Chapter 7

Current and Future Air Quality – Desert Nonattainment Areas SIP

The Coachella Valley is under the SCAQMD's jurisdiction, however it is located in another air basin where the air quality challenges differ. The 2016 AQMP addresses the Clean Air Act requirements for the 2008 8-hour ozone federal standard in the SCAQMD desert region.

In This Chapter

Introduction

The Coachella Valley Planning Area is defined, for the purposes of this discussion, as the desert portion of Riverside County in the SSAB, and is part of the SCAQMD, which also includes the Basin. The Coachella Valley is the most populated area in this desert region, which encompasses several communities, including Palm Springs, Desert Hot Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, La Quinta, Indio, Coachella, Thermal, and Mecca. Figure 7-1 provides a map of the area and the surrounding topography.

The Coachella Valley is designated by U.S. EPA as a nonattainment area for the 2008 8-hour ozone NAAQS of 0.075 ppm, and for the former 1997 8-hour ozone NAAQS of 0.08 ppm. For both 8-hour ozone federal standards, the Coachella Valley is classified as a “severe-15” ozone nonattainment area, indicating that the area has 15 years from the nonattainment designation date to attain the NAAQS. The Coachella Valley is also still designated as a nonattainment area for PM10, due to windblown dust events that recur in the area, with a classification of “serious.” The Coachella Valley is in attainment of the current federal standards for NO_2, CO, lead, and SO_2.

On October 1, 2015, U.S. EPA finalized the new 2015 8-hour ozone NAAQS at 0.070 ppm, retaining the same form as the previous 8-hour standards. This standard became effective on December 28, 2015. Attainment/nonattainment designations will be finalized for the new standard by October 1, 2017, likely based upon 2014–2016 air quality data. It is expected that the Basin and the Coachella Valley, as well as a significant portion of California, will be designated nonattainment. SIP submittals to demonstrate attainment of the 2015 ozone NAAQS will likely be due in the 2020–2021 time frame, with attainment dates between 2020 and 2037, depending on the severity of the ozone problem.

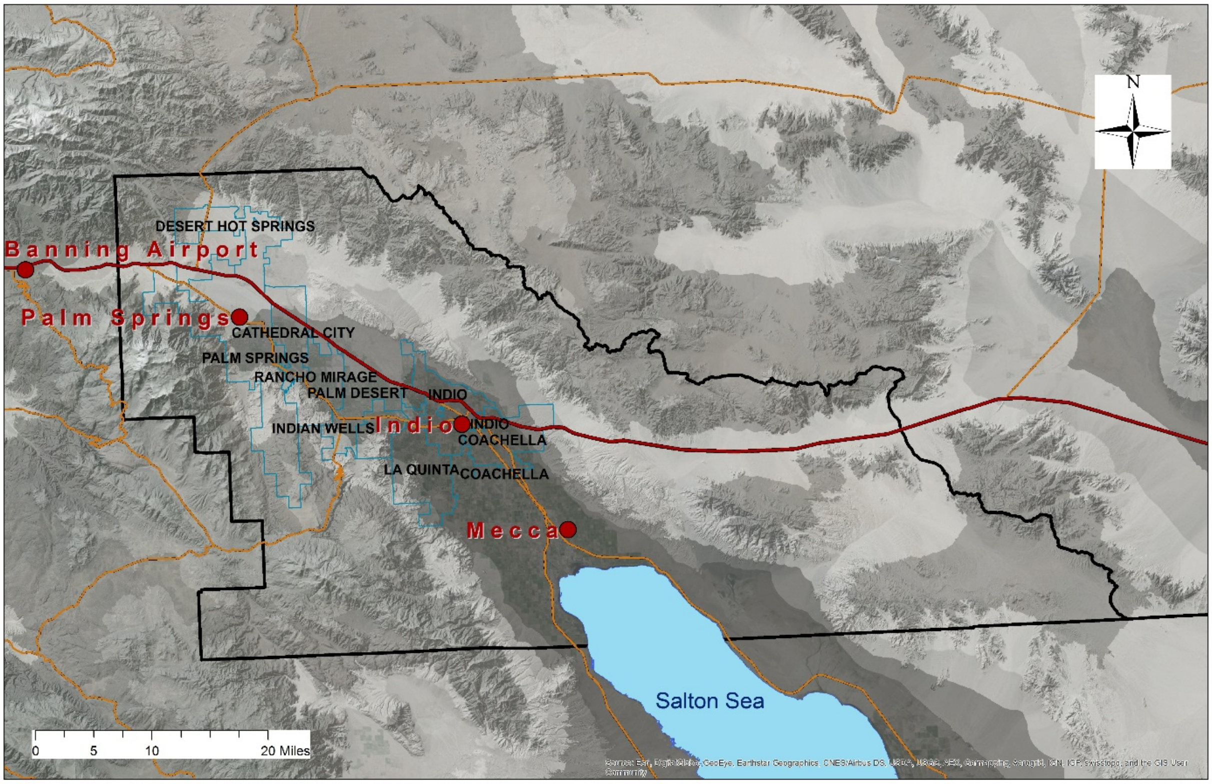

FIGURE 7-1

LOCATION AND TOPOGRAPHY OF THE COACHELLA VALLEY PLANNING AREA

[THE SAN GORGONIO PASS (AKA BANNING PASS) IS THE WEST-EAST PASS BETWEEN THE MOUNTAINS NEAR THE BANNING AIRPORT AIR MONITORING STATION THAT LEADS FROM THE SOUTH COAST AIR BASIN INTO THE COACHELLA VALLEY; SCAQMD AIR MONITORING STATIONS AT PALM SPRINGS, INDIO, AND MECCA ARE SHOWN WITHIN THE COACHELLA VALLEY BOUNDARIES]

While the 2007 AQMP adequately addressed and satisfied the CAA planning requirements for the Coachella Valley regarding the 1997 8-hour ozone NAAQS, the 2016 AQMP specifically addresses CAA planning requirements for 2008 ozone NAAQS. This chapter and associated appendices constitute the ozone SIP for the 2008 8-hour ozone NAAQS, which addresses the current status of ozone air quality and provides the strategy toward future attainment of the federal 8-hour ozone standards in the Coachella Valley, presenting the projections of future ozone levels based on the base year 2012 emissions inventories, growth projections, and control strategies within and outside the Coachella Valley.

Effective May 15, 2015, U.S. EPA finalized a clean data determination (indicating measurements in the area have reached attainment levels) for the revoked 1-hour ozone NAAQS (0.12 ppm) for the former Southeast Desert Modified Air Quality Management Area nonattainment area, including the Coachella Valley. This action was based on 2011–2013 final data and preliminary 2014 data.

On April 18, 2003, U.S. EPA approved the Coachella Valley State Implementation Plan (2003 CVSIP), which addressed future-year attainment of the annual average PM10 NAAQS with a 2006 attainment deadline. This federal standard was revoked, effective December 15, 2006. Since 2007, annual average PM10 concentrations have met the revoked federal annual standard (50 μg/m^3). The 2003 CVSIP also addressed continued attainment of the 24-hour PM10 federal standard, except for uncontrollable natural events. The 2016 AQMP does not include new modeling efforts for PM10. Since the mid-1990s, peak 24-hour average PM10 concentrations have not exceeded the current federal standard (150 μg/m^3) other than on days with windblown dust from natural events, which can be excluded upon U.S. EPA concurrence consistent with the Exceptional Event Rules and prior policies. The PM10 data from the Coachella Valley monitors shows attainment of the PM10 24-hour NAAQS after the removal of the flagged high-wind exceptional events, for which SCAQMD supporting documentation will be submitted and subsequent U.S. EPA approval will be required. However, U.S. EPA has requested that SCAQMD conduct additional ambient monitoring in the southeastern portion of the Coachella Valley before the re-designation can be considered. This new station has been in operation since 2013 in the community of Mecca, and re-designation will be revisited upon analysis of the required three full years of data.

Like the Basin, the Coachella Valley is a growing area, as shown by the historic and projected populations presented in Table 7-1. By 2030, the population in the Coachella Valley is projected to increase by 39 percent over the 2010 level. On a percentage basis, the Coachella Valley growth is expected to exceed that of the Basin for that time period. This population growth is taken into account in the emission projections for future years, which are used to demonstrate attainment of the air quality standards.

TABLE 7-1

Historic and Projected Population for Basin and Coachella Valley

AREA	Historic Population				Projected Population		
	1980	1990	2000	2010	2020	2031	2040
South Coast Air Basin	10,500,000	13,083,594	14,640,692	15,735,186	16,764,932	17,940,418	18,822,083
Coachella Valley	139,000	244,070	325,937	425,404	497,257	596,386	673,425

Source: Historic populations from Southern California Association of Governments, January 2016 CARB 2013 Almanac of Emissions and Air Quality, 2013 Edition, Appendix C [http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm]; Population projections from Southern California Association of Governments (SCAG) [January 2016 update]

Air Quality Setting

Air Quality Summary

In 2015, the SCAQMD monitored air quality at four permanent locations in the Coachella Valley, including the two long-term stations at Indio and Palms Springs and recently added stations at Mecca and the north shore of the Salton Sea. The Palm Springs air monitoring station is located closer to the San Gorgonio Pass (also known as the Banning Pass), predominantly downwind of the densely populated Basin. The Indio station is located further east in the Coachella Valley, on the predominant downwind side of the main population areas of the Coachella Valley. Both of these sites routinely measure ozone, PM10, PM2.5 and sulfates (from PM10). The Palm Springs station also measures CO, and NO_2.

A new station was established in 2013 in the community of Mecca, closer to the Salton Sea in the southeastern portion of the Coachella Valley. It is measuring PM10 continuously, as well as hydrogen sulfide (H_2S), a gas emitted naturally from the Salton Sea that can occasionally cause strong odors. An additional station was also established in 2013 near the shore of the Salton Sea, measuring only H_2S.

Recent and historic air pollution data collected in the Coachella Valley is summarized in this chapter, and is also presented in Chapter 2: Air Quality and Health Effects, along with that of the Basin. Additional details can be found in Appendix II – Current Air Quality. Information on the health effects associated with criteria air pollutants are summarized in Chapter 2 and detailed in Appendix I – Health Effects.

Attainment Status

The Coachella Valley remains a nonattainment area for the revoked 1997 and revised 2008 8-hour ozone NAAQS, as well as for the new 2015 ozone NAAQS. The Coachella Valley is now in attainment of the former (1979) 1-hour ozone NAAQS. The Coachella Valley is also a nonattainment area for the state 1-hour and 8-hour ozone standards.

Since the mid-1990s, the days that have exceeded the 24-hour PM10 federal standard at the SCAQMD Coachella Valley monitoring stations at Indio and Palm Springs have been associated with high-wind natural events. Much of this data has been flagged in the U.S. EPA Air Quality System (AQS) database to be excluded for comparison to the NAAQS, as allowed by the U.S. EPA Exceptional Events Rule and its predecessor, the Natural Events Policy. As a result, the District will continue to seek a re-designation by U.S. EPA for the Coachella Valley to attainment for the PM10 NAAQS, once sufficient data from PM10 monitors in Palm Springs, Indio, and the new Mecca station can be finalized and fully evaluated for exceptional events, contingent upon U.S. EPA concurrence. The Coachella Valley remains a nonattainment area for the PM10 CAAQS.

The current federal NAAQS attainment designations for the Coachella Valley are presented in Table 7-2. The state CAAQS attainment designations are presented in Table 7-3.

TABLE 7-2

National Ambient Air Quality Standards (NAAQS) Attainment Status
Coachella Valley Portion of the Salton Sea Air Basin

Criteria Pollutant	Averaging Time	Designation[a]	Attainment Date[b]
Ozone (O_3)	(1979) **1-Hour** (0.12 ppm)[c]	Attainment	11/15/2007 (attained 12/31/2013)
	(2015) **8-Hour** (0.070 ppm)[d]	Pending – Expect Nonattainment (Severe)	Pending
	(2008) **8-Hour** (0.075 ppm)[d]	Nonattainment (Severe-15)	7/20/2027
	(1997) **8-Hour** (0.08 ppm)[d]	Nonattainment (Severe-15)	6/15/2019
PM2.5[e]	(2006) **24-Hour** (35 μg/m^3)	Unclassifiable/Attainment	N/A (attained)
	(2012) **Annual** (12.0 μg/m^3)	Unclassifiable/Attainment	N/A (attained)
	(1997) **Annual** (15.0 μg/m^3)	Unclassifiable/Attainment	N/A (attained)
PM10[f]	(1987) **24-hour** (150 μg/m^3)	Nonattainment (Serious)	12/31/2006
Lead (Pb)	(2008) **3-Months Rolling** (0.15 μg/m^3)	Unclassifiable/Attainment	Unclassifiable/ Attainment
CO	(1971) **1-Hour** (35 ppm)	Unclassifiable/Attainment	N/A (attained)
	(1971) **8-Hour** (9 ppm)	Unclassifiable/Attainment	N/A (attained)
NO_2[g]	(2010) **1-Hour** (100 ppb)	Unclassifiable/Attainment	N/A (attained)
	(1971) **Annual** (0.053 ppm)	Unclassifiable/Attainment	N/A (attained)
SO_2[h]	(2010) **1-Hour** (75 ppb)	Designations Pending	N/A
	(1971) **24-Hour** (0.14 ppm) (1971) **Annual** (0.03 ppm)	Unclassifiable/Attainment	Unclassifiable/ Attainment

a) U.S. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassifiable/Attainment or Unclassifiable
b) A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for an attainment demonstration
c) The 1979 1-hour ozone NAAQS (0.12 ppm) was revoked, effective 6/15/05; the Southeast Desert Modified Air Quality Management Area, including the Coachella Valley, had not timely attained this standard by the 11/15/07 "severe-17" deadline, based on 2005-2007 data; on 8/25/14, U.S. EPA proposed a clean data finding based on 2011-2013 data and a determination of attainment for the former 1-hour ozone NAAQS for the Southeast Desert nonattainment area; this rule was finalized by U.S. EPA on 4/15/15, effective 5/15/15, and included preliminary 2014 data
d) The 2008 8-hour ozone NAAQS (0.075 ppm) was revised to 0.070 ppm, effective 12/28/15 with classifications and implementation goals to be finalized by 10/1/17; the 1997 8-hour ozone NAAQS (0.08 ppm) was revoked in the 2008 ozone NAAQS implementation rule, effective 4/6/15; there are continuing obligations under the 1997 and 2008 ozone NAAQS until they are attained
e) The annual PM2.5 standard was revised on 1/15/13, effective 3/18/13, from 15 to 12 μg/m^3
f) The annual PM10 standard was revoked, effective 12/18/06; the 24-hour PM10 NAAQS attainment deadline was 12/31/2006; the Coachella Valley Attainment Re-designation Request and PM10 Maintenance Plan was postponed by U.S. EPA pending additional monitoring and analysis in the southeastern Coachella Valley
g) New 1-hour NO_2 NAAQS became effective 8/2/10; attainment designations 1/20/12; annual NO_2 NAAQS retained
h) The 1971 Annual and 24-hour SO_2 NAAQS were revoked, effective 8/23/10; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO_2 1-hour standard; final area designations expected by 12/31/2020 with SSAB expected to be designated Unclassifiable/Attainment

TABLE 7-3

California Ambient Air Quality Standards (CAAQS) Attainment Status
Coachella Valley portion of Salton Sea Air Basin

Pollutant	Averaging Time and Level[b]	Designation[a] Coachella Valley
Ozone (O_3)	**1-Hour** (0.09 ppm)[c]	Nonattainment
	8-Hour (0.070 ppm)[d]	Nonattainment
PM2.5	**Annual** (12.0 µg/m^3)	Attainment
PM10	**24-Hour** (50 µg/m^3)	Nonattainment
	Annual (20 µg/m^3)	Nonattainment
Lead (Pb)	**30-Day Average** (1.5 µg/m^3)	Attainment
CO	**1-Hour** (20 ppm)	Attainment
	8-Hour (9.0 ppm)	Attainment
NO_2	**1-Hour** (0.18 ppm)	Attainment
	Annual (0.030 ppm)	Attainment
SO_2	**1-Hour** (0.25 ppm)	Attainment
	24-Hour (0.04 ppm)	Attainment
Sulfates	**24-Hour** (25 µg/m^3)	Attainment
H_2S[c]	**1-Hour** (0.03 ppm)	Unclassified [c]

a) State designations shown were updated by CARB on January 5, 2016, based on the 2012-2014 3-year period; stated designations are based on a 3-year data period after consideration of outliers and exceptional events
Source: http://www.arb.ca.gov/desig/statedesig.htm#current

b) State standards, or CAAQS, for ozone, CO, SO_2, NO_2, PM10 and PM2.5 are values not to be exceeded; lead, sulfates, and H_2S standards are values not to be equaled or exceeded; CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations

c) SCAQMD began monitoring H_2S in the southeastern Coachella Valley in November 2013 due to odor events related to the Salton Sea; three full years of data are not yet available for a designation, but nonattainment is anticipated for the H_2S CAAQS in at least part of the Coachella Valley

The maximum concentrations of ozone, PM2.5, PM10, NO_2, and CO recorded at the Coachella Valley monitoring locations in 2015 are shown in Figure 7-2, as percentages of the state and federal standards. The federal standard levels shown are only exceeded for 8-hour ozone. While PM10 concentrations also exceed the federal standards, the PM10 data flagged for exclusion due to high-wind exceptional events have been excluded from the figure although supporting documentation submittal and U.S. EPA concurrence will still be required. The stricter state standard levels are exceeded for both 1-hour and 8-hour ozone and also for PM10. While the maximum concentrations do not necessarily indicate a violation of the federal design value or state designation value form of the standards, they are a useful metric for progress toward attaining those standards.

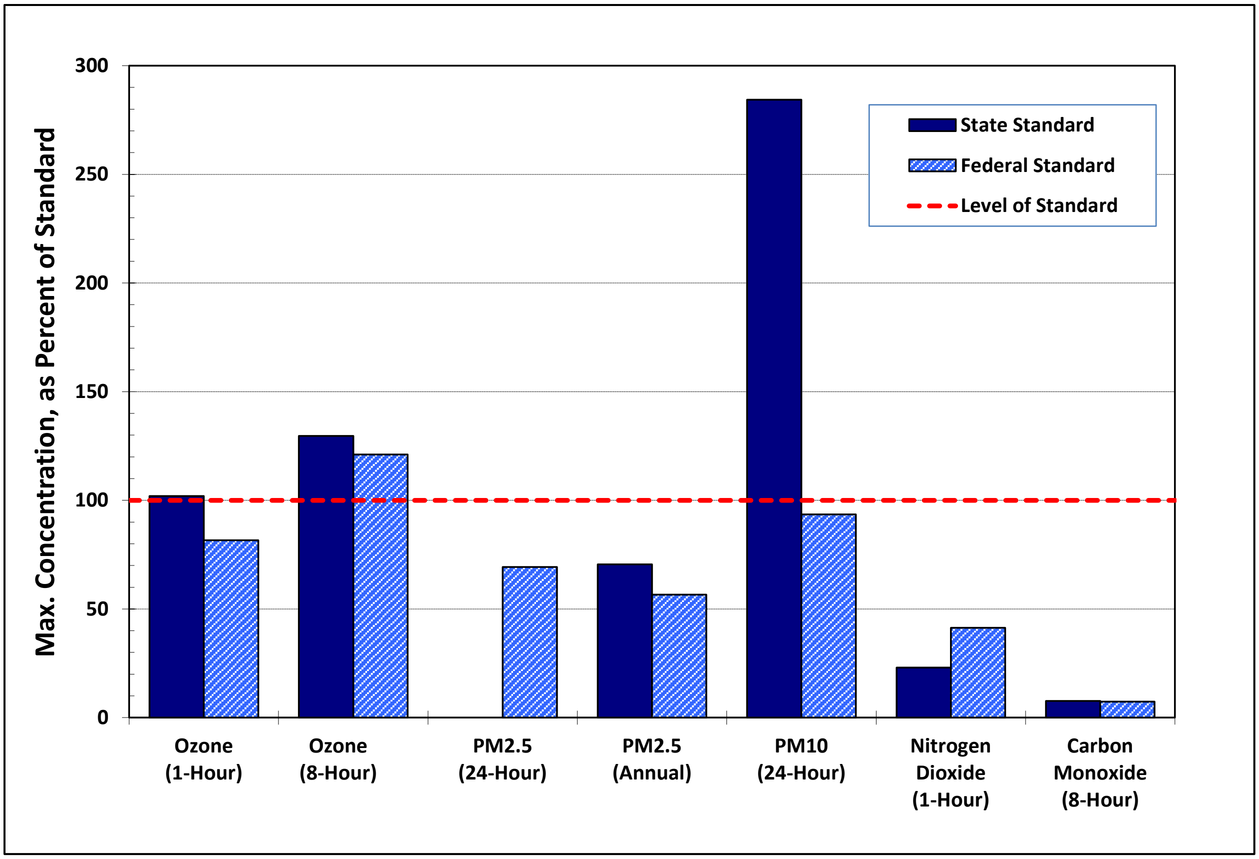

FIGURE 7-2

COACHELLA VALLEY 2015 MAXIMUM POLLUTANT CONCENTRATIONS AS PERCENT OF STATE AND FEDERAL STANDARDS *(THE 2008 8-HOUR FEDERAL OZONE STANDARD IS SHOWN – NOTE THAT THE BAR FOR THE STATE 8-HOUR OZONE STANDARD IS THE NEARLY THE SAME AS FOR THE NEW 2015 8-HOUR FEDERAL OZONE STANDARD, WHICH IS NOT SHOWN; FOR PM10, FLAGGED EXCEPTIONAL EVENTS ARE EXCLUDED, PENDING EVENT DOCUMENTATION REQUIREMENTS AND U.S. EPA APPROVAL)*

Figure 7-3 shows the Coachella Valley design values[1] for ozone, PM2.5, and PM10, for the three-year period 2013–2015, as percentages of the current and revoked federal standards, as compared to the Basin. The Basin is predominantly upwind of the Coachella Valley and is the main source area for transported ozone and ozone precursor emissions.

[1] A design value is a statistic that describes the air quality status of a given area relative to the level and form of the NAAQS. For most criteria pollutants, the design value is a 3-year average and takes into account the form of the short-term standard (e.g., 98th percentile, fourth highest value, etc.). Design values can also be calculated for standards that are exceedance-based (e.g., 1-hour ozone and 24-hour PM10) so that they can be expressed as a concentration instead of an exceedance count, in order to allow a direct comparison to the level of the standard. Note that the modeling design values used for the AQMP attainment demonstration are based on a 5-year period, weighted toward the center year, as specified in U.S. EPA modeling guidelines.

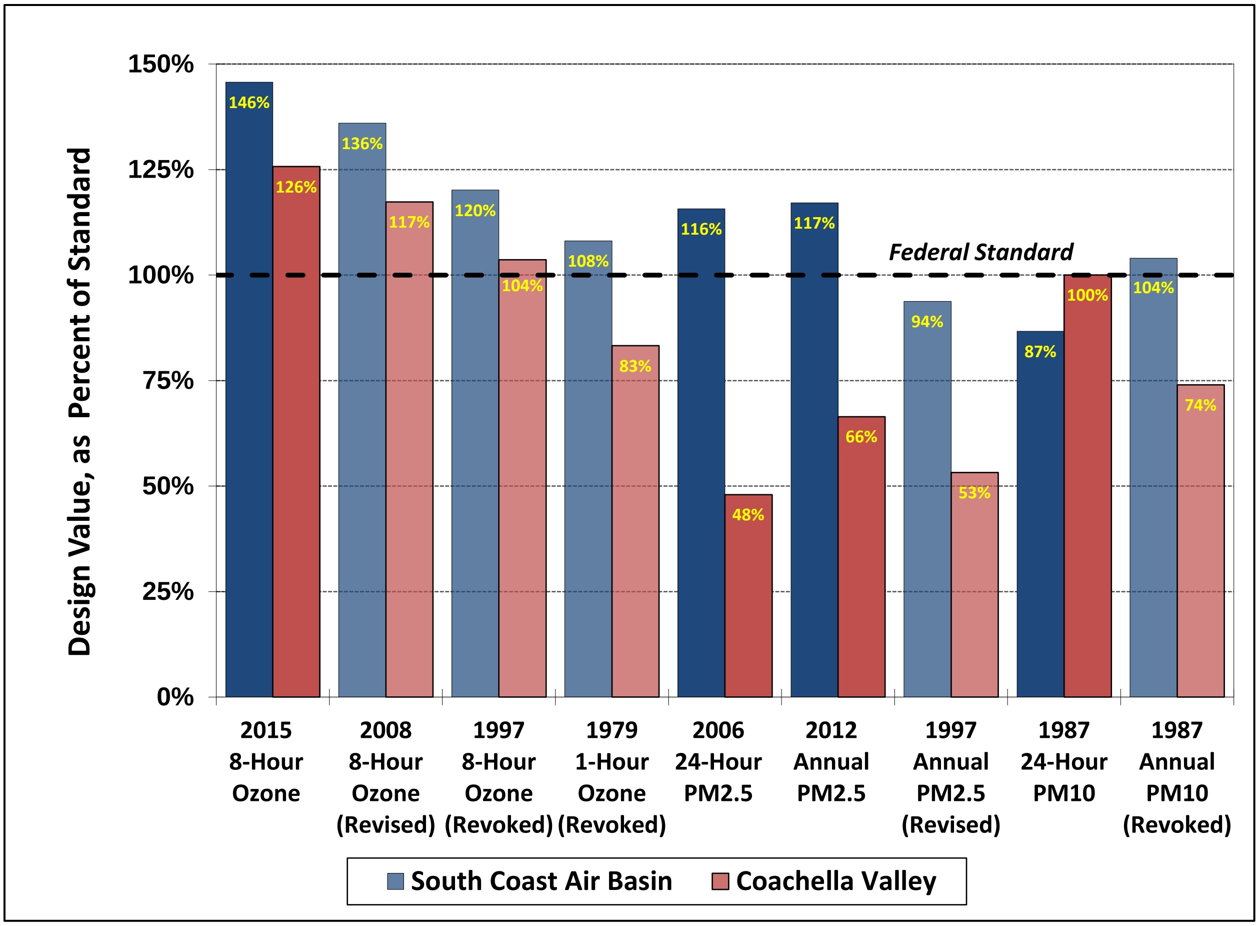

FIGURE 7-3

SOUTH COAST AIR BASIN AND COACHELLA VALLEY 2013–2015 3-YEAR DESIGN VALUES

(PERCENTAGE OF FEDERAL STANDARDS, BY CRITERIA POLLUTANT; FLAGGED PM10 EXCEPTIONAL EVENTS ARE EXCLUDED BUT SUPPORTING DOCUMENTATION AND U.S EPA CONCURRENCE IS STILL NEEDED; NOTE THAT 100 PERCENT OF THE FEDERAL STANDARD IS NOT VIOLATING THAT STANDARD; DARKER COLORS INDICATE THE CURRENT, MOST STRINGENT STANDARD)

Figure 7-4 shows the trend of 3-year design values in the Coachella Valley since 1990, including 1-hour and 8-hour ozone and 24-hour and annual PM2.5, as a percentage of the federal standards (including the former 1979 1-hour ozone NAAQS, the 1997, 2008 and 2015 8-hour ozone NAAQS, the 2006 24-hour PM2.5 NAAQS, and the 2012 annual PM2.5 NAAQS). While recent 8-hour ozone concentrations remain above the NAAQS, the trend shows continued improvement. The PM2.5 design values have remained below the federal standards since the start of these measurements in the Coachella Valley.

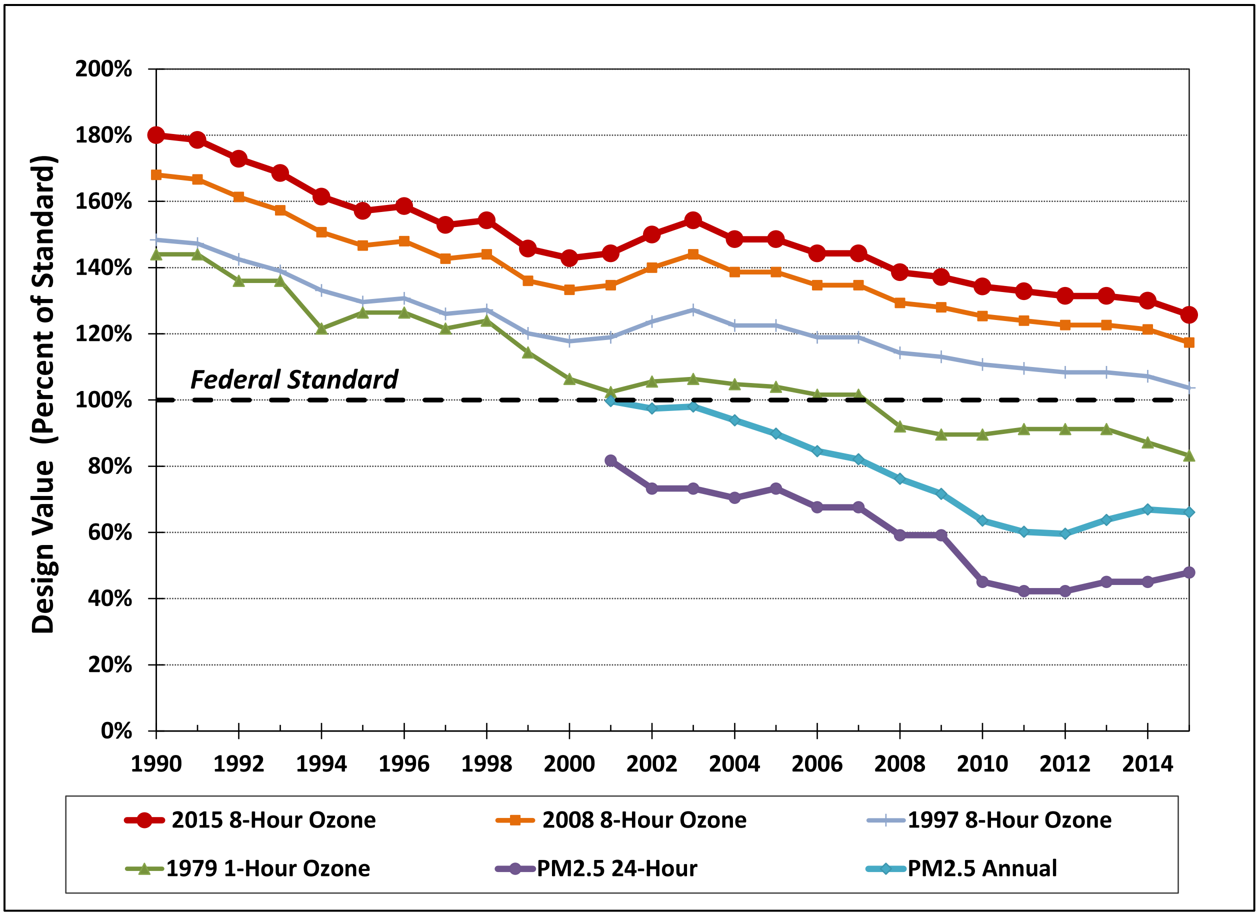

FIGURE 7-4

COACHELLA VALLEY 3-YEAR DESIGN VALUE TRENDS OF OZONE AND PM2.5 AS PERCENT OF THE MOST RECENT FEDERAL STANDARDS, 1990–2015

(PM2.5 MONITORING STARTED IN 1999; THE YEAR PLOTTED IS THE END YEAR OF THE 3-YEAR DESIGN VALUE)

Ozone (O_3)

Atmospheric ozone in the Riverside county portion of the SSAB is both directly transported from the Basin and formed photochemically from precursors emitted upwind. The precursors are emitted in greatest quantity in the coastal and central Los Angeles County areas of the Basin. The Basin's prevailing sea breeze causes polluted air to be transported inland. As the air is being transported inland, ozone is formed, with peak concentrations occurring in the inland valleys of the Basin, extending from eastern San Fernando Valley through the San Gabriel Valley into the Riverside-San Bernardino area and the adjacent mountains. As the air is transported still further inland into the Coachella Valley through the San Gorgonio Pass, ozone concentrations typically decrease due to dilution, although ozone standards can still be exceeded.

Ozone is measured continuously at two locations in the Coachella Valley at the Palm Springs and Indio air monitoring stations. In 2015, the new 8-hour ozone federal standard (0.070 ppm) was exceeded in the Coachella Valley on 47 days (13 percent of the year), while the previous 2008 (0.075 ppm) and 1997 (0.08

ppm) 8-hour standards were exceeded on 26 and 5 days, respectively. The maximum 8-hour ozone concentration was 0.092 ppm (131, 123 and 109 percent of the level of the 2015, 2008 and 1997 ozone standards, respectively). The former 1979 1-hour federal ozone standard level (0.12 ppm) was not exceeded in the Coachella Valley in 2014, with a maximum 1-hour concentration of 0.102 ppm. Ozone concentrations in the Coachella Valley, and the number of days exceeding the federal ozone standards, are greatest in the late spring and summer months, with no exceedances during the winter.

The 8-hour ozone design value for the Coachella Valley for the three-year 2013–2015 period was 0.088 ppm (126, 117, and 104 percent of the 2015, 2008 and 1997 ozone NAAQS, respectively). The 1-hour ozone design value was 0.104 ppm, which is 83 percent of the former 1979 1-hour ozone NAAQS. While the Coachella Valley remains in attainment of the former 1-hour federal standard, the 8-hour NAAQS are still exceeded. The Palm Springs station had higher ozone design values and significantly more days above the standards than the Indio station.

The 1-hour and 8-hour state ozone standards were exceeded on three days and 51 days, respectively, in the Coachella Valley in 2015. The 1-hour ozone health advisory level (≥ 0.15 ppm) has not been reached in the Coachella Valley area since 1998. No 1-hour Stage 1 episode levels (≥ 0.20 ppm) have been recorded in the Coachella Valley area since 1988.

Figure 7-5 shows the trend of the annual peak ozone concentrations (1-hour and 8-hour averages) measured in the Coachella Valley between 1990 and 2015. Figure 7-6 shows the trend of the annual number of days exceeding federal and state ozone standards at Coachella Valley monitoring sites for the years 1990–2015. Figure 7-7 shows the 3-year ozone design value trends from 1990 through 2015 (labeled as the end year of each 3-year design value period). As is illustrated, the Coachella Valley has experienced a trend of steady ozone improvements over the years. However, additional gains are needed to achieve the new and previous 8-hour ozone standards.

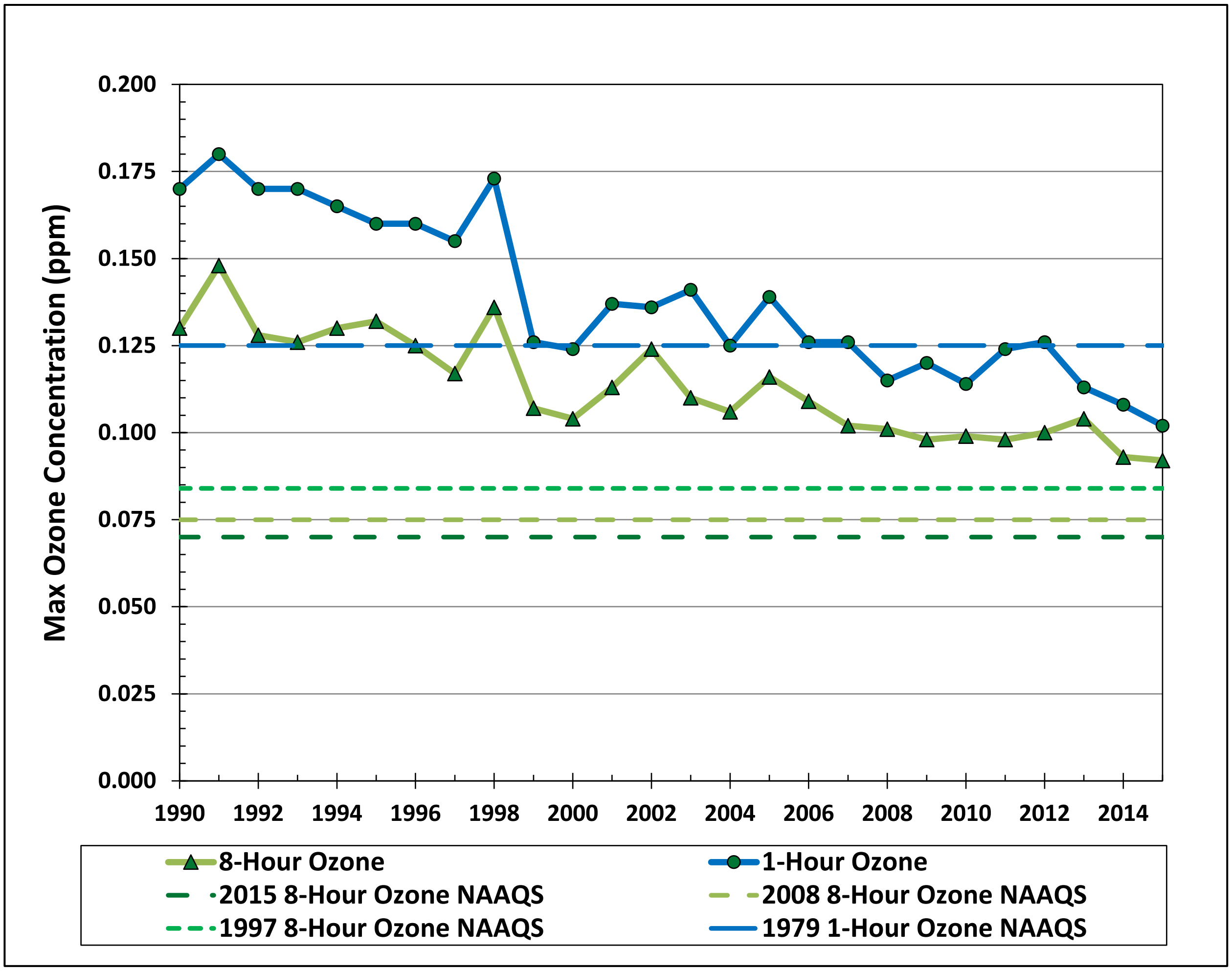

FIGURE 7-5

TRENDS OF COACHELLA VALLEY MAXIMUM 1-HOUR AND 8-HOUR OZONE CONCENTRATIONS, 1990–2015
(DASHED LINES DEPICT THE NEW 2015 8-HOUR AND THE PREVIOUS 2008 AND 1997 8-HOUR AND 1979 1-HOUR FEDERAL OZONE STANDARDS)

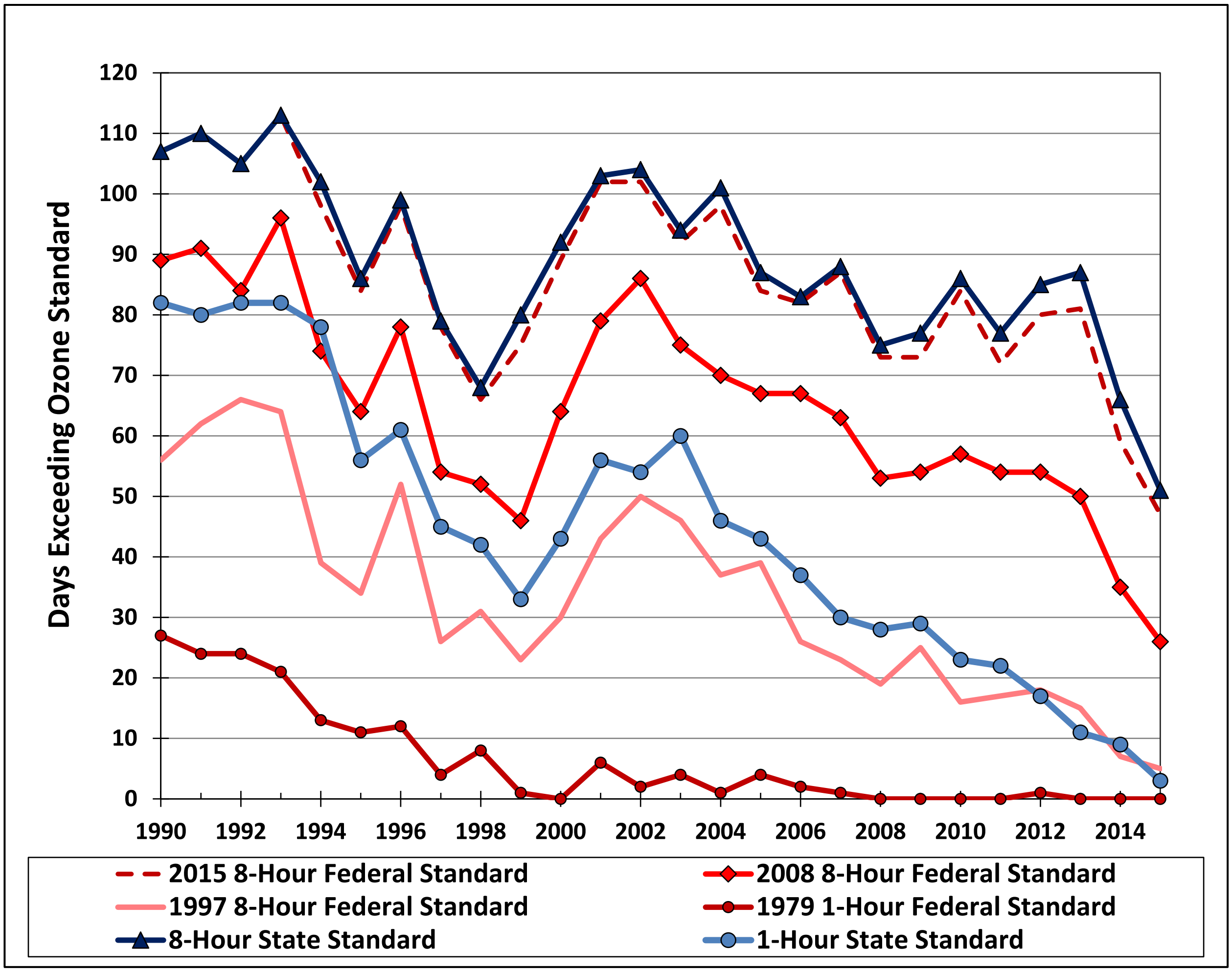

FIGURE 7-6

COACHELLA VALLEY NUMBER OF DAYS EXCEEDING FEDERAL AND STATE OZONE STANDARDS, 1990–2015

(THE NEW 2015 AND 2008 8-HOUR FEDERAL STANDARDS ARE NOW THE CURRENT OZONE NAAQS, BUT COMMITMENTS REMAIN TOWARD TIMELY ATTAINMENT OF THE FORMER FEDERAL STANDARDS; THE COACHELLA VALLEY HAS ATTAINED THE FORMER 1979 FEDERAL 1-HOUR OZONE STANDARD)

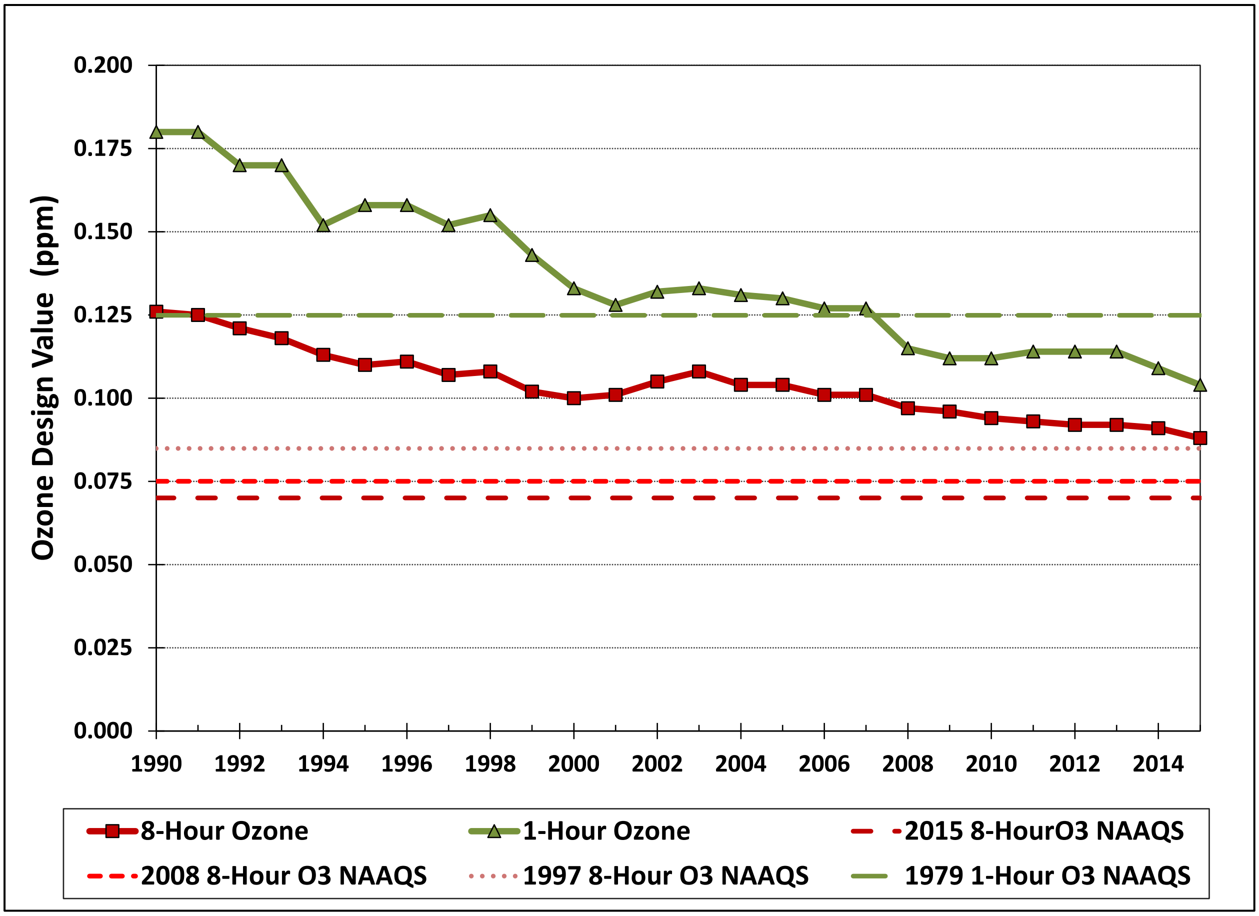

Figure 7-7

Coachella Valley Federal 8-Hour and 1-Hour Ozone 3-Year Design Value Trends, 1990–2015

[Dashed lines indicate the current 2015 (new), 2008 and Revoked 1997 8-hour federal ozone standards and the revoked 1979 1-hour ozone standard (attained); year plotted is the end year of the 3-year design value period]

PM10

PM10 is measured daily at both Indio and Palm Springs by supplementing the (primary) 1-in-3-day Federal Reference Method (FRM) filter sampling at Indio and the 1-in-6-day FRM sampling at Palm Springs with (secondary) continuous hourly FEM measurements at both stations. In addition, a third station has been operational in the community of Mecca in the southeastern Coachella Valley since 2013, measuring PM10 with a real-time FEM sampler. This monitoring was started at the request of U.S. EPA Region IX to help evaluate windblown dust in that portion of the Coachella Valley, which is potentially impacted by high-wind natural events, agricultural activities, and fugitive dust from the exposed shoreline of the receding Salton Sea.

Although exceedances of the ozone standard in the Coachella Valley area are primarily due to the transport of ozone and its precursors from the densely populated areas of the upwind Basin to the west, PM10 in the Coachella Valley is largely due to locally generated sources of fugitive dust (e.g., construction activities, re-entrained dust from paved and unpaved road travel, and natural wind-blown sources). The Coachella Valley is subject to frequent high winds that generate wind-blown sand and dust, leading to high episodic PM10 concentrations, especially from disturbed soil and natural desert blow sand areas. PM10 is the only pollutant which often reaches higher concentrations in the SSAB than in the Basin. On some of the high days, long-range transport of wind-generated dust and sand occurs with relatively light winds in the Coachella Valley, when entrained dust from desert thunderstorm outflows travels to the Coachella Valley from the desert areas of southeastern California, Arizona, Nevada or northern Mexico. All days in recent years that exceeded the 24-hour federal PM10 NAAQS at Indio, Palm Springs, and Mecca would not have exceeded that standard except for the contribution of windblown dust and sand due to strong winds in the upwind source area (high-wind natural events).

In 2014, high-wind natural events occurred on eight days that caused high 24-hour PM10 concentrations over the federal standard at the monitors at Indio, Palm Springs, or Mecca.[2] An additional eight days with high PM10 concentrations in 2015 were also flagged as exceptional events due to high winds. These days are summarized in Table 7-4. For 2014, the initial analysis shows that seven of the high-wind events were associated with strong onshore winds from the Basin through the San Gorgonio Pass and down the Coachella Valley. Two days in 2014 had high PM10 due to strong outflows from thunderstorms over Arizona and northern Mexico that entrained dust and sand that was transported into the Coachella Valley by southeasterly monsoonal flows. In 2015, four of the high-wind events were associated with strong winds through the San Gorgonio Pass and the remaining four were associated with summertime thunderstorm activity over the deserts of the southwestern U.S. and northern Mexico. One of the 2014 monsoonal flow days, July 17, 2015, had the highest PM10 concentration measured in the Coachella Valley in 2014 or 2015 – 337 μg/m^3 at Indio. As was done for similar high-wind events in prior years, the 2014 and 2015 events have been flagged upon submittal to the U.S. EPA AQS database as high-wind exceptional events, in accordance with the U.S. EPA Exceptional Events Rule, with further documentation and U.S. EPA concurrence pending.

[2] The FEM PM10 sampler in Mecca was treated as a special purpose monitor for evaluation purposes through 2014; the 2015 data has been submitted to the U.S. EPA AQS database along with flagging for exceptional events.

TABLE 7-4

High-Wind Exceptional Event Days in the Coachella Valley in 2014 and 2015

Date	Palm Springs PM10 (µg/m³)	Indio PM10 (µg/m³)	Mecca PM10 (µg/m³)#	Event Description
03/26/2014	113*	**168**	123*	high winds
04/12/2014	57*	**243**	**183***	high winds
04/13/2014	32*	**168**	132*	high winds
04/25/2014	49*	52	**183***	high winds
05/10/2014	73*	**215**	**226***	high winds
06/13/2014	29*	101	**183***	high winds
06/27/2014	38*	**165**	130*	high winds
07/27/2014**	106*	152	152*	high winds – monsoonal thunderstorms
08/18/2014	**313***	**298**	**237***	high winds – monsoonal thunderstorms
05/07/2015	15*	ND	**209***	high winds
07/08/2015	23*	**174**	**180***	high winds – monsoonal thunderstorms
07/17/2015	**161**	**337**	**306***	high winds – monsoonal thunderstorms
08/19/2015	48*	**181**	147*	high winds – monsoonal thunderstorms
09/09/2015	**187**	**176**	128*	high winds – monsoonal thunderstorms
11/02/2015	ND	**182**	87*	high winds
12/14/2015	11*	55	**203***	high winds
12/26/2015	13*	100	**300***	high winds

ND = No Data

Bold text indicates concentrations in excess of the PM10 NAAQS

\# 2014 Mecca PM10 data is considered preliminary, subject to change in validation (not submitted or flagged in U.S. EPA AQS database)

* Indicates measurement with continuous FEM (TEOM) instrument; FRM filter is primary measurement when available

** Peak measured concentrations on 7/27/14 did not technically exceed the federal PM10 standard, which requires a 24-hour average of 155 µg/m³, or above, to exceed

After excluding days flagged due to high-wind natural events, the federal 24-hour PM10 standard and the revoked federal annual PM10 standard, were not exceeded at these stations in either 2014 or 2015. Therefore, the maximum 2015 24-hour PM10 concentration (152 µg/m³) and annual average (38.6 µg/m³) were 98 and 71 percent of the current 24-hour federal PM10 standard and the revoked annual federal standard (50 μg/m^3), respectively.[3]

When considering the form of the federal PM10 standards, after excluding the flagged high-wind exceptional events, the 3-year (2013–2015) design values for the Coachella Valley are 152 μg/m^3 for the 24-hour average and 38 μg/m^3 for the annual average (former standard). These are 98 and 70 percent of the 24-hour and former annual PM10 federal standards, respectively, and 304 and 190 percent of the state 24-hour (50 μg/m^3) and annual average (20 μg/m^3) PM10 standards. Figure 7-8 shows the trend of the annual average PM10 concentrations in the Coachella Valley for the station showing the highest PM10 measurements from 1990 through 2015, along with the annual PM2.5 trend.

[3] Technically, a 24-hour PM10 concentration ≥ 155 μg/m^3 is required to exceed the federal standard, due to rounding requirements and the form of the standard. While Coachella Valley concentrations near, but below 155 μg/m^3, are also influenced by high winds, exceptional event flagging only applies to data that violates a NAAQS. The revoked federal annual PM10 standard required an annual PM10 concentration ≥ 50.05 μg/m^3 to exceed that standard, which rounds to 50.1 μg/m^3.

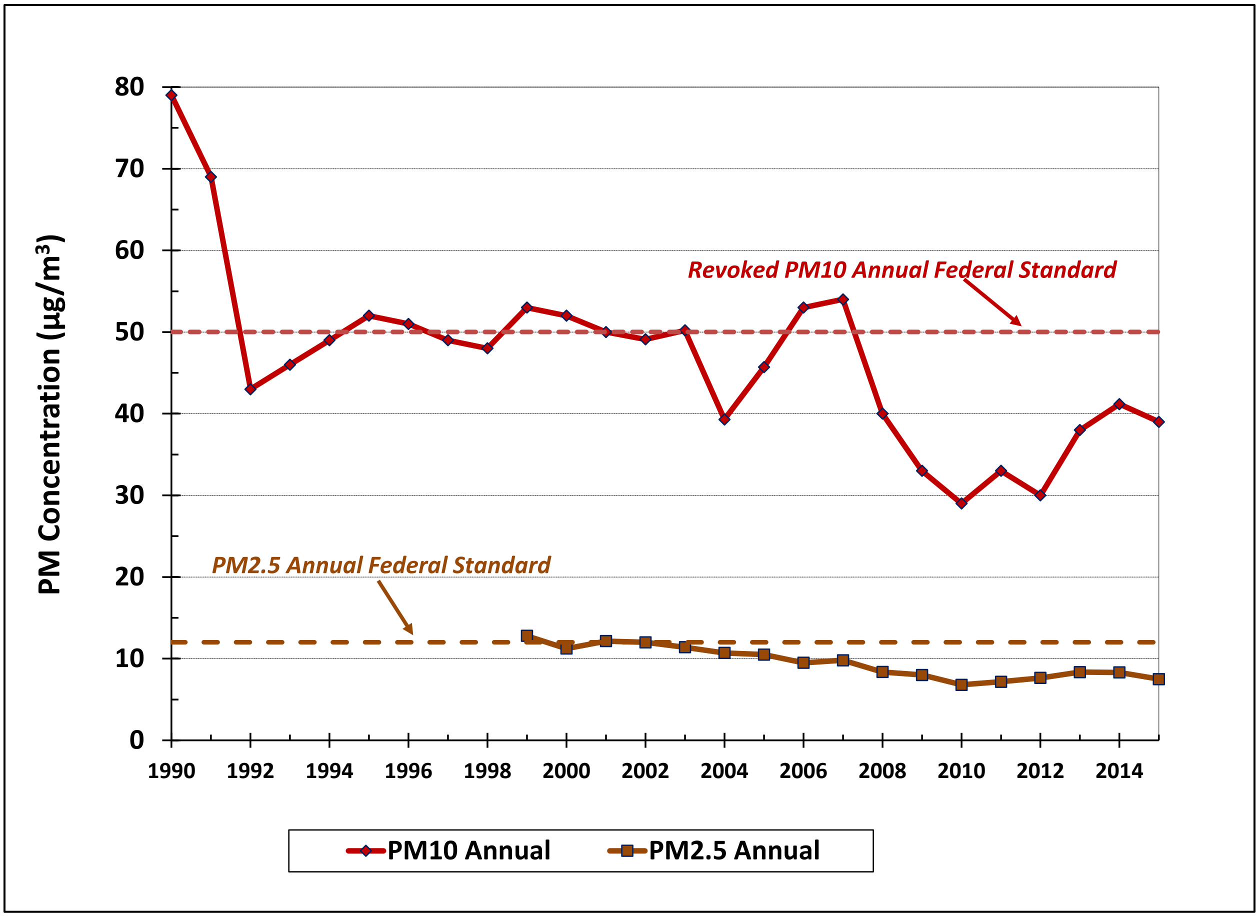

FIGURE 7-8

COACHELLA VALLEY TREND OF ANNUAL AVERAGE PM10 AND PM2.5, 1990–2015

PM2.5

SCAQMD began PM2.5 monitoring in both the Coachella Valley and the Basin in 1999. Two routine stations (Palm Springs and Indio) measure PM2.5 every third day with 24-hour filter-based FRM measurements, as required by U.S. EPA monitoring regulations. PM2.5 has remained relatively low, especially when compared to the Basin, due to fewer combustion-related emissions sources and less secondary aerosol formation in the atmosphere. There is also typically increased vertical mixing and horizontal dispersion in the desert areas. When looking at the 3-year design value for the 2013–2015 period, the Coachella Valley PM2.5 24-hour design value (17 µg/m^3) is 48 percent of the 24-hour NAAQS (35 µg/m^3) and the annual average design value (8.0 µg/m^3) is 66 percent of the current 2012 annual NAAQS (12.0 µg/m^3).

Figure 7-9 shows the trend of 3-year design values for annual average and 24-hour PM2.5 from 2001 through 2015. The stations in the Coachella Valley have not exceeded the 3-year design value form of the current standards since monitoring began. The annual average for the first year of measurements (1999) was just slightly above the level of the standard as can be seen in the trend of the annual average PM2.5 concentrations, shown in Figure 7-8 (above). As was seen elsewhere in California, the slight increasing trend in the 24-hour design values in the Coachella Valley after 2012 is likely due, at least in part, to the ongoing drought conditions (see the PM2.5 section in Chapter 2 for additional drought discussion).

There are occasionally some individual days that exceeded the level of the 24-hour PM2.5 standard in the Coachella Valley, due to the PM2.5 fine particulate portion of windblown dust during very high PM10 events caused by high winds. Even though the PM2.5 standard can be exceeded during these exceptional events, the PM2.5 mass is a very small fraction of the total PM10 mass. These events are "extreme" and can be flagged as exceptional events, but they have not occurred frequently enough to exceed the 98th percentile form of the 24-hour PM2.5 standard.

The 2015 Coachella Valley maximum 24-hour average and the highest annual average concentrations (24.6 $\mu g/m^3$ and 7.5 $\mu g/m^3$, respectively, both at Indio) were 69 percent and 62 percent of the current federal 24-hour and annual standards. The annual PM2.5 state standard (12.0 $\mu g/m^3$), which is the same level as the federal annual standard, but with different rounding requirements, is also not exceeded in the Coachella Valley.

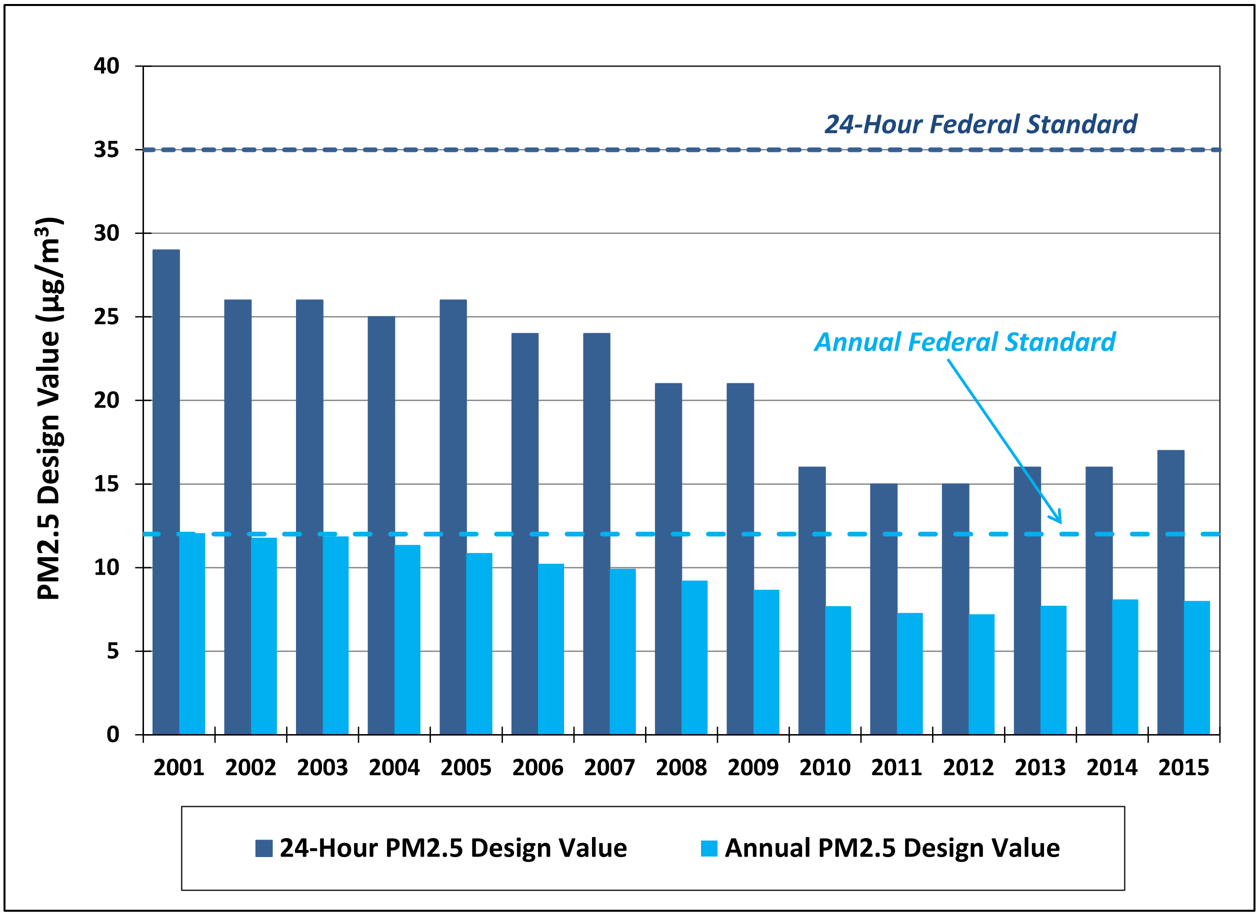

FIGURE 7-9

COACHELLA VALLEY TREND OF 24-HOUR AND ANNUAL AVERAGE PM2.5 3-YEAR DESIGN VALUES, 2001–2015

Desert Hot Springs PM2.5 Monitoring

In addition to the routine PM2.5 measurements, SCAQMD has been measuring PM2.5 since May 2014 with a continuous FEM instrument in Desert Hot Springs. This station is in the predominantly downwind direction of the 800 megawatt CPV Sentinel natural gas-powered electric generation facility.[4] Through the end of 2015, only a single day, June 19, 2015, exceeded the level of the 24-hour federal standard, with a concentration of 52.3 µg/m^3. That high day was associated with a strong windblown dust event that also had very high PM10 concentrations, due to outflows from thunderstorm activity over the desert southwest. Therefore, this day would qualify for flagging as a high-wind exceptional event and the high PM2.5 concentration was not correlated to power plant activity. In addition, such occasional single high

[4] Current and historic preliminary data from the Desert Hot Springs temporary special purpose monitor near CPV Sentinel can be found on the SCAQMD website at: http://www.aqmd.gov/home/library/air-quality-data-studies/special-monitoring/cpv-sentinel-monitoring.

values over the level of the standard have not caused a violation of the 98th percentile, 3-year design value form of the PM2.5 NAAQS.

The preliminary Desert Hot Springs PM2.5 annual average for 2015, the first full year of measurements, was 6.66 μg/m^3, well below the 12.0 μg/m^3 annual federal standard in this northern Coachella Valley location. While the concentrations from the continuous PM2.5 instruments, such as that used at the Desert Hot Springs station, are typically biased higher than the filter-based FRM PM2.5 measurements, the annual average concentration of 6.7 μg/m^3 is close to the 2014 FRM PM2.5 annual average measured at Palm Springs (6.4 μg/m^3) and below that measured at Indio (8.3 μg/m^3).

Other Criteria Pollutants

Carbon Monoxide (CO)

CO was measured at one Coachella Valley air monitoring station (Palm Springs) in 2015. Neither the federal nor state standards were exceeded. The maximum 8-hour average CO concentration recorded in 2015 (0.7 ppm) was less than 8 percent of both the federal (9 ppm) and state (9.0 ppm) 8-hour standards. The maximum 1-hour CO concentration (2.0 ppm) was 6 percent of the federal (35 ppm) and 10 percent of the State (20 ppm) 1-hour CO standards. Historical carbon monoxide air quality data show that the Coachella Valley area has not exceeded the federal CO standards in nearly three decades.

Nitrogen Dioxide (NO_2)

NO_2 was measured at one station (Palm Springs) in the Coachella Valley in 2015. The maximum annual average NO_2 concentration of 0.0062 ppm was approximately 12 percent of the federal annual standard (0.0534 ppm) and 21 percent of the state annual standard (0.030 ppm). The maximum 1-hour average concentration of 41.5 ppb was 42 percent of the 2010 federal (100 ppb) and 23 percent of the state 1-hour standard (180 ppb).

Sulfur Dioxide (SO_2)

SO_2 concentrations were not measured in the Coachella Valley in 2015. Historic analyses have shown SO_2 concentrations to be well below the state and federal standards and there are no significant emissions sources in the Coachella Valley.

Sulfates (SO_4^{2-})

Sulfate, from FRM PM10 filters, was measured at two stations (Palm Springs and Indio) in the Coachella Valley in 2015. The 2015 maximum 24-hour average sulfate concentration was 4.6 μg/m^3 (18 percent of the 25 μg/m^3 State sulfate standard) and the 3-year maximum State designation value was 2.6 μg/m^3 (10 percent of the 25 μg/m^3 State sulfate standard). While still well below the State standard, the 4.6 μg/m^3 peak value may not be the State designation value, since it was associated with a high-wind exceptional event that caused exceedances of the PM10 NAAQS at Indio at both the Palm Springs and Indio air monitoring stations. There is no federal sulfate standard.

Lead (Pb)

Lead was not measured in the Coachella Valley in 2015. Historic analyses have shown concentrations to be less than the state and federal standards as no significant sources of lead emissions are located in the Coachella Valley.

Hydrogen Sulfide (H_2S)

SCAQMD started measuring H_2S near the Salton Sea at two locations in November 2013 in order to better understand odor events related to the Salton Sea and to better communicate these events to the community. One of the H_2S monitoring stations is located on Torres-Martinez tribal land that is close to the shore, in a sparsely populated area. The second monitor is located at the SCAQMD Mecca air monitoring station site (Saul Martinez Elementary School), a more populated community approximately four miles north of the Salton Sea.

A significant H_2S odor event occurred in September 2012, bringing sulfur or rotten-egg odors and widespread attention to the issue of H_2S odors from the Salton Sea. This event affected people in communities throughout the Coachella Valley, across many areas of the Basin, and into portions of the Mojave Desert Air Basin to the north. Over 235 odor complaints were registered with SCAQMD during this event, from as far west as the San Fernando Valley in Los Angeles County.

H_2S is a product of anaerobic organic decay in the Salton Sea that is particularly active in the summer months, especially at the bottom of the shallow Sea with the abundant desert sunlight and heat. The 2012 event occurred during a period of moist southeasterly "monsoonal" flows in desert areas of southeastern California, along with desert thunderstorms. Strong outflow winds from thunderstorms to the south crossed the Salton Sea, causing mixing in the water layers that released and transported significant amounts of H_2S gas and the associated odors.

While strong events like that of September 2012 are uncommon, less extreme releases of H_2S can cause odors in areas close to the Salton Sea relatively frequently. These events are more prevalent during the hot summer months, especially when the southeasterly "monsoonal" flow events occur, but they sometimes occur at other times of the year. Elevated H_2S is typically measured in the Coachella Valley during wind shifts that bring flows from the south or east directions. These shifts occur most often in the early morning or the late afternoon/early evening hours in this area. The Salton Sea's receding shorelines and shallower waters may affect the number or severity of these odor events in the future.

While there is no federal standard for H_2S, California has set a standard of 30 parts per billion (ppb), averaged over one hour as a level not to be reached or exceeded. The state standard was adopted in 1969, based on the thresholds for annoyance and unpleasant odors, with the purpose of decreasing odor annoyances.[5] Humans can detect H_2S odors at extremely low concentrations, down to a few ppb. Above the state standard, most individuals can smell the offensive odor and many may experience temporary symptoms such as headaches and nausea due to unpleasant odors. The CAAQS for H_2S was reviewed in 1984 and retained.

In 2014 and 2015, 24 and 27 days, respectively, had exceedances of the 1-hour state H_2S standard at the sparsely populated Torres-Martinez monitoring site at the Salton Sea. Of these, five days in 2014 and 12 12 days in 2015 had H_2S exceedances that lasted longer than one hour. The highest number of hourly exceedances in a day was 20, on September 9, 2015, while the next highest number of hours exceeding in a single day was six. The exceedances at this station occurred between the beginning of April and the

[5] Collins, J., and D. Lewis. (2000). Hydrogen Sulfide: Evaluation of Current California Air Quality Standards with Respect to Children. California Office of Environmental Health Hazard Assessment document prepared for CARB. http://www.arb.ca.gov/ch/ceh/001207/h2s_oehha.PDF.

end of October, with most occurring in August and September. The highest 1-hour concentration measured at the Torres-Martinez station in 2014 and 2015 was 183 ppb, on September 9, 2015.

Further north from the Salton Sea in Mecca, the state H_2S standard was exceeded on three days in 2014 and six days in 2015, with a peak concentration of 129 ppb on September 3, 2015. The most hours in a day to exceed the standard at Mecca was six, on September 9, 2014. Most of the daily exceedances only lasted one or two hours. All the 2014 and 2015 Mecca exceedances occurred in the months of August and September. Figure 7-10 shows the 2014 and 2015 monthly number of days by station exceeding the state H_2S standard in the Coachella Valley.

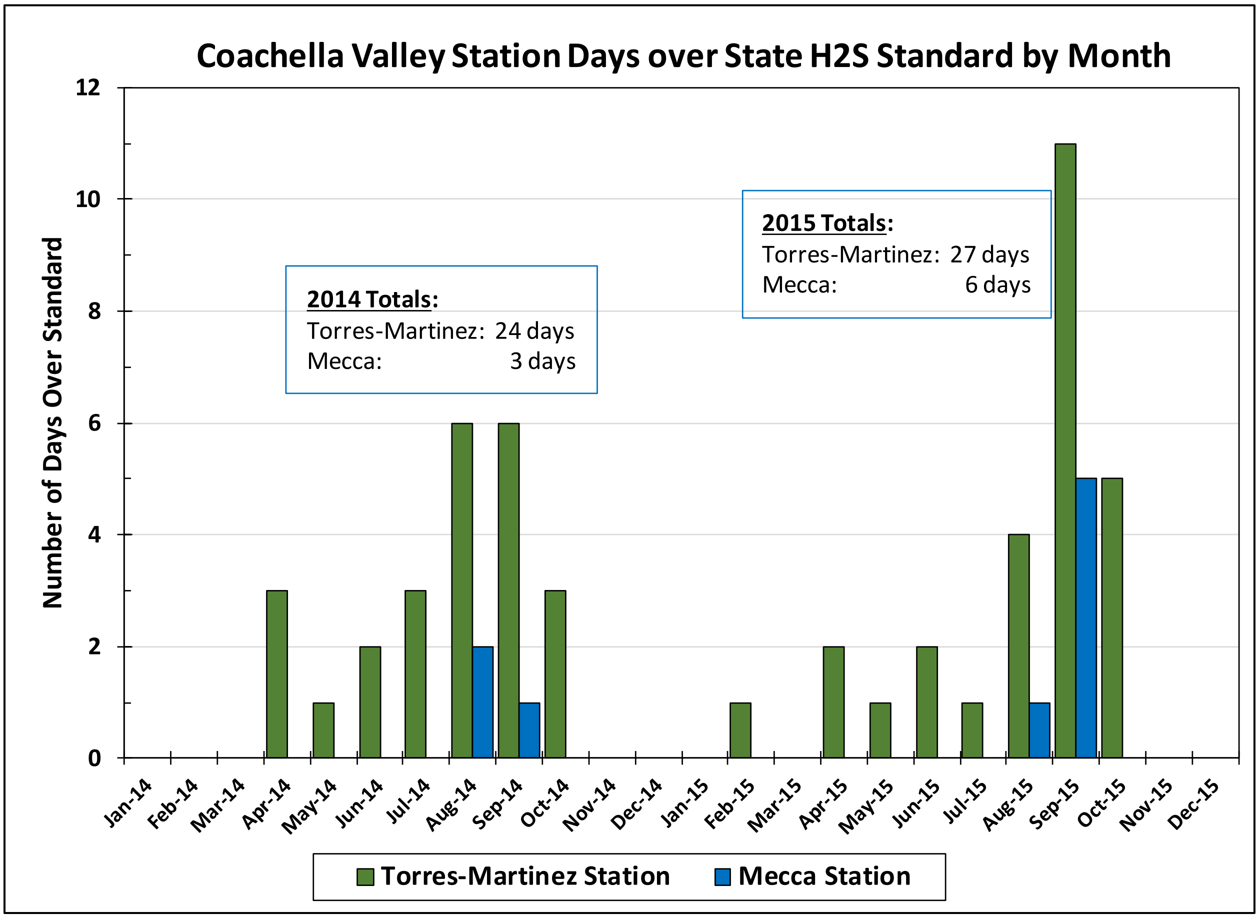

FIGURE 7-10

NUMBER OF DAYS IN EACH MONTH WITH 1-HOUR HYDROGEN SULFIDE (H_2S) OVER THE STATE STANDARD IN 2014 AND 2015 FOR COACHELLA VALLEY MONITORING STATIONS

Pollutant Transport

Pollutant transport from the Basin to the SSAB occurs through the San Gorgonio Pass (sometimes referred to as the Banning Pass) to the Coachella Valley.[6] The transport pathway to the Coachella Valley has been well documented and studied in the past. An experiment in the early 1970s concluded that the South Coast Air Basin was the source of the observed high ozone levels in the Coachella Valley.[7] Transport from Anaheim to Palm Springs was directly identified with an inert sulfur hexafluoride tracer release.[8] A comprehensive study of transport from the Basin to the SSAB also confirmed the ozone transport pathway to the Coachella Valley.[9]

Ozone pollutant transport to the Coachella Valley can be demonstrated by examining averaged ozone concentrations by time of day for various stations along the transport corridor from Los Angeles County into Riverside County and into the Coachella Valley. Figure 7-11 shows the diurnal distribution of averaged 1-hour ozone concentrations for the May–October smog season, by hour, for the 2012–2014 period. The Coachella Valley transport route is represented, starting at Central Los Angeles as the main emissions source region and passing through Riverside-Rubidoux and Banning and finally through the San Gorgonio Pass to Palm Springs in the Coachella Valley. Near the source regions, ozone peaks occur just after mid-day (1 to 2 p.m. Pacific Standard Time (PST)), on average, during the peak of incoming solar radiation and therefore the peak of ozone production. Ozone peaks near the emissions source region are not as high as those further downwind, due to the photochemical reaction time needed for ozone to form from precursor gases. Downwind of the source region, ozone peaks occur later in the day and at generally higher concentrations as ozone and ozone precursors are transported downwind and photochemical reactions continue. At Palm Springs, ozone concentration peaks occur between 4 and 6 p.m. PST. If this peak were locally generated, it would be occurring closer to near mid-day, as is seen in the major source areas of the Basin, and not in the late afternoon or early evening, as is seen at Palm Springs.

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[6] Keith, R.W. (1980). A Climatological Air Quality Profile: California's South Coast Air Basin. Staff Report, South Coast Air Quality Management District.

[7] Kauper, E.K. (1971). Coachella Valley Air Quality Study. Final Report, Pollution Res. & Control Corp., Riverside County Contract & U.S. Public Health Service Grant No. 69-A-0610 RI.

[8] Drivas, P.J., and F.H. Shair. (1974). A Tracer Study of Pollutant Transport in the Los Angeles Area. *Atmos. Environ*. 8, 1155-1163.

[9] Smith, T.B., et al. (1983). The Impact of Transport from the South Coast Air Basin on Ozone Levels in the Southeast Desert Air Basin. CARB Research Library Report No. ARB-R-83-183. CARB Contract to MRI/Caltech. http://www.arb.ca.gov/research/single-project.php?row_id=64953.

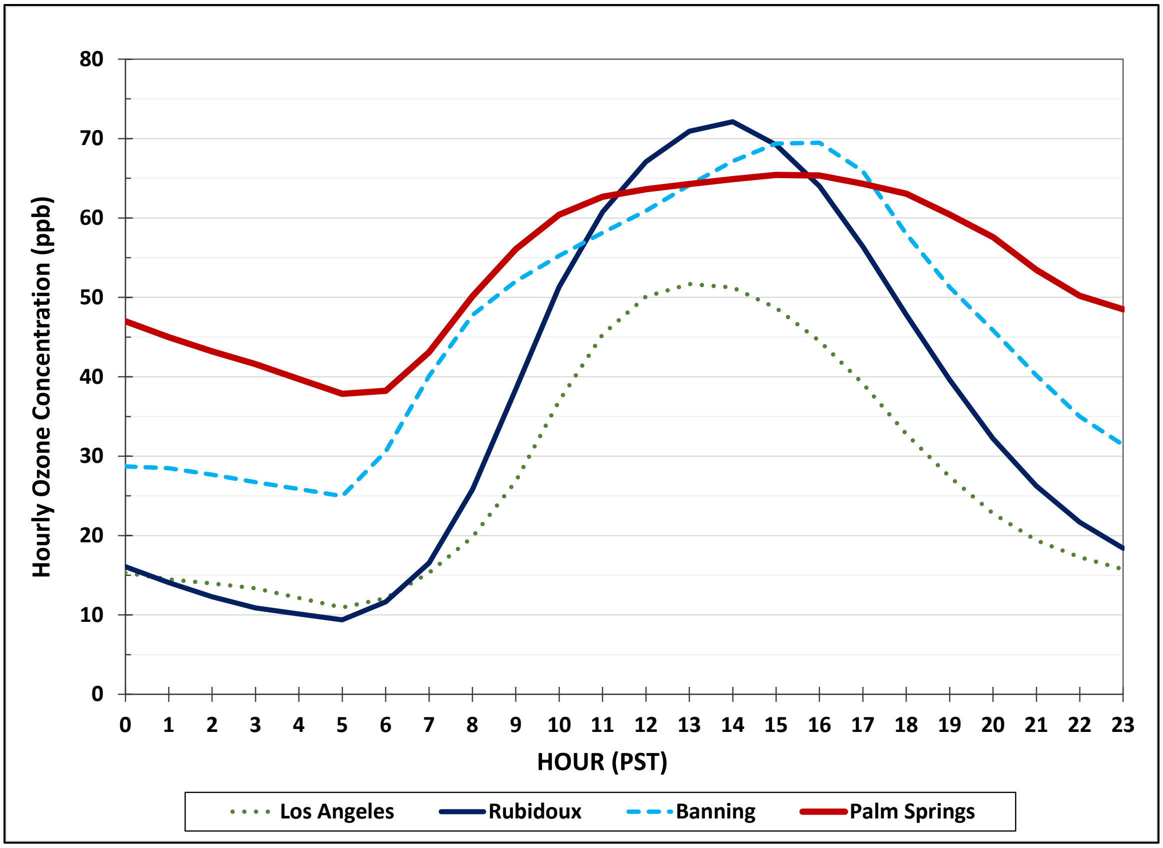

FIGURE 7-11

DIURNAL PROFILE OF 3-YEAR (2012–2014) HOURLY OZONE CONCENTRATIONS ALONG THE TRANSPORT ROUTE INTO THE COACHELLA VALLEY

(HOURS IN PACIFIC STANDARD TIME (PST), AVERAGED FOR THE MAY–OCTOBER OZONE SEASON BY HOUR)

Palm Springs also exhibits higher morning ozone concentrations, when compared to the concentrations in the morning in the Basin closer to the main emissions source areas (i.e., Los Angeles and Rubidoux). The stations in the Basin have more local NOx emissions (mostly from mobile sources) that help scavenge[10] the ozone after dark when ozone photochemistry ceases. The Coachella Valley has limited local NOx emissions to help scavenge the ozone at night. This elevated overnight ozone contributes to an early morning start to the daily ozone increase in Coachella Valley, starting after sunrise (5–6 a.m. PST), with the ample sunlight and strong overnight temperature inversions in the desert. Ozone concentrations observed on high ozone days in the Coachella Valley can reach an initial peak before noon and then drop slightly with increased mixing in the early afternoon, before climbing to the daily peak, typically between 4 and 6 p.m., as the typical onshore flow reaches the Coachella Valley through the San Gorgonio Pass, transporting new ozone from the Basin.

[10] Freshly emitted NOx includes NO, which destroys ozone through a fast reaction colloquially termed 'scavenging.'

Future Air Quality

Emissions Inventories

For illustrative purposes, Table 7-5 shows base year (2012) and future-year emission inventories for the Coachella Valley, based on the AQMP inventory methodology as described in Appendix III – Base and Future Year Emission Inventory. Emissions, in tons per day, of VOC, NOx, CO, SOx, PM10, PM2.5, and NH_3 are shown. The corresponding inventories for the Basin are shown for comparison in Table 7-6. The Basin emissions, typically upwind of the Coachella Valley, overwhelm the locally-generated emissions. Depending on the pollutant, emissions in the Basin are 10 to over 350 times greater than emissions in the Coachella Valley. Future increases in some of the pollutant emissions within the Coachella Valley are largely due to projected increases in population, VMT, and construction activity. It is clear that improved air quality in the Coachella Valley depends on reduced emissions in the Basin. This is further illustrated by the positive trends in ozone air quality in both areas, as described earlier.

TABLE 7-5

Coachella Valley Annual Average Emissions for Base Year (2012) and Future Years, without Further Controls

COACHELLA VALLEY EMISSIONS (Tons/Day)							
YEAR	**VOC**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**	**NH_3**
2012	14.1	27.1	59.7	0.2	15.2	3.4	2.4
2019	12.6	16.8	45.3	0.2	21.7	3.7	2.3
2021	12.6	14.7	43.6	0.2	23.3	3.9	2.3
2022	12.6	13.7	43.2	0.2	23.7	3.9	2.3
2023	12.6	11.2	43.0	0.2	24.3	4.0	2.3
2025	12.7	10.5	42.8	0.2	25.3	4.1	2.4
2026	12.8	10.3	43.1	0.2	25.8	4.2	2.4
2031	13.5	9.4	45.7	0.2	28.6	4.6	2.5

TABLE 7-6

South Coast Air Basin Annual Average Emissions for Base Year (2012) and Future Years, without Further Controls

SOUTH COAST AIR BASIN EMISSIONS (Tons/Day)							
Year	**VOC**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**	**NH_3**
2012	470.1	539.9	2123.1	18.4	152.5	66.4	81.1
2019	375.6	353.1	1447.3	16.6	158.8	63.9	74.0
2021	365.4	309.1	1357.3	16.8	160.7	63.8	72.9
2022	362.3	290.5	1324.7	17.0	161.9	64.1	72.6
2023	358.8	256.7	1298.1	17.1	162.7	64.2	72.3
2025	353.5	240.6	1246.8	17.4	163.8	64.3	72.3
2026	351.8	234.2	1231.8	17.5	164.4	64.4	72.4
2031	345.0	213.8	1187.8	18.2	167.9	65.3	73.1

Reasonable Further Progress

The federal CAA requires SIPs for most nonattainment areas to demonstrate RFP toward attainment through emission reductions phased in from the time of the SIP submission until the attainment date time frame. The RFP requirements in the CAA are intended to ensure that ozone nonattainment areas provide for sufficient progress towards ozone precursor emission reductions to attain the ozone NAAQS.

Per CAA Section 171(1), RFP is defined as "such annual incremental reductions in emissions of the relevant air pollutant as are required by this part or may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date." As stated in subsequent federal regulation, the goal of the RFP requirements is for areas to achieve generally linear progress toward attainment. To determine RFP for the attainment date, U.S. EPA has determined that the plan should rely only on emission reductions achieved from sources within the nonattainment area.

Subpart 2 sections 182(b)(1) and 182(c)(2)(B) contain specific emission reduction targets to ensure that ozone nonattainment areas provide for sufficient precursor emission reductions to attain the ozone national ambient air quality standard. Section 182(b)(1)(A) requires that "moderate" or above areas provide for VOC reductions of at least 15 percent from baseline emissions within six years after November 15, 1990. The U.S. EPA final rule of "*Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements*" (80 FR 12263) states that if an area has already met the 15 percent requirement for VOC under either the 1-hour ozone NAAQS or the 1997 8-hour ozone

NAAQS, such requirement under 182(b)(1) would not have to be fulfilled again. Instead, such areas would need to meet the CAA requirements under Section 182(c)(2)(B), which requires that "serious" and above areas provide VOC and/or NOx reductions (CAA, Section 182(c)(2)(C)) of 18 percent over the first six years after the baseline year for the 2008 8-hour ozone NAAQS, and an additional 3 percent per year averaged over each consecutive three-year period until the attainment date.

As mentioned a number of times in this chapter, poor ozone air quality in the Coachella Valley is primarily due to transport of ozone and its precursors from the upwind source region of the Basin and attainment in Coachella Valley is only possible with substantial emission reductions in the Basin. With this in mind, the proposed control strategy consists of two components: 1) an aggressive control strategy for NOx emission sources in the Basin; and 2) control of locally generated emissions via proposed state-wide or nationally applied control measures implemented by state and federal actions.

Tables 7-7 and 7-8 summarize the RFP calculations. Figure 7-12 depicts the target level and projected baseline RFP demonstration for VOC. For each of the milestone years, the District is able to show that the required progress is met on the basis of reductions from the existing control program using a combination of VOC and NOx reductions within the Coachella Valley portion of the SSAB alone. No additional reductions from the proposed control measures in the Plan are needed for progress purposes. Projected VOC baseline emissions are not sufficient to meet the CAA requirements as the baseline VOC emission levels are above the target levels of each milestone year. Therefore, projected NOx baseline emission reductions are needed to show compliance with the targeted RFP levels. The CAA Section 182(c)(2)(C) provides for NOx reductions to substitute for RFP reductions not achieved for VOC emissions. The demonstration in Tables 7-7 and 7-8 show compliance with RFP requirements as well as CAA contingency requirements. Contingency measures for attainment in Coachella Valley will be specified in CARB's staff report on the South Coast Plan.

TABLE 7-7

Summary of Reasonable Further Progress Calculations – VOC

ROW	CALCULATION STEP [a]	2012[b]	2018	2021	2024	2026
1	Baseline VOC Emissions (tpd)	16.50	14.89	14.61	14.88	15.10
2	Required Percent Change Since Previous Milestone Year (%)		18.0	9.0	9.0	6.0
3	Target VOC Level (tpd)		13.53	12.31	11.20	10.53
4	Cumulative Milestone Year Shortfall (tpd)		1.36	2.30	3.68	4.57
5	Cumulative Shortfall in VOC (%)		8.2	13.9	22.3	27.7
6	Incremental Milestone Year Shortfall (%)		8.2	5.7	8.4	5.4

[a] Units are in tons per day (tpd), based on the summer planning inventory unless otherwise noted
[b] Base Year (2012)

Row Description:

ROW 1: Projected baseline emissions from Appendix III – Baseline and Future Emission Inventory taking into account existing rules and projected growth

ROW 2: Required 18% reduction 6 years after Base Year; future milestone years are every 3 years until attainment year; and required reductions are 3% per year for each milestone year (e.g., for every 3 years, required 9% reduction)

ROW 3: [(1-Row 2/100) x Row 1 or Row 3] – Base Year Row 1 for first milestone year, and previous milestone year's target level (Row 3) for remaining milestone years

ROW 4: [(Row 1) – (Row 3)] or (Baseline – Target) – negative number meets target level and positive number is shortfall of target level

ROW 5: [(Row 4) / (Base Year Row 1) x 100]

ROW 6: Negative (Row 5) is zero shortfall; positive number is a shortfall. Incremental milestone year shortfall is determined by subtracting the previous year's shortfall from the cumulative (e.g., for 2024, cumulative shortfall of 22.3% – previous 2021 shortfall of 13.9% = 8.4%)

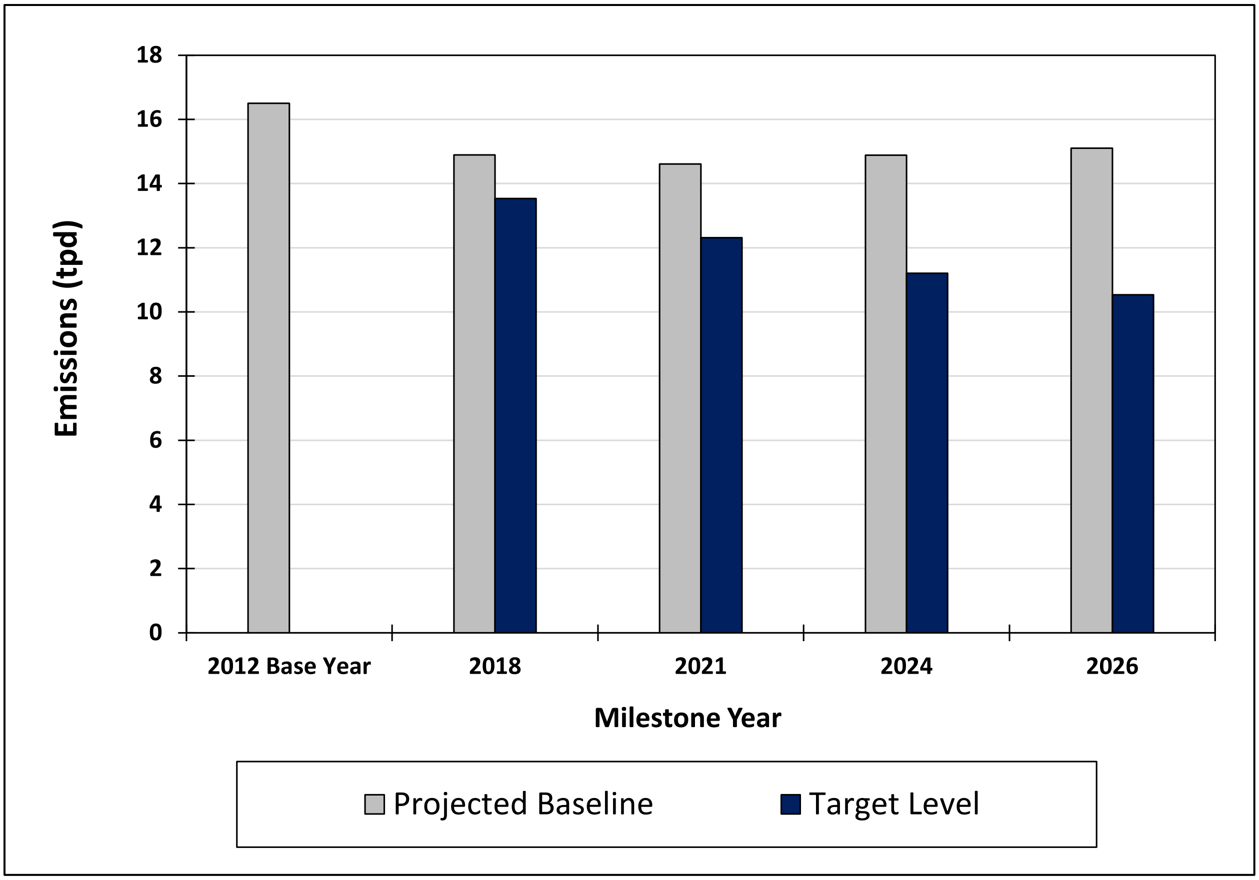

FIGURE 7-12

REASONABLE FURTHER PROGRESS – VOC

TABLE 7-8

Summary of Reasonable Further Progress Calculations – NOx

ROW	CALCULATION STEP [a]	2012[b]	2018	2021	2024	2026
1	Baseline NOx Emissions (tpd)	26.53	16.60	13.44	9.65	8.92
2	Reductions in NOx Emissions since Base Year (tpd)		9.93	13.09	16.88	17.61
3	Percent Reductions in NOx Emissions since Base Year (%)		37.4	49.3	63.6	66.4
4	Contingency plus VOC Shortfall (%)		3.0	11.2	16.9	25.3
5	Percent Available for NOx Substitution (%)		34.4	38.1	46.7	41.1
6	Incremental Milestone Year VOC Shortfall (%)		8.2	5.7	8.4	5.4
7	Percent Surplus Reduction (%)		26.2	32.4	38.3	35.7
8	RFP Compliance		Yes	Yes	Yes	Yes
9	Contingency Compliance		Yes	Yes	Yes	Yes

[a] Units are in tons per day (tpd), based on the summer planning inventory unless otherwise noted
[b] Base Year (2012)

Row Description:

ROW 1: Projected baseline emissions from Appendix III – Baseline and Future Emission Inventory taking into account existing rules and projected growth

ROW 2: Reductions achieved in Baseline: [(Row 1 Base Year) – (Row 1 Milestone Year)]; e.g., for 2018: 26.53 tpd – 16.60 tpd = 9.93 tpd

ROW 3: % Reductions achieved since Base Year: [(Row 2) / (Row 1 Base Year)] x 100; e.g., for 2018: (9.63/26.53) x 100 = 37.4%

ROW 4: Reserves 3% (1 year worth of CAA RFP reductions) for contingency measure implementation plus the previous year(s)'s incremental milestone year VOC shortfall from Table 7-7

ROW 5: [(Row 3) – (Row 4)]

ROW 6: Incremental milestone year VOC shortfall from Table 7-7

ROW 7: Surplus reductions achieved [(Row 5) – (Row 6)]

ROW 8: Positive number in Row 7 is percent surplus for each milestone year, thus meeting RFP target levels

ROW 9: Surplus includes 3% contingency carryover and VOC shortfall, and still meets RFP target levels

VMT Offset Demonstration for the 2008 Ozone Standard

In 1979, U.S. EPA established a primary health-based NAAQS for ozone at 0.12 ppm averaged over a 1-hour period [See 44 Fed. Reg. 8220 (February 9, 1979)]. The CAA, as amended in 1990, classified areas that had not yet attained that standard based on the severity of their ozone problem, ranging from "marginal" to "extreme." "Extreme" areas were provided the most time to attain, until November 15, 2010, but were also subject to the most stringent requirements. In particular, "severe" and "extreme" areas were subject to CAA Section 182(d)(1)(A), which requires SIPs to adopt "specific enforceable transportation control strategies and transportation control measures to offset any growth in vehicle miles traveled or numbers of vehicle trips in such area…." U.S. EPA designated the Coachella Valley, then as part of the Southeast Desert Modified Air Quality Management area, as "Severe-17" on November 6, 1991 (56 Fed. Reg. 56694), and thus the Coachella Valley was subject to this requirement. The U.S. EPA has historically interpreted this provision of the CAA (now called "VMT emissions offset requirement") to allow areas to meet the requirement by demonstrating that emissions from motor vehicles decline each year through the attainment year [see 57 Fed. Reg. 13498, at 13521–13523 (April 16, 1992)].

In 1997, U.S. EPA replaced the 1-hour ozone standard with an 8-hour standard of 0.08 ppm [62 Fed. Reg. 38856 (July 18, 1997)]. The U.S. EPA promulgated rules implementing this standard with the "Phase 1" rule issued on April 30, 2004 (69 Fed. Reg. 23951), and the Phase 2 rule issued on November 29, 2005 (70 Fed. Reg. 71612). These implementation rules required that areas classified as "severe" or "extreme" under the 1997 8-hour standard would also be subject to the VMT offset requirement.

In 2008, U.S. EPA revised the 8-hour ozone NAAQS to a level of 0.075 ppm (73 Fed. Reg. 16436, March 27, 2008). The Coachella Valley was subsequently designated nonattainment for the 2008 standard on May 21, 2012 and classified as a "severe-15" nonattainment area (77 Fed. Reg. 30087), making the Coachella Valley subject to the requirements of CAA Section 182(d)(1)(A) for the 2008 8-hour ozone NAAQS.

In August 2012, U.S. EPA issued guidance titled "Implementing Clean Air Act Section 182(d)(1)(A): Transportation Control Measures and Transportation Control Strategies to Offset Growth in Emissions Due to Growth in Vehicle Miles Traveled". Among other things, U.S. EPA's guidance points out that subsequent court decisions regarding previous VMT offset demonstrations omitted any reference to "transportation control strategies" (TCS). TCSs, which are not defined in the CAA or U.S. EPA regulation, are eligible to offset growth in emissions due to growth in VMT. The U.S. EPA's new guidance indicates that technology improvements such as vehicle technology improvements, motor vehicle fuels, and other control strategies that are transportation-related could be used to offset increases in emissions due to VMT growth. U.S. EPA's revised guidance sets forth a method of calculating the actual growth in emissions due to growth in VMT. Essentially, the area compares projected attainment year emissions assuming no new control measures and no VMT growth with projected actual attainment year emissions (including new control measures and VMT growth). If the latter number is smaller than the former, no additional transportation control measures or strategies would be required. If additional transportation control measures and transportation control strategies are required, they should be clearly identified and distinguished from the measures included in the initial calculations for the base year and the three scenarios identified for the attainment year.

In addition, the guidance recommends that the base year used in the demonstration be the base year used in the attainment demonstration for the ozone standard. To address U.S. EPA's guidance, 2012 is used in this demonstration as the base year for the 2008 8-hour standard. Consistent with U.S. EPA guidance, emissions of VOC are used to determine compliance with the VMT offset requirement.

Transportation Control Strategies and Transportation Control Measures

By listing them separately, the Clean Air Act [CAA §182(d)(1)(A)] differentiates between TCS and transportation control measures (TCM), and thus provides for a wide range of strategies and measures as options to offset growth in emissions from vehicle miles traveled (VMT) growth. In addition, the example TCMs listed in Section 108(f)(1)(A) of the CAA include measures that reduce emissions by reducing VMT, reducing tailpipe emissions, and removing dirtier vehicles from the fleet. California's motor vehicle control program includes a variety of strategies and measures including new engine standards and in-use programs (e.g., smog check, vehicle scrap, fleet rules, and idling restrictions). TCMs developed by SCAG provide additional reductions. In addition, SCAG prepares a report every two years that reports on the status of implementation of TCMs.

Based on the provisions in Section 182(d)(1)(A) and the clarifications provided in the U.S. EPA guidance, any combination of TCSs and TCMs may be used to meet the requirement to offset growth in emissions resulting from VMT growth. Since 1990 when this requirement was established, California has adopted more than sufficient enforceable transportation control strategies and measures to meet the requirement to offset the growth in emissions from VMT growth.

Emissions Due to VMT Growth

The U.S. EPA guidance provides a recommended calculation methodology to determine if sufficient transportation control strategies and TCMs have been adopted and implemented to offset the growth in emissions due solely to growth in VMT. As such, any increase in emissions solely from VMT increases in the future attainment year from the base year (assuming that there are no further motor vehicle control programs implemented after the base year) would need to be offset. In addition, a calculation is needed to show the emissions levels if VMT had remained constant from the base year to the future attainment year. A comparison of the projected attainment year emissions assuming no new control measures and no VMT growth with projected actual attainment year emissions (including new control measures and VMT growth) can be made. If the latter number is smaller than the former, no additional transportation control measures or strategies would be required.

VMT Offset Demonstration Summary

For the 2008 8-hour ozone NAAQS offset demonstration, 2012 controls are used as the base case control level since 2012 is the base year of the SIP. 2026 is the Coachella Valley's attainment demonstration attainment year for the 2008 ozone NAAQS. The following calculations are based on the recommended calculation methodology provided in U.S. EPA guidance. Additional details on the analysis methodology is provided in Appendix VI-E – Compliance with other Clean Air Act Requirements.

Table 7-9 summarizes the vehicle miles traveled (VMT), vehicle starts, vehicle population, and VOC emissions for the Coachella Valley in the 2012 base year from the EMFAC2014 model. Table 7-10 summarizes the vehicle parameter and VOC emissions as projected for the Coachella Valley in the attainment year (2026), as calculated with three emissions scenarios:

1. 2026 VOC emissions calculated with the motor vehicle control program frozen at 2012 levels and with projected VMT, starts, and vehicle population for the attainment year. This represents what the emissions in the attainment year would have been if transportation control strategies and transportation control measures had not been implemented after 2012. To perform this calculation, California Air Resources Board (CARB) staff identified the on-road motor vehicle control programs adopted since 2012 and adjusted EMFAC2014 to reflect the VOC emissions levels in 2026 without the benefits of the post-2012 control programs. The projected VOC emissions are 3.1 tons/day.
2. 2026 VOC emissions calculated with the motor vehicle control program frozen at 2012 levels and assuming VMT, starts, and vehicle population do not increase from 2012 levels. In this calculation, the VOC emission levels in calendar year 2026 without benefit of the post 2012 control program are calculated. EMFAC2014 allows a user to input different VMT, starts, and vehicle population than default. For this calculation, EMFAC2014 was run without the benefit of the post 2012 control program for calendar year 2026 with the 2012 level of VMT of 11,402,997 miles per day, the 2012 level of starts at 2,006,983 per day, and the 2012 level of population at 319,781 vehicles. The VOC emissions associated with 2012 VMT, starts, and vehicle population in calendar year 2026 are 2.5 tons/day.
3. 2016 VOC emissions that represent emissions with full implementation of all transportation control strategies and transportation control measures since 2012 and which represents the projected future year baseline emissions inventory using the VMT, starts, and vehicle population for the attainment year. The VOC emission levels for 2026 assuming the benefits of the post-2012 motor vehicle control program and the projected VMT, starts, and vehicle population in 2026 are calculated using EMFAC2014. The projected VOC emissions level is 2.0 tons/day.

TABLE 7-9

Summary of 2012 Coachella Valley Base Year VMT Factors and VOC Emissions

	VMT (thousand miles/day)	Starts (thousands/day)	Vehicle Population (thousands)	VOC Emissions* (tons/day)
2012 Base Year	11,403	2,007	320	4.8

* Does not include diurnal or resting loss emissions

TABLE 7-10

Summary of 2026 Coachella 2026 Attainment Demonstration Year VMT Factors and VOC Emissions

	Description	VMT* (miles/day, thousands)	Starts (thousands/day)	Vehicle Population (thousands)	VOC Emissions** (tons/day)
(1)	**Emissions with Motor Vehicle Control Program Frozen at 2012 Levels** (VMT, starts and vehicle population at 2026 levels.)	14,977	2,738	446	3.1
(2)	**Emissions with Motor Vehicle Control Program Frozen at 2012 Levels** (VMT, starts, and vehicle population at 2012 levels)	11,403	2,007	320	2.5
(3)	**Emissions with Full Motor Vehicle Control Program in Place** (VMT, starts and vehicle population at 2026 levels)	14,977	2,738	446	2.0

* CY 2026 VMT based on the SCAG 2016 RTP

** Does not include diurnal or resting loss emissions

As provided in the U.S. EPA guidance, to determine compliance with the provisions of Section 182(d)(1)(A) of the CAA, the emissions levels calculated in Calculation 3 should be less than the emissions levels in Calculation 2 in Table 7-10. The 2026 VOC emissions with full motor vehicle control program are 2.0 tons/day, which is less than 2.5 tons/day and, therefore, this requirement is met. Figure 7-13 shows graphically that the VMT offset requirement is met due to the emissions benefits of the motor vehicle control programs in offsetting VOC emissions due to increased VMT, starts, and vehicle population in the Coachella Valley for the 2008 8-hour ozone standard with the 2012 base year. The left bar (in purple) shows the emissions in the base year with base year controls. The three bars on the right in each figure show the emissions levels in the attainment year for the three calculations identified above: (1) the red bar shows attainment year emissions with base year controls and attainment year VMT, starts, and vehicle population; (2) the green bar shows attainment year emissions with base year controls, VMT, starts, and vehicle population; and (3) the blue bar shows attainment year emissions with attainment year controls, VMT, starts, and vehicle population. Based on the U.S. EPA guidance, since the blue bar is lower than the green bar, the identified transportation control strategies and TCMs are sufficient to offset the growth in emissions.

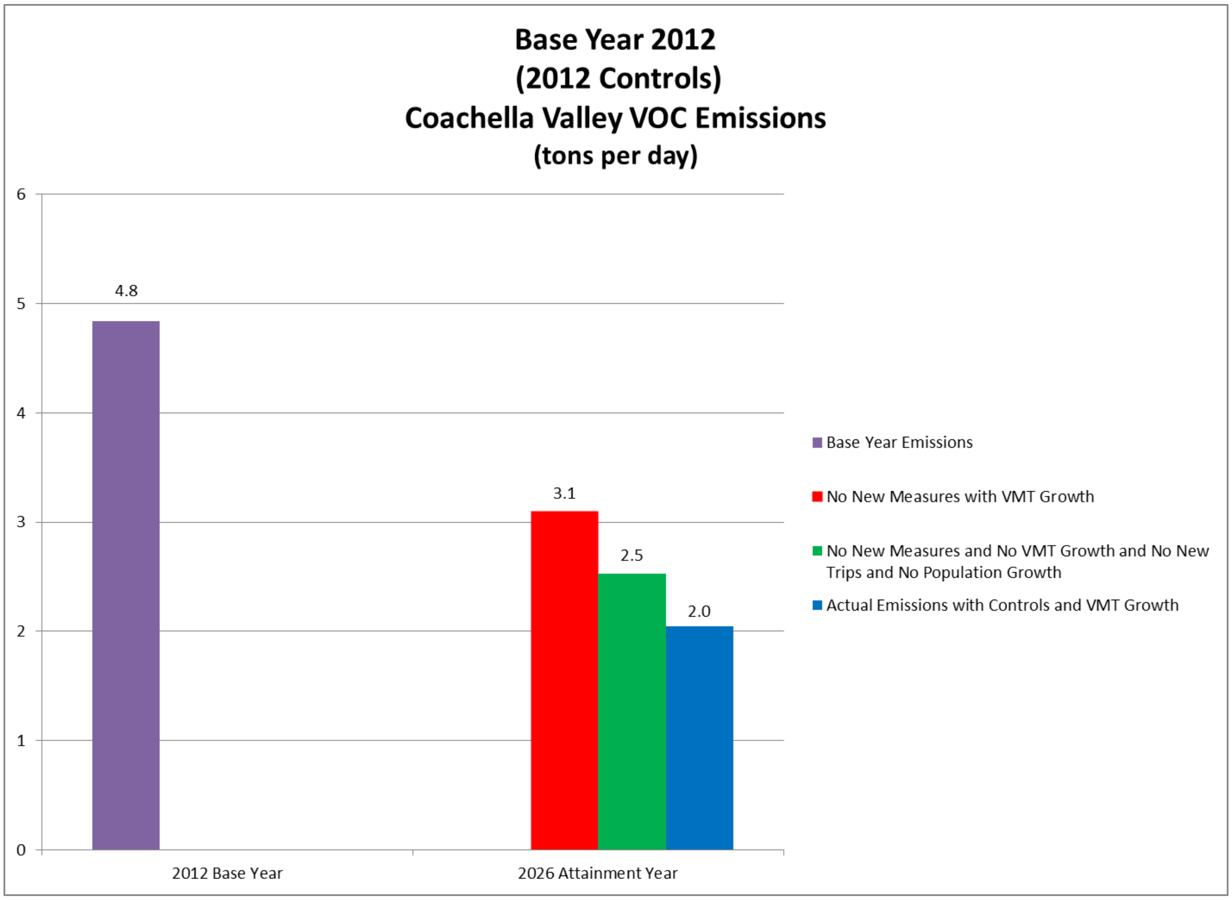

FIGURE 7-13

REASONABLE FURTHER PROGRESS – VOC

(VOC EMISSIONS FROM ON-ROAD MOBILE SOURCES IN THE COACHELLA VALLEY; 2012 BASE YEAR AND 2026 ATTAINMENT YEAR; DOES NOT INCLUDE RESTING OR DIURNAL LOSS EMISSIONS)

Ozone Attainment Demonstration and Projections

This section presents an overview of the new ozone SIP attainment demonstration for the 2008 8-hour ozone NAAQS for the Coachella Valley. It also evaluates the progress toward attainment of the 1997 8-hour ozone NAAQS, although it is not an update to the previously submitted ozone SIP attainment demonstration for that revoked standard. In addition, this section provides an initial look at future attainment of the 2015 8-hour ozone NAAQS (0.070 ppm), which is also not part of this SIP.

2008 8-Hour Ozone NAAQS Attainment Demonstration

In the 2007 AQMP and the subsequent SIP submittal, SCAQMD requested that U.S. EPA reclassify the Riverside County portion of the Salton Sea Air Basin from "serious" nonattainment to "severe-15" and extend the attainment date for the 1997 8-hour ozone NAAQS (0.08 ppm) to June 15, 2019. This voluntary nonattainment reclassification was approved by U.S. EPA on May 5, 2010. The "severe-15" nonattainment designation was subsequently applied to the 2008 8-hour ozone NAAQS (0.075 ppm) in the Coachella Valley, for a new attainment date of July 20, 2027 for that revised standard.

The CAA requires that ozone nonattainment areas designated as "serious" and above use a regional photochemical model to demonstrate attainment. To meet this requirement, the CMAQ modeling system is used in this analysis for the Coachella Valley, as well as the Basin. The complete SCAQMD modeling system and its application is described in Chapter 5 and Appendix V – Modeling and Attainment Demonstration, along with base and future year results, sensitivity analyses and performance evaluations.

Future projected air quality for the Coachella Valley was developed using CMAQ simulations and relative response factors (RRFs, ratios of CMAQ predictions for future year over base year predictions), focusing on the 10 highest ozone episode days for the Coachella Valley stations during the five-month period encompassing the peak of the ozone season (May through September of 2012; 153 days). Of the five-month period in 2012, the 2008 8-hour federal ozone standard (0.075 ppm) was exceeded on 83 days in the Basin and 31 days in the Coachella Valley. The 1997 8-hour federal standard (0.08 ppm) was exceeded on 51 days in the Basin and 7 days in the Coachella Valley during the five-month period. For reference, the new 2015 8-hour federal ozone standard (0.070 ppm) was exceeded on 113 days in the Basin and 50 days in the Coachella Valley from May through September of 2012.

The Coachella Valley is currently a nonattainment area for the 2008 8-hour ozone NAAQS (0.075 ppm). With an attainment due date of July 20, 2027, emission reductions required to meet the standard need to be in place by the end of 2026 and the modeling demonstration must show attainment in 2026. Therefore, air quality in 2026 was simulated using CMAQ to evaluate future attainment in the Coachella Valley. The 2026 baseline future projection design values, with no additional emissions controls beyond rules and regulations already adopted, still exceed the 2008 standard at Palm Springs (0.079 ppm), but not at Indio (0.075 ppm). However, further control measures applied to upwind Basin emission reductions will be in place by 2023, as described in Chapter 4, in order for the Basin to meet the 1997 ozone NAAQS (0.08 ppm). With successful implementation of these additional Basin reductions including benefits from deployment of new cleaner technologies, the Coachella Valley is projected to no longer exceed the 2008 NAAQS as early as 2023, but no later than the 2026 attainment deadline with the Coachella Valley design value predicted to be 0.075 ppm at Palm Springs and 0.073 ppm at Indio in 2023. Thus, attainment of the 2008 8-hour ozone NAAQS in the Coachella Valley is ensured by the anticipated NOx reductions from the Basin's control strategy designed to meet the 1997 ozone standard in the Basin by the 2026 statutory attainment deadline. As can be seen, progress toward ozone NAAQS attainment in the Basin is crucial for timely attainment in the Coachella Valley.

1997 8-Hour Ozone NAAQS Attainment Progress

Attainment of the 1997 8-hour ozone NAAQS (0.08 ppm) was demonstrated in the 2007 AQMP that was submitted to U.S. EPA as a SIP revision on November 28, 2007. U.S.EPA approved the reclassification of the Coachella Valley to "severe-15," as requested in the 2007 AQMP. A subsequent SIP update for the Coachella Valley and the Western Mojave Desert 8-hour ozone nonattainment areas was prepared and submitted to U.S EPA by CARB on November 6, 2014.[11] The 2014 Update provided additional information to support the 2007 Coachella Valley Plan, including updates to the emission inventory, the attainment demonstration, the reasonable further progress demonstration, and the transportation conformity budget; along with an ozone vehicle miles traveled offset demonstration.

While no further submittals for the 1997 8-hour ozone NAAQS are required at this time, the Coachella Valley has seen significant progress toward attainment in recent years. The trends of both 8-hour ozone design values and the number of days exceeding the level of the 1997 8-hour ozone standards show significant improvement. The 8-hour ozone standards are based on the annual fourth highest measured 8-hour average concentration at each station. For NAAQS attainment determinations, the 3-year average of the annual fourth highest 8-hour average concentrations cannot exceed the 0.08 ppm (due to rounding it must be less than 0.085 ppm or 85 ppb). This means that exceeding the 8-hour ozone concentration does not necessarily result in nonattainment status, since the standard could be exceeded three times at any individual station, on average over the 3-year design value period.

Figure 7-13 shows the trend of annual number of days exceeding the 1997 8-hour ozone standard at the highest Coachella Valley station (Palm Springs) for 1990 through 2015. The number of days exceeding the 1997 standard shows a progressive improvement, from 18 days in the 2012 base year to only five days in 2015. Figure 7-14 shows the trend of the annual 8-hour ozone 3-year design values, showing continuing gradual improvement. These historical observations provide evidence that Coachella Valley is still expected to be in attainment of the 1997 ozone NAAQS by the end of 2018, corroborating the ozone SIP attainment modeling demonstration in the 2007 AQMP and the CARB 2014 Update.

[11] December 12, 2014 letter from Jonathan P. Taylor, California Air Resources Board, to Matt Lakin, U.S. EPA Region IX: http://www.arb.ca.gov/planning/sip/planarea/updatessubltr.pdf, with CARB Staff Report, *Proposed Updates to the 1997 8-hour Ozone Standard State Implementation Plans: Coachella Valley and Western Mojave Desert 8-hour Ozone Nonattainment Areas*: http://www.arb.ca.gov/planning/sip/planarea/antaqmp/2014update0922.pdf.

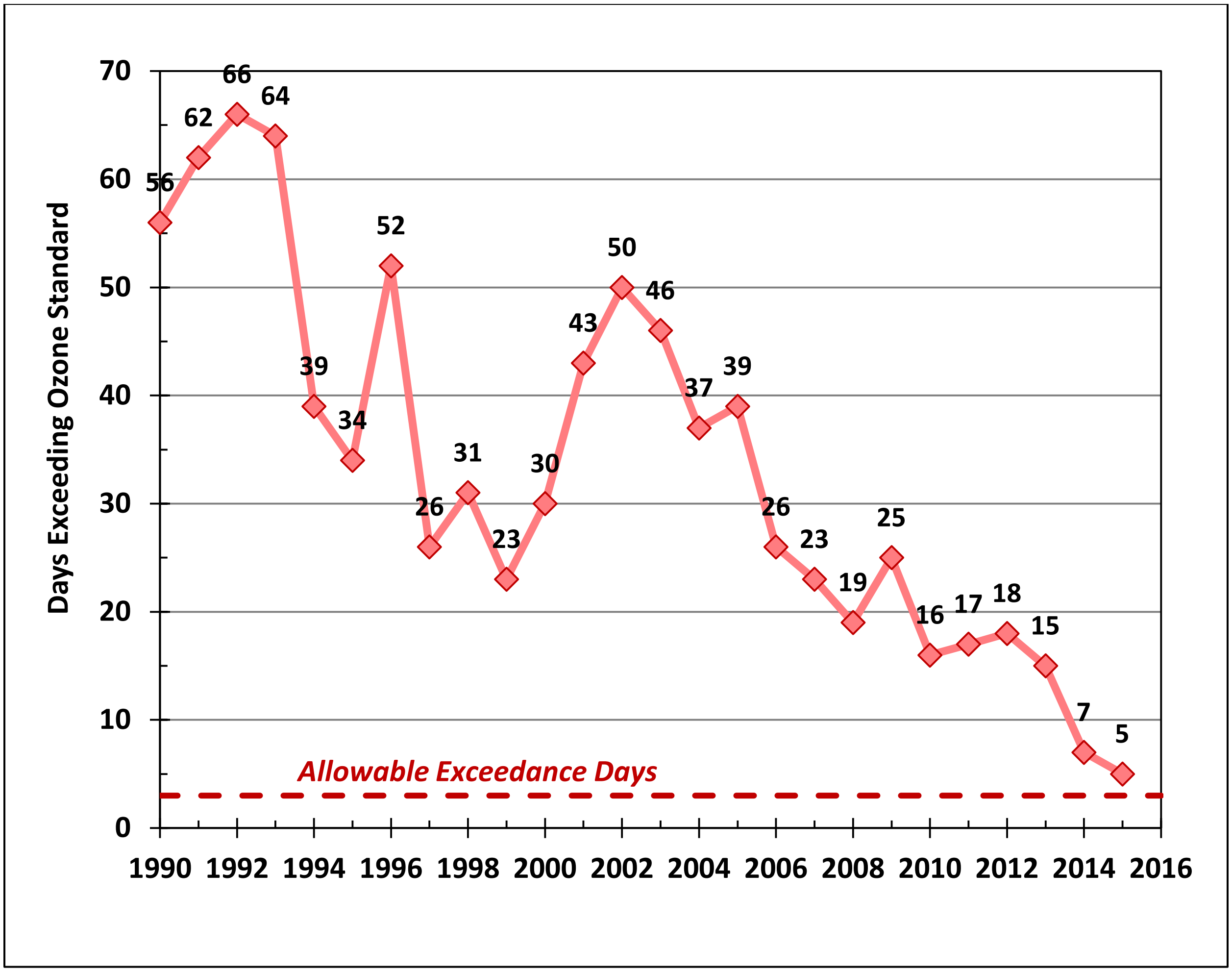

FIGURE 7-13

TREND OF ANNUAL COACHELLA VALLEY NUMBER OF DAYS EXCEEDING THE 1997 8-HOUR OZONE STANDARD, 1990–2015

(THE 8-HOUR OZONE NAAQS IS BASED ON THE FOURTH HIGHEST CONCENTRATION IN EACH YEAR, ALLOWING THREE DAYS TO EXCEED THE STANDARD)

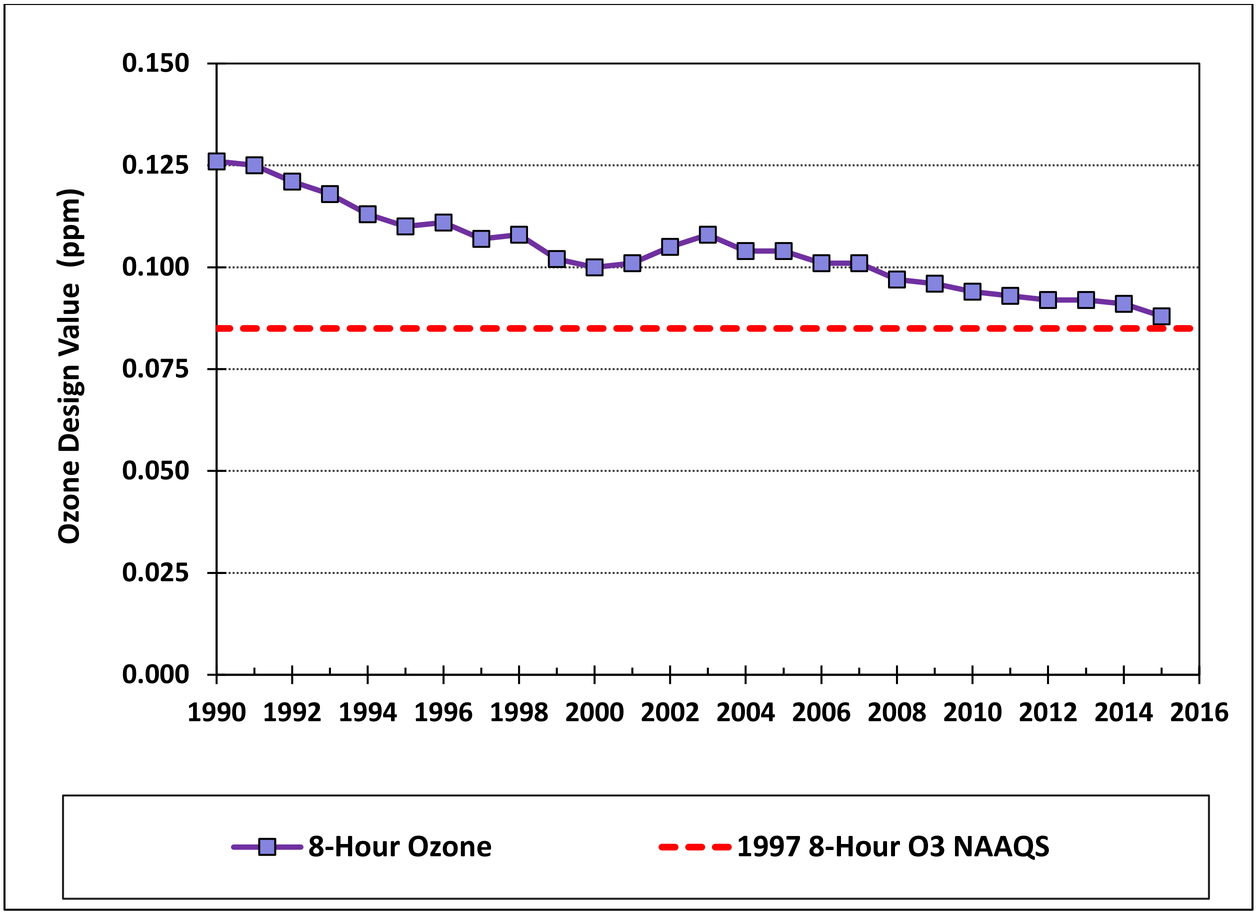

FIGURE 7-14

TREND OF COACHELLA VALLEY 8-HOUR OZONE 3-YEAR DESIGN VALUES, 1990–2015

(UPPER DOTTED LINE IS THE 1997 8-HOUR FEDERAL STANDARD AS REQUIRED TO BE ATTAINED IN 2018)

2015 8-Hour Ozone NAAQS Attainment Projection

Although it is not being addressed as part of this SIP submittal, the AQMP modeling effort provides an initial look at the potential for future attainment of the new 2015 8-hour ozone NAAQS (0.070 ppm). The designations for the new standard are anticipated by October 1, 2017. If the new attainment designation for the Coachella Valley continues to have a "severe-15" classification, the new attainment date will likely be 2032 with all control measures required to be in place for a 2031 model year demonstration date. This date would be five years later (2037) with an "extreme" nonattainment classification, which may be need to be considered due to the reliance of Coachella Valley ozone improvement on the Basin's progress in achieving emission reductions. CMAQ simulations of the future year ozone levels using the baseline (no additional controls) regional emissions indicate that the new standard will not be attained in the Coachella Valley by the "severe-15" attainment deadline of 2031, with a predicted design value over the 2015 ozone NAAQS. This scenario does not include control measures proposed in the 2016 AQMP. The emission reductions that will be in place by 2031 for the Basin to attain the 2008 NAAQS (0.075 ppm) are predicted to bring the Coachella Valley to attainment of the 2015 ozone standard in 2031, with a peak predicted design value of 0.070 ppm. The additional emission reductions that will likely be required to attain the 2015 ozone NAAQS in the Basin by 2037 will also ensure attainment of the new standard in the Coachella Valley. A full attainment and control strategy analysis of the new 0.070 ppm ozone standard for both the Basin and Coachella Valley, including the potential need for reclassification, will be the subject of the next AQMP due in the 2020–2021 time frame. Further details of all the future-year air quality projections for the Basin and the Coachella Valley are presented in Chapter 5 and Appendix V – Modeling and Attainment Demonstrations.

Conclusions

The “severe-15” attainment date for the 2008 8-hour ozone NAAQS of 2027 is the primary focus of the 2016 AQMP modeling demonstration for the Coachella Valley. With the future emission controls in place in the Basin by 2023 in order for the Basin to meet the 1997 8-hour ozone NAAQS, the 2008 ozone NAAQS will be met in the Coachella Valley in 2023. This is three years in advance of the 2026 attainment year for the 2008 NAAQS in the Coachella Valley “severe-15” nonattainment area.

With the “severe-15” ozone nonattainment designation, the Coachella Valley attainment demonstration year for the 1997 8-hour ozone NAAQS is 2018. Based on the improving trends of both the 8-hour ozone design values and the number of exceedance days, it appears that the 1997 ozone standard will be attained in the Coachella Valley by the end of 2018 with no additional emission controls needed beyond already adopted rules and regulations. This evidence supports for the modeling simulations for Coachella Valley in the 2007 AQMP.

The future emission reductions implemented in the Basin will not only ensure timely attainment of the 1997 and 2008 8-hour ozone standards in Coachella Valley, they will also help ensure progress towards the more stringent 2015 8-hour ozone standard. The classification, and thus the attainment deadlines, for this new ozone standard are pending from U.S. EPA. The full strategy for attainment of the 2015 NAAQS in the Coachella Valley will be determined based on the analysis in the next AQMP.