C H A P T E R 6

NATURAL EVENTS ACTION PLAN

Background

Natural Events Action Plan

BACKGROUND

U.S. EPA guidance states that if air districts intend to exclude ambient air quality data collected on days when nonanthropogenic sources cause exceedances of the federal standards, a Natural Events Action Plan (NEAP) should be developed to address future events.[1] The NEAP for the Coachella Valley is presented in this Chapter. The following is a summary of the specific U.S. EPA guidance regarding development of a NEAP.

1. Establish public notification and education programs. Such programs may be designed to educate the public about the short-term and long-term harmful effects that high concentrations of PM_{10} could have on their health and inform them that: (a) certain types of natural events affect the air quality of the area periodically, (b) a natural event is imminent, and (c) specific actions are being taken to minimize the health impacts of events.

2. Minimize public exposure to high concentrations of PM_{10} due to future natural events. Programs to minimize public exposure should: (a) identify people most at risk, (b) notify the at risk population that a natural event is imminent or currently taking place, (c) suggest actions to be taken by the public to minimize their exposure to high concentrations of PM_{10}, and (d) suggest precautions to take if exposure cannot be avoided.

3. Abate or minimize appropriate controllable sources of PM_{10}. Programs to minimize PM_{10} emissions may include:.(a) volcanic and seismic activities - cleaning ash and dust deposits from areas where it could be reentrained into the air by anthropogenic activities, (b) wildland fires - prohibition of other burning activities during wildland fire events and steps to minimize fuel loadings in areas vulnerable to fire, and (c) high winds - application of Best Available Control Measures (BACM) to any sources of soil that have been disturbed by anthropogenic activities. The BACM application criteria require analysis of the technological and economic feasibility of individual control measures on a case-by-case basis. The NEAP should include analyses of BACM for contributing sources. The BACM for windblown dust include, but are not limited to: application of chemical dust suppressants to unpaved roads, parking lots, and open areas; dust suppression at construction sites; use of conservation farming practices on agricultural lands; tree rows and other physical wind breaks; restricting or prohibiting recreational off-road vehicle activities; and use of surface coatings. If BACM are not defined for the anthropogenic sources in question, step 4 below is required.

[1] The annual PM10 NAAQS is violated if the expected average annual arithmetic mean concentration for the past three calendar years is greater than 50 $\mu g/m^3$. Several elevated 24-hour PM10 concentrations caused by natural events can potentially cause the annual NAAQS (which is an annual arithmetic mean of 24-hour concentrations) to be exceeded. If natural events cause the annual NAAQS to be violated, one NEAP for the area will address both the 24-hour and annual NAAQS.

4. Identify, study and implement practical mitigating measures as necessary. The NEAP may include commitments to conduct pilot tests of new emission reduction techniques. For example, it may be desirable to test the feasibility and effectiveness of new strategies for minimizing sources of windblown dust through pilot programs. The plan must include a timely schedule for conducting such studies and implementing measures that are technologically and economically feasible.

5. Periodically reevaluate: (a) the conditions causing violations of a PM_{10} NAAQS in the area, (b) the status of implementation of the NEAP, and (c) the adequacy of the actions being implemented. The state should reevaluate the NEAP for an area every five years at minimum and make appropriate changes to the plan.

In addition to the NEAP content suggestions listed above, U.S. EPA guidance states that a NEAP should be developed in conjunction with the stakeholders affected by the plan. Specifically, development of a NEAP for areas affected by high wind should include input from federal, State and private managers of open desert lands, rangelands, agricultural lands; the construction industry; and organizations promoting the use of recreational off-road vehicles. Additionally, U.S. EPA guidance states that an NEAP should be made available for public review and comment and may, but is not required, to be adopted as a revision to the SIP if current SIP rules are not revised. Moreover, NEAPs should be submitted to the U.S. EPA for review and comment.

The following paragraphs describe the Coachella Valley NEAP and its conformance with the above described U.S. EPA guidance.

NATURAL EVENTS ACTION PLAN

PM_{10} Education and Public Outreach

The District has worked closely with the Coachella Valley Association of Governments (CVAG), local business and community leaders, the media and interested groups to educate the community about the PM_{10} problem and the steps being carried out to protect the health of the Valley's residents. In 1990, at the start of the program, the local news media provided excellent coverage of the PM_{10} reduction activities. Specifically, newspapers (Desert Sun, Desert Post, and Riverside Press-Enterprise) and television stations (KMIR, KESQ) provided ongoing updates to the community, especially on the positive results of the demonstration projects.

Following this initial outreach, District and CVAG staff made a presentation to Chambers of Commerce, the Building Industry Association, the Riverside County Farm Bureau, and the local Respiratory Association regarding the PM_{10} problem, health effects, and efforts to reduce ambient PM_{10} concentrations. To further expand the PM_{10}

educational process, District and CVAG staff prepared an informational pamphlet that described the Valley's PM_{10} levels, current control efforts and methods to limit exposure (see Appendix H). Approximately 30,000 of these pamphlets were printed for distribution throughout the Valley. Additionally, the Palm Desert Rotary Club, which previously adopted the PM_{10} program as their annual environmental theme, established a program to distribute PM_{10} pamphlets to the citizens of the Coachella Valley, and established a series of community forums for discussing PM_{10} issues.

1995 - 1998 Coachella Valley Health Study

More recently, the District obtained funds from a U.S. EPA Section 105 grant to conduct a comprehensive study to evaluate potential health effects from PM_{10} exposures in the Coachella Valley. The study will be conducted in two phases with staff from the District, the California Public Health Foundation and the State Office of Environmental Health and Hazard Assessments. Phase 1 of the study will evaluate existing hospital admissions data and ambient air quality data collected between 1990 and 1994 to determine if daily changes in PM_{10} concentrations are associated with hospital admissions. Phase 2 will be based on data collected between 1995 and 1998 and will include daily $PM_{10}/PM_{2.5}$ data collected with special monitoring equipment. Results of the study will be published and made available to the media and CVAG staff for distribution.

Future Outreach Programs

The District will continue to work with staff from CVAG and the local jurisdictions to increase the public's awareness of PM_{10} conditions in the Valley. As an example, the District recently held a press conference to announce the siting of a wind monitor at the City of Desert Hot Springs corporate yard. The press conference was attended by staff from local newspapers and television stations and provided an opportunity to review the PM_{10} program and progress achieved to date in addition to answering specific questions concerning the wind monitor.

By July 1997, the District will hold an initial series of public consultations concerning high wind events, including public notification and ways to prevent exposure to high PM_{10} levels. Based on public comments, similar consultations will be held periodically.

Public Notification of Ambient PM_{10} Levels

On January 15, 1993 the District's Governing Board adopted Rule 403.1 (Wind Entrainment of Fugitive Dust). Under the requirements of Rule 403.1, certain activities in the Coachella Valley are required to determine wind conditions and, in some cases, alter their activity plans during high wind conditions. In support of the Rule, the District has established a daily wind forecasting system that determines when wind conditions are expected to be greater than 25 miles per hour (mph). Anyone can access this wind forecast information by calling (800) 846-7717.

In conjunction with the high wind notification system, the District has developed a public dust advisory program that forecasts the anticipated PM_{10} levels for the following day. Under the system, which is believed to be the only one of its kind in the nation, anticipated PM_{10} levels are expressed in terms of concentration ($\mu g/m^3$) and the Pollutant Standards Index (PSI) for PM_{10}. A dust advisory is issued when the forecasted PM_{10} concentration exceeds 150 $\mu g/m^3$. This equates to a PSI of 100 for PM_{10}. During a forecasted dust advisory, persons are encouraged to avoid strenuous exercise: stay indoors and keep windows shut; and reduce or avoid driving. The dust advisory information is also made available to the general public via a toll free phone number and is also available to the media. The District created a dust advisory "business card" that has been widely distributed to businesses, residents, and educational institutions in the Coachella Valley (See Figure 6-1).

To improve the accuracy of the high wind/dust advisory forecast system, the District is installing up to eight additional wind monitors in the Coachella Valley. Presently, the District issues one advisory for the entire Valley through data provided from the Indio and Palm Springs monitoring stations. The first new wind monitors added to the system were installed in the Whitewater River area and the City of Desert Hot Springs corporate yard. These wind monitors provide "real time" information on wind speeds experienced throughout the Valley. By comparing the forecasted wind speeds that are based on meteorological conditions with actual wind speed data, District staff will be able to refine the forecast methodology to more accurately predict wind speeds. Additionally, the wind speed data may be used to provide high wind forecasts for various portions of the Valley (e.g., Whitewater area, cove areas, etc.) instead of one Valley-wide forecast.

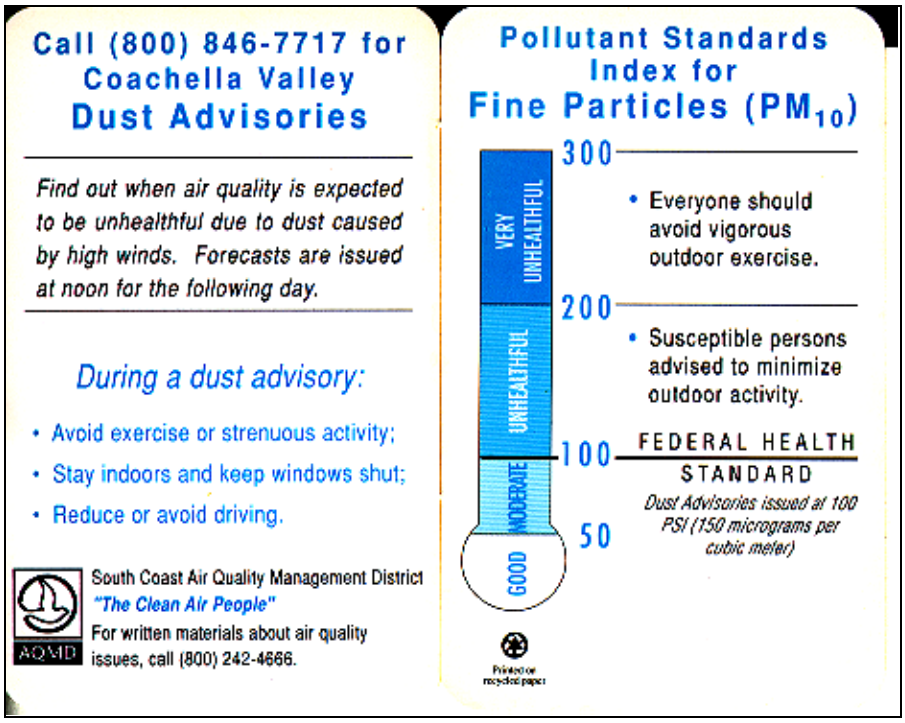

FIGURE 6-1

Dust Advisory Card

Sensitive Populations

Studies have indicated that the elderly, children, and people with existing respiratory diseases are at most risk to adverse affects from air pollution. To meet the U.S. EPA's goal to minimize exposure of air pollution to the people at most risk, a fact sheet was developed for distribution to the Valley's schools and hospitals. The fact sheet includes answers to frequently asked questions regarding air quality in the Coachella Valley, a description of the PSI, and suggestions to reduce PM_{10} exposure during a forecasted dust advisory. Appendix H contains a copy of the fact sheet.

Nonanthropogenic Contribution to Ambient Air Quality

According to U.S. EPA guidance, ambient PM_{10} concentrations due to fugitive dust generated by unusually high winds will be treated as uncontrollable natural events under the following conditions: 1) the dust originated from nonanthropogenic sources, or 2) the dust originated from anthropogenic sources controlled with best available control measures. Analysis of data collected at the two Coachella Valley monitoring stations indicates that the high PM_{10} values reported at the Indio site are primarily attributable to wind-entrained fugitive dust from the Whitewater Wash blowsand area. For example, analysis provided in Chapter 2 clearly indicates that the high values reported on June 2,

1995 are a result of wind-entrained dust from the Whitewater Wash blowsand area. The majority of the Whitewater Wash area is undisturbed natural desert land. In fact, approximately 13,000 acres of this area has been preserved for the fringe-toed lizard (FTL)[2]. As such, the District is proposing that the elevated PM_{10} levels experienced at the Indio site are a result of uncontrollable natural events. Additional information regarding the Coachella Valley blowsand condition is presented in Chapter 1.

Future Control Measure Research

When the District's Governing Board adopted the moderate area Coachella Valley PM_{10} SIP (90-CVSIP) it was acknowledged that the Valley's blowsand condition was unique and warranted further study. In conjunction with adoption of the 90-CVSIP, the District Board approved funding for an initial study to evaluate the Valley's blowsand problem and the feasibility of developing cost-effective control measures. In October 1992, the TWG accepted the "Initial Blowsand Study for the Coachella Valley" that contained: a description of the natural blowsand region and activity; 2) a description of applicable sand control measures; 3) plans for attenuating blowsand activity in identified areas; 4) an estimation of control costs, and 5) a description of issues associated with disposal of mechanically transported sand. Appendix A contains copy of the Initial Blowsand study. Although the report did contain recommendations for possible blowsand control strategies, it was determined that future studies would be required prior to development of a long-term blowsand control program.

As part of the District's plan to reevaluate the NEAP in the year 2001, the District is committing to work with CVAG to conduct a more in-depth evaluation of the blowsand condition based on the findings of the preliminary blowsand study. Should feasible measures be identified to mitigate the nonanthropogenic windblown emissions, such measures will be considered as part of the NEAP review.

Stakeholder/Public Involvement

From the beginning of the PM_{10} program, extensive effort has been undertaken to ensure local involvement, especially because the majority of PM_{10} emissions result from locally generated sources. One of the key opportunities for local involvement has been the PM_{10} Technical Working Group (TWG), which includes representatives of each of the nine Coachella Valley cities, the County of Riverside, the Building Industry Association, Coachella Valley Association of Governments (CVAG), and the District. In addition to the TWG, four subgroups were also established to assist in the evaluation of technical information. One of these subgroups was given the responsibility to identify key external authorities (e.g., those outside the control of local jurisdictions) to ensure communication between these groups and the TWG. This "external authorities" subgroup initiated dialogues with the following stakeholders.

[2] The FTL is an endangered species that is dependent on natural blowsand migration for food and shelter.

Bureau of Land Management
Caltrans
Coachella Valley Water District
Mission Springs Water District
Southern California Edison
Southern Pacific Railroad
Riverside County Flood Control District
Riverside County Agricultural Commissioner
Riverside County Farm Bureau
Mosquito Abatement District
Palm Springs Airport
Thermal Airport
Wintec (Wind Farm)
U.C. Cooperative Extension
Agua Caliente Tribal Council
Morongo Tribal Council
Torres-Martinez Tribal Council
Cabazon Band/Mission Council

During the initial external authority subgroup meetings, a self-assessment survey of dust-producing activities was developed for distribution to entities not in attendance at the meetings. Results of the surveys were evaluated and CVAG staff developed a dust-reduction plan guidance document that was consistent with the approaches contained in the local dust control ordinances.

In addition to stakeholder involvement, extensive effort has been undertaken to ensure public involvement in the PM_{10} reduction program. Public Workshops were held for both the 90-CVSIP and 94-CVSIP to solicit public input on plan development. Written responses were developed for each of the comments presented and these responses were included in the final documents submitted to the ARB and the U.S. EPA. Public hearings were also held in the Coachella Valley for both the 90-CVSIP and the 94-CVSIP. These public hearings were attended by members of the District's Governing Board and permitted Board members a firsthand understanding of the unique air quality issues in the Coachella Valley.

A Public Workshop and Public Hearing will also be held in the Coachella Valley for the Coachella Valley PM_{10} Maintenance Plan. This will allow the public with the opportunity to review and comment on the NEAP before its adoption by the District's Governing Board. Additionally, the Coachella Valley Maintenance Plan (including the NEAP) will also be submitted to the U.S. EPA for review and comment.

NEAP Reevaluation (2001, 2004)

U.S. EPA maintenance plan guidance recommends a verification of continued attainment through reevaluation of the modeling assumptions and input data every three years. U.S. EPA NEAP guidance recommends a reevaluation of the NEAP every five years. The

District is committing to a reevaluation of the Maintenance Plan in the years 2001 and 2004. This revaluation will also involve a reevaluation of the NEAP. In accordance with U.S. EPA guidance, the NEAP reevaluation will consist of a review of:

1. the conditions causing violations of the PM_{10} NAAQS;
2. the status of NEAP implementation; and
3. the adequacy of the actions being implemented.

The following paragraphs describe the specific actions involved in the NEAP reevaluation process.

Blowsand Study

The District will work with CVAG staff to conduct an analysis of the Valley's blowsand problem The analysis will build on the background information and recommendations contained in the Initial Blowsand study previously prepared for the District and will focus on specific recommendations for near-term implementation. The District will work with CVAG to conduct a new study beginning no later than 1999 with the intention of receipt of a final report no later than 2001. Results of the analysis will be included in the 2001 reevaluation of the Coachella Valley NEAP. The specific recommendations of the analysis will be incorporated as part of the NEAP reevaluation in 2001, and implemented as appropriate.

Status of NEAP Implementation

With the exception of the commitment to conduct a future blowsand study, all of the actions specified in the NEAP are presently in place in the Coachella Valley. Specifically, the District and CVAG presently are implementing a PM_{10} education and public outreach program and this will continue in ensuing years; the District has developed and continues to operate and improve a high wind/PM_{10} forecasting system; and contingency measures are contained in the Plan. During the reevaluations, the District will document whether these actions remain in place and, if appropriate, include suggestions for improvement.

Adequacy of NEAP Actions

Through continued interactions with CVAG, local government, and affected industries, the District will be able to monitor the adequacy of the NEAP actions (e.g., public outreach, compliance issues). In addition to this "qualitative" review of the NEAP actions, the District will develop a "quantitative" analysis of the high wind/PM_{10} forecasting system. Specifically, once the additional wind monitors are in place, the District will be able to evaluate the effectiveness of the criteria used to forecast high winds. If data from the wind monitoring network indicates that the criteria presently used for the forecasts do not adequately predict actual conditions, the District will

develop new criteria based on the data collected. The 2001 NEAP reevaluation will contain a discussion of the high wind forecasting system's effectiveness.