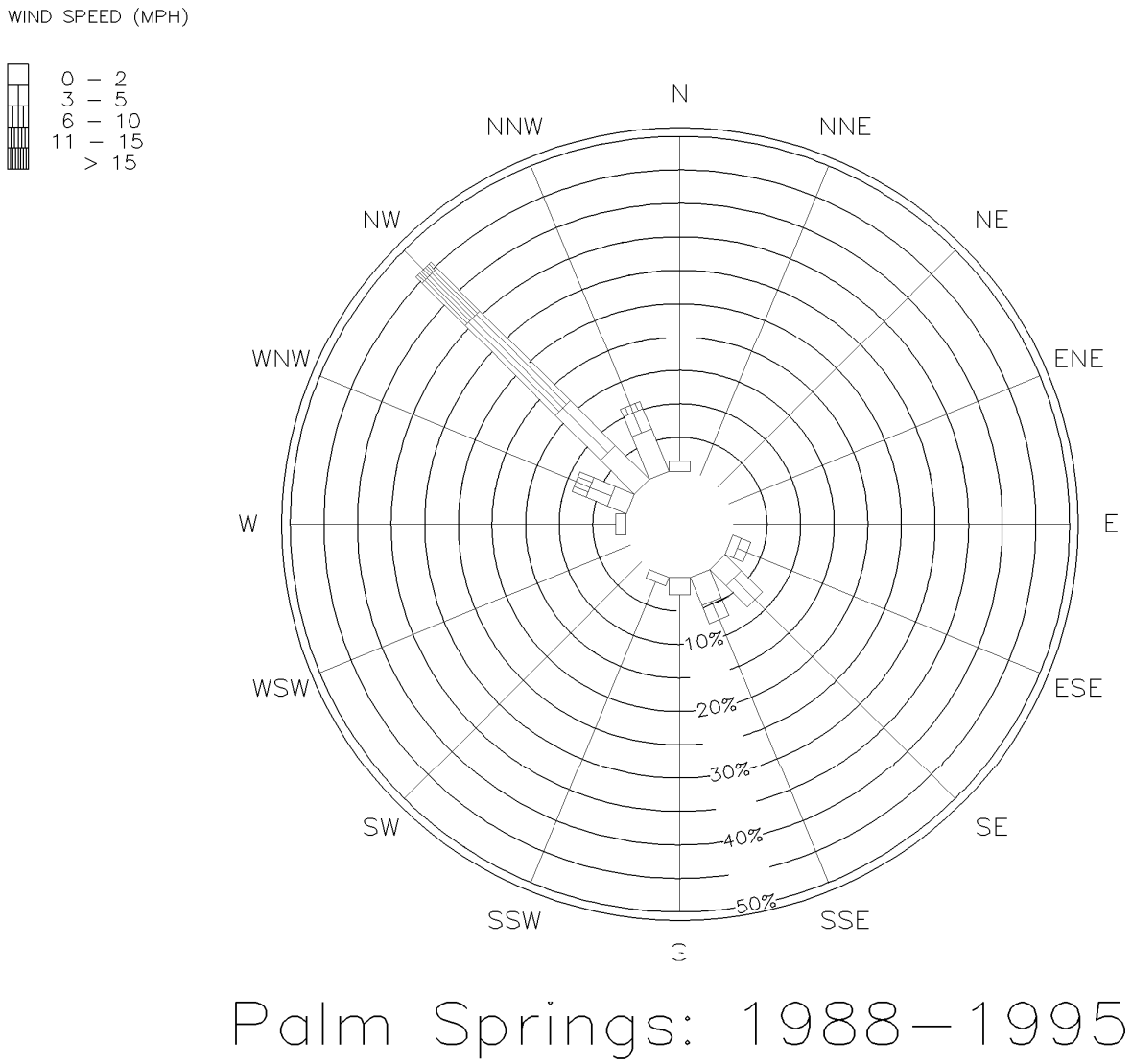

FIGURE 1-3
Annual Wind Rose for the Palm Springs Air Monitoring Station
Based on 1988-1995 Hourly-Averaged Wind Data
(Numbers at each concentric circle indicate the percent frequency of occurrence.)

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.

SUMMARY OF PREVIOUS PLAN IMPLEMENTATION

Since adoption of the 90-CVSIP, the local Coachella Valley jurisdictions, the Coachella Valley Association of Governments (CVAG), and the District have worked closely to implement the various 90-CVSIP control measures. This team approach has resulted in what is likely the most comprehensive dust control program in the nation. Table 1-3 lists the 90-CVSIP control measures and describes the relevant implementation status. More details regarding control measure implementation are provided in the following sections.

Moderate Nonattainment (90-CVSIP)

Since adoption of the 90-CVSIP, local governments have played a major role in carrying out many key dust control actions. The following paragraphs describe these local initiated fugitive dust control efforts as well as those implemented by the District.

TABLE 1-3

Summary of Coachella Valley State Implementation Plan (90-CVSIP)
PM_{10} Control Measures

90-CVSIP Control Measures	No.	Implementation Status
1. Open Area Wind Erosion		
Reduce the transport of "blowsand" adjacent to paved roadways and residential areas by: a1) chemically stabilizing soil surfaces within at least 100 feet (on the windward sides) of roadways or residential areas; or a2) establishing snow fence windbreaks within 50 feet (on the windward sides) of roadways or residential areas	1a	Intermodal Surface Transportation Efficiency Act (ISTEA) funds are being used for snow fence and chemical stabilization projects. Appendix C contains a list of projects and locations.
Establish tree windbreaks immediately downwind of "habitat preserves" and other strategic open areas	1b	Because the effectiveness of tree barriers is low during early years, and because irrigation is limited, snow fences are being used in lieu of tree wind breaks. Appendix C contains a list of wind fence projects.
Require property owners of vacant lots with visible crustal disturbances or active blowsand accumulations within areas of incorporated cities to restore vegetative covering so that at least 50 percent of the surface area is covered by vegetation within one year of planting. As an option, property owners may use chemical stabilizers to cover at least 90 percent of the property on an annual basis	1c	Implemented via District Rule 403.1 - Wind Entrainment of Fugitive Dust, subdivision (d)(2) adopted in 1993, and local dust control ordinances which require property owners to discourage use of off-road vehicles except in designated areas. Section 1-4(4) of the model dust control ordinance specifies the controls implemented by local governments.
Prohibit earth/soil moving on days when wind gusts exceed or are expected to exceed 30 mph	1d	Implemented via District Rule 403.1 - Wind Entrainment of Fugitive Dust subdivision (d)(1) which requires activities seeking an exemption from Rule 403 requirements under subdivision (g)(2)(A) to monitor wind conditions to determine when wind speeds exceed 25 miles per hour (mph). Under subdivision (g)(2)(A) of Rule 403 earth-moving operations are required to either cease all active operations or apply water to soil not more than 15 minutes prior to moving such soil.

TABLE 1-3

Summary of Coachella Valley State Implementation Plan (90-CVSIP)
PM_{10} Control Measures (Continued)

90-CVSIP Control Measures	No.	Implementation Status
2. Agricultural Wind Erosion		
Prohibit tilling operations on days when wind gusts exceed or are expected to exceed 30 mph	2a	Implemented via District Rule 403.1 - Wind Entrainment of Fugitive Dust subdivision (d)(4) which requires agricultural tilling or soil mulching activities to cease when wind speeds exceed 25 miles per hour.
3. Unpaved Road Emissions Chemically treat unpaved road surfaces (public and private): a1) with activity level of at least 20 vehicle trips per day; a2) with a targeted minimum of at least 30 percent of all qualifying roads; a3) with priorities set by distance within and from population centers.	3a	Local jurisdictions have adopted ordinances implementing section 1-4 (2) of the model dust control ordinance. This section specifies speed limit control (15 mph) for unpaved roads with 20 - 150 ADT; and chemical stabilization or paving for those roads above 150 ADT. Appendix C lists the chemical stabilization/paving projects in the Coachella Valley for public roadways. These projects are higher use roadways that are located in the urbanized portions of the Coachella Valley.
Control dust from primary farm roads: b1) with activity level of at least 20 vehicle trips per day; b2) By using chemical stabilizers or water saturation	3b	Local jurisdictions have adopted ordinances implementing section 1-4 (2) of the model dust control ordinance. This section specifies speed control (15 mph) for all unpaved roads with 20 - 150 ADT; and chemical stabilization/paving for those roads above 150 ADT.
Require paving of unpaved parking lots c1) with a volume of at least 3,000 vehicles per year	3c	Local jurisdictions have adopted ordinances implementing section 1-4 (3) of the model dust control ordinance. This section requires paving of unpaved parking lots for more than eight vehicles as determined by the applicable zoning code. Chemical stabilization can be substituted if there would be economic hardships.

TABLE 1-3

Summary of Coachella Valley State Implementation Plan (90-CVSIP)
PM_{10} Control Measures (Continued)

90-CVSIP Control Measures	No.	Implementation Status
Set maximum speed limit on all unpaved roads at 15 mph	3d	Local jurisdictions have adopted ordinances implementing section 1-4 (2) of the model dust control ordinance. This section requires the establishment of 15 mph speed limits on unpaved roads with less than 20 trips per day. The California Motor Vehicle Code was amended to permit lowering speed limits on unpaved roads located within the jurisdictional boundaries of the South Coast AQMD to 15 miles per hour(CVC 22365).
4. Paved Road Emissions		
Establish sand-removal programs: a1) to remove visible sand/dirt accumulations from paved roads within 24 hours of the end of each blowsand event. a2) on a post-event basis, combined with routine street inspections	4a	Implemented through the Clean Streets Management program using ISTEA funding. Requires in-house or contract labor to respond to and remove blowsand accumulations on paved road surfaces.
Enhance routine street cleaning (sweeping)	4b	Recent tests have determined that "PM_{10}-efficient" street sweepers are now commercially available and can represent a viable PM_{10} control measure. CVAG has developed a program to purchase PM_{10}-efficient street sweepers with ISTEA funds for a regional street sweeping program. An expanded discussion of the program is provided in Chapter 1 and the resulting emissions reductions are discussed in Chapter 3.
Reduce emissions from unpaved shoulders: c1) by chemical stabilization; c2) within 200 feet of intersections; c3) within 25 feet of driveways	4c	ISTEA funding is currently being used to stabilize areas that contribute to paved road silt loadings. Appendix C includes a list of these projects.

TABLE 1-3

Summary of Coachella Valley State Implementation Plan (90-CVSIP)
PM_{10} Control Measures (Continued)

90-CVSIP Control Measures	No.	Implementation Status
Require contractors to pave construction access roads as soon as access roads are created: d1) paving must extend from the paved roadway; d2) paving must be cleaned daily	4d	Implemented via District Rule 403 which limits track-out to a maximum of 50 feet. Contractors have available a variety of measures to meet this requirement.
5. Construction/Demolition Emissions		
Require watering of all active construction projects: a1) with multiple daily applications, if necessary, to assure proper dust control a2) through the use of reclaimed or agricultural canal water	5a	Local jurisdictions have adopted ordinances implementing section 1-5 (1) of the model dust control ordinance. This section requires submittal of a dust control plan for all projects that require issuance of a grading permit. Watering is the primary control option for earth-moving activities.
Require the chemical treatment of unattended construction areas: b1) Defined as disturbed lands within construction projects which have been or are expected to be unused for at least four consecutive days	5b	Local jurisdictions have adopted ordinances implementing section 1-5 of the model dust control ordinance. This section requires the stabilization of inactive construction sites. Such stabilization must be sufficient to prevent visible emissions from crossing the property line.
Prohibit all construction grading activities on days when wind gusts exceed or are forecast to exceed 30 mph	5c	Implemented via District Rule 403.1. Refer to discussion under control measure number 1d.
Require trucks to maintain at least two feet of freeboard	5d	Provisions established under California Vehicle Code section 23114 require the covering of haul vehicles or, as an alternative, maintaining a minimum freeboard of six inches.
Require all trucks hauling dirt, sand soil, or other specified loose dirt material to be covered	5e	Rule 403, Table 1, Item (1E) and (2E) require haul vehicles to be covered or comply with the vehicle freeboard requirements.
Require planting of tree windbreaks: f1) on the windward perimeter of construction projects; f2) only if adjacent to open lands or lots	5f	Refer to discussion under control measure 1b.

TABLE 1-3

Summary of Coachella Valley State Implementation Plan (90-CVSIP)
PM_{10} Control Measures (Concluded)

90-CVSIP Control Measures	No.	Implementation Status
Encourage the planting of vegetative ground cover as soon as possible on construction sites	5g	Local jurisdictions have adopted ordinances implementing section 1-5 (1) of the model dust control ordinance. This section encourages the revegetation of inactive construction sites. Additionally, Rule 403, Table 2, Item (3c) encourages revegetation of construction sites as a cost-effective alternative to chemical stabilization.

Model Dust Control Ordinance

Shortly after adoption of the 90-CVSIP, the PM_{10} Technical Working Group (TWG), comprised of Coachella Valley Association of Governments (CVAG), local government, and District staff, was organized to facilitate the implementation actions required under the 90-CVSIP. Four TWG subgroups were also established to assist in the evaluation of technical information. One of these subgroups was given the responsibility for the development of a model dust control ordinance that was to later be adopted by each of the Coachella Valley jurisdictions.

Each of the nine Coachella Valley cities and the County of Riverside have since adopted dust control ordinances based on the components of the model dust control ordinance. The District has 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. These ordinances have been submitted to the U.S. EPA as a SIP revision. Requirements of the model dust control ordinance are listed below. A complete version of the model ordinance is included in Appendix B.

1. Requires local jurisdiction approval of a dust control plan for each construction project that requires issuance of a grading permit. Plans must specify a level of control such that the activity is in compliance with District Rule 403.

2. Requires owner/operators of unpaved surfaces with greater than 150 vehicle trips per day to submit a plan that specifies how subject travel surface will be paved or chemically treated. An emphasis is assigned on treating unpaved surfaces adjacent to urban areas.

3. Requires owner/operators of unpaved surfaces with fewer than 150 vehicle trips per day to establish maximum speed limits of 15 mph.

4. Requires paving or chemical treatment of unpaved parking lots for land uses that require more than eight parking spaces, as indicated by the local jurisdiction's parking code.

5. Requires owners of unimproved property to discourage the use of said property for off-highway vehicle (OHV) use when there are indications of such use. Methods to discourage OHV use may include installation of signs, fencing, or any other means required by the local jurisdiction.

Each jurisdiction adopted the ordinance as a revision to the respective code sections, and consequently, the emissions reductions associated with ordinance implementation are permanent and enforceable.

Clean Streets Management

Based on the emissions inventory contained in the 90-CVSIP, entrained road dust PM_{10} emissions were one of the largest source categories in the Coachella Valley. Accordingly, the 90-CVSIP proposed several control measures (e.g., post-event/enhanced street cleaning, road shoulder stabilization, etc.) intended to reduce paved road PM_{10} 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). 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, a variety of these projects have been implemented and funding for the remainder of the projects has been allocated. Appendix C contains a table that provides a summary description of these projects and the jurisdictions in which they are proposed. 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 contains the introduction portion of the CMAQ ISTEA Project Procedures manual.

As part of the clean streets management program, CVAG released a Request for Proposals (RFP) and later 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.

Recognizing that CMAQ ISTEA resources are finite, CVAG has begun to evaluate opportunities for long-term funding of the clean streets management program. One proposal, which is currently under consideration involves the purchase of PM_{10}-efficient

street sweepers using CMAQ ISTEA funds. The equipment could be used by local jurisdictions or a regional agency and CVAG could be reimbursed for equipment use. Funds generated from this process could be used to pay for street cleaning requests and possibly purchase new equipment. Another source of funding could be from a property assessment under a County Service Area (CSA).

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. Additionally, these programs are consistent with U.S. EPA guidance that encourages implementation of preventive rather than mitigative measures. Preventive measures (e.g., paving) are permanent and require little if any enforcement while mitigative measures (e.g., watering of unpaved road shoulders) require frequent reapplication.

Rule 403 - Fugitive Dust

District Rule 403 was amended in November of 1992 and again in July of 1993 (see Appendix E). The amendments were in response to the District's 1991 AQMP control measures for fugitive dust, and in part, to the 90-CVSIP. The following is a summary of the Rule 403 requirements. Rule references have been added for clarity.

1. Requires activities to implement reasonably available fugitive dust control measures (e.g., watering, chemical stabilization, revegetation, etc.) in order to prevent visible fugitive dust emissions from crossing a property line. [Paragraphs (d)(1) and (d)(2)]

2. Establishes a maximum PM_{10} contribution of 50 $\mu g/m^3$ during a six-hour period. [Paragraph (d)(3)]

3. Limits vehicular track-out. If track-out does occur it must be removed at the conclusion of the work day or at any time material has been tracked a maximum of 50 feet from the site boundary. [Paragraph (d)(4)]

4. Requires large operations (projects in excess of 100 acres of disturbed surface area or with bulk material movement in excess of 10,000 cubic yards) to either: 1) submit a fugitive dust emissions control plan or; 2) implement the applicable Rule 403 Table 1 and Table 2 measures and maintain records documenting control measure implementation. [Subdivision (e)] An exemption from this requirement is provided for activities that submit a dust control plan to a Coachella Valley jurisdiction with a District-approved dust control ordinance.

This is an existing District Rule and, as such, the associated emissions reductions are permanent and enforceable. Additionally, District Rule 403 serves as a "backstop" for the locally adopted dust control ordinances.

Rule 403.1 - Wind Entrainment of Fugitive Dust

The District's Governing Board adopted Rule 403.1 in January of 1993 (see Appendix F). This rule was developed to implement several of the 90-CVSIP control measures. 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) 846-7717. A forecast of anticipated PM_{10} levels was also added to this system to alert the public to days when high winds may lead to unhealthful PM_{10} levels. Specific Rule 403.1 requirements are summarized as follows.

1. Requires activities which seek an exemption under District Rule 403, subparagraph (g)(2)(A) to determine when wind conditions exceed 25 miles per hour (mph). During these high-wind conditions, owner/operators must implement the appropriate District Rule 403 Table 1 control actions or be subject to violation of the Rule 403 performance standards. Wind speed determinations can be made either through District forecasts or through installation of on-site wind measuring equipment (anemometers). [Paragraph (d)(1)]

2. Requires rapid (24-hour) stabilization of new man-made bulk material deposits in the Coachella Valley Blowsand Zone (two miles on either side of I-10 Freeway through the Coachella Valley). [Paragraph (d)(2)]

3. Requires stabilization of fugitive dust sources when active operations have ceased for more than 30 days. [Paragraph (d)(3)]

4. Requires the cessation of agricultural tilling or soil mulching operations when wind speeds exceed 25 mph. [Paragraph (d)(4)] An exemption is provided for activities which have been subject to multiple-day tilling prohibitions.

As with Rule 403, this is an existing District Rule and, as such, the associated emissions reductions are permanent and enforceable.

Serious Nonattainment (94-CVSIP)

Under the General Preamble, the U.S. EPA states that a more stringent control level is necessary for "serious" areas since the CAA allows seven additional years for attainment (over "moderate" areas). In 1994 the District adopted a SIP revision (94-CVSIP) that identified the following candidate Best Available Control Measures (BACM) (see Table 1-4.

TABLE 1-4

94-CVSIP Candidate BACM

Emission Source	Control Measure	Requirements
Paved Roads	Minimal Track-Out	Implement one or more of the following control actions where unpaved roads connect with paved public roads: paving, chemical stabilization, tire cleaning devices, and/or street cleaning.
Paved Roads	Infrastructure Improvements	Implement infrastructure improvements (e.g., curbing, storm drain improvements) to reduce paved road silt loadings in urban areas.
Agriculture	Soil Conservation Plans	Remove the exemption for agricultural operations under District Rule 403 and develop an alternative compliance plan based on the establishment of a soil conservation plan to be approved by the U.S. Department of Agriculture Natural Resource Conservation Service.
Miscellaneous	Turf Maintenance	Timely removal of thatch and/or dust control implements on turf vacuum sweepers.

To meet the statutory requirements for implementing appropriate BACMs prior to February 8, 1997, the District committed to adopt all identified candidate BACM via rulemaking action to meet the statutory deadline, except that any candidate measure may not be adopted if it is determined prior to September 1996 that such candidate BACM does not meet the technological and cost feasibility criteria for BACM acceptability. Such criteria are as follows:

Cost feasibility: A control measure will be considered cost feasible if the cost-effectiveness is less than $5,300 per ton of PM_{10} reduced on an annual basis.

Technological feasibility: A control measure will be considered technically feasible if the control technology is currently available and the control efficiency has been demonstrated to achieve a minimum of at least 10 percent.

BACM Implementation

The 94-CVSIP proposed implementation of feasible and cost-effective BACM by February 8, 1997. However, since the Coachella Valley has attained the standards far in advance of the statutory deadline, the District is proposing to consider the BACM measures as contingency measures in a Maintenance Plan (refer to Chapter 4). This Maintenance Plan is submitted in support of the attainment redesignation request (see Chapter 6).

Current Status and Basis for Redesignation

As demonstrated in Chapter 2 (Air Quality), the Coachella Valley has had three consecutive years without a violation of the PM_{10} NAAQS and meets all the other state required criteria for redesignation as attainment. Once redesignated as attainment, the District is only required to submit a Maintenance Plan with contingency measures.

Under CAA Section 175A(d), contingency measures are required as part of an acceptable maintenance plan. Therefore, the use of BACM as contingency measures is appropriate for meeting the provisions of CAA Section 175A(d). The rapid progress to attainment reflects the ambitious local dust control efforts that have been nationally recognized as a model program for fugitive dust control, and the Maintenance Plan is the culmination of this effort.