SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Final Coachella Valley Extreme Area Plan for 1997 8-Hour Ozone Standard

~~SEPTEMBER~~ OCTOBER 2020

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EXECUTIVE SUMMARY

The Coachella Valley was classified as a Severe-15 nonattainment area for the 1997 8-hour ozone national ambient air quality standard (standard) in 2010 with an attainment deadline of June 15, 2019. Over the past 16 years, ozone levels in the Coachella Valley have steadily improved because of the implementation of regulations and programs by South Coast Air Quality Management District (South Coast AQMD) and the California Air Resources Board (CARB). Ozone levels in the Coachella Valley are impacted primarily by ozone directly transported from the South Coast Air Basin as well as ozone formed secondarily through photochemical reactions from ozone precursors emitted upwind. As a result, the bulk of the ozone in the Coachella Valley is due to emissions from the South Coast Air Basin, and local sources have limited impact on these levels. However, in 2017 and 2018, unusually high ozone levels were experienced in the Coachella Valley as well as in the South Coast Air Basin, across the State of California and the Western United States primarily due to higher temperatures and stagnant weather conditions. As a result of the high ozone levels in 2017 and 2018, the Coachella Valley failed to meet the standard by the 2019 attainment deadline.

The Clean Air Act (CAA) allows regions that could not attain the standards by the required deadline to request a voluntary bump-up to be reclassified to the next classification of ozone nonattainment. This reclassification provides additional time for the region to attain the standard, but also requires stricter permitting requirements on large stationary sources. In June 2019, South Coast AQMD submitted a formal request to the United States Environmental Protection Agency (U.S. EPA) to reclassify Coachella Valley from a Severe-15 to an Extreme nonattainment area with a new attainment date of June 15, 2024. On July 10, 2019, the U.S. EPA granted the reclassification request, and accordingly, under the new Extreme nonattainment classification, a revision to the State Implementation Plan (SIP) is required to be submitted to the U.S. EPA by February 14, 2021.

The proposed draft Coachella Valley Extreme Area Plan (Plan) has been developed to demonstrate attainment of the 1997 8-hour ozone standard before the required deadline of June 15, 2024 and to address the new federal CAA requirements for extreme nonattainment areas. The Plan includes an updated emissions inventory and modeling analysis, an evaluation of control strategies and emission reductions needed for attainment, reasonable further progress (RFP) to ensure progress in reducing emissions and contingency measures that take effect if RFP and attainment goals are not met. Based on the updated inventory and modeling analysis in this Plan, the Coachella Valley is expected to attain the 1997 8-hour ozone standard by the end of 2023 based on the continued implementation of existing regulations and programs by South Coast AQMD and CARB. These existing regulations provide a significant amount of future reductions in nitrogen oxides (NOx) emissions, which is the pollutant largely responsible for generating ozone. With Coachella Valley

being close to attainment, the emissions reductions associated with these measures are expected to provide the needed reductions well in advance of the June 15, 2024 attainment deadline.

The 2023 projected attainment date is based on the emission reductions from existing regulations and programs. The recently adopted regulations by South Coast AQMD and CARB, described in this Plan, will provide further reductions to ensure that Coachella Valley will attain the standard in or before 2023. The earlier attainment of the standard was also evaluated. However, given the time it takes to adopt and implement new regulations, and given that the 2022 ozone season begins less than 18 months from the date of Plan adoption, no new feasible measures were identified which could be adopted and implemented in time to provide additional reductions to further accelerate the attainment.

In addition to this Plan, the CAA also requires revised thresholds for classifying stationary sources as major sources and for when modifications of these sources trigger federal requirements. Since volatile organic compounds (VOC) and NOx emissions are precursors for ozone, emission thresholds for these two pollutants are affected. Under the Coachella Valley's Extreme nonattainment area classification, the major polluting facility thresholds for VOC and NOx will both be reduced from 25 to 10 tons per year, which will be reflected in amendments to Regulation XIII – New Source Review, Regulation XX – RECLAIM, and Regulation XXX – Title V. In addition, the threshold for a major modification under New Source Review will be reduced from 25 tons per year to 1 pound per day.

The contingency measures for RFP and attainment ~~goals~~ are ~~currently~~ being developed under amendments to Rule 445 (Wood-Burning Devices). These requirements are being addressed through separate parallel rulemaking activities.

1. INTRODUCTION

The Coachella Valley Planning Area (Coachella Valley) is defined as the desert portion of Riverside County in the Salton Sea Air Basin, and is under the jurisdiction of the South Coast Air Quality Management District (South Coast AQMD). The Coachella Valley excludes the tribal lands which are under the jurisdiction of the U.S. EPA. 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 1-1 provides a map of the area and the surrounding topography.

The Coachella Valley is located downwind of the South Coast Air Basin (Basin), which is also under the jurisdiction of the South Coast AQMD. The topography and climate of Southern California coupled with dense population and significant emission sources make the Basin an area with the worst ozone pollution in the nation. Ozone levels in the Coachella Valley are typically less than those in the Basin but are impacted by pollutants directly transported from the Basin, including pollutants such as ozone which is formed in the atmosphere through photochemical reactions of precursor pollutants emitted upwind. Given this transport from the Basin and the atmospheric chemistry of ozone, there is very little impact from local emission sources on ozone levels in Coachella Valley. Therefore, the area must rely on emission controls being implemented upwind in the Basin to demonstrate improved air quality and attainment of the federal ozone standard.

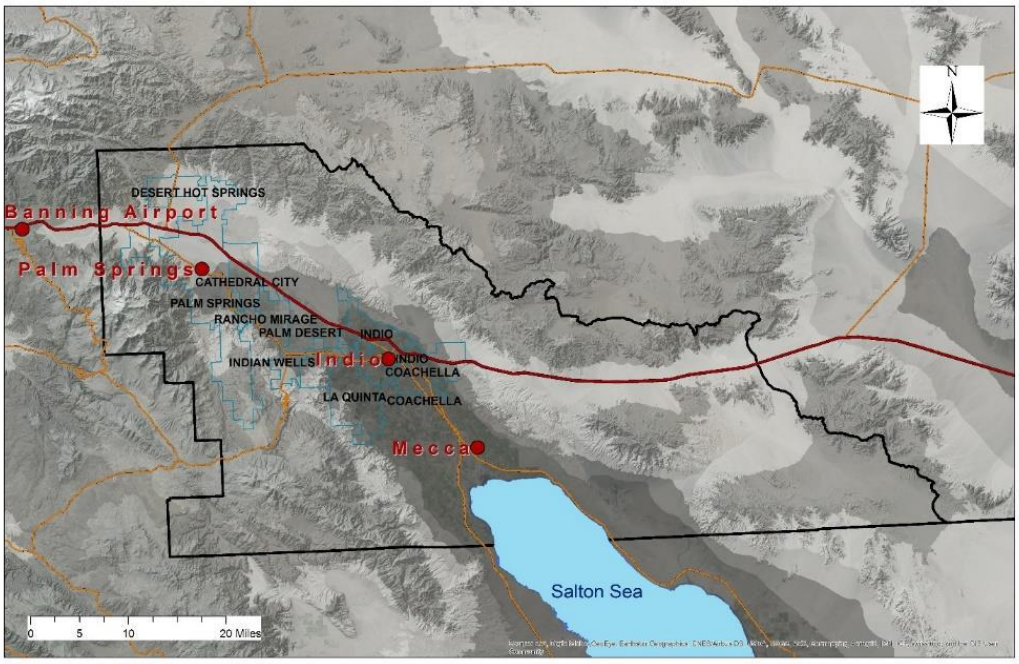

FIGURE 1-1
Location and Topography of the Coachella Valley Planning Area

Attainment Status for Ozone National Ambient Air Quality Standards

In 1979, the U.S. EPA established primary and secondary National Ambient Air Quality Standards (NAAQS or standards) for ozone at 0.12 parts per million (ppm) averaged over a 1-hour period.[1] On July 18, 1997, the U.S. EPA revised the primary and secondary standards for ozone to 0.08 ppm, averaged over an 8-hour period ("1997 8-hour ozone standard"). The 1997 8-hour ozone standard was lowered to 0.075 ppm in 2008, and to 0.070 ppm in 2015. The U.S. EPA classifies areas of ozone nonattainment (i.e., Extreme, Severe, Serious, Moderate, or Marginal) based on the extent to which an area exceeds the standard. The higher the exceedance level at the time of classification, the more time is provided to demonstrate attainment in recognition of the greater challenge involved. However, nonattainment areas with higher classifications are also subject to more stringent requirements.

The Coachella Valley attained the 1-hour ozone standard in 2013 but does not meet the other three 8-hour ozone standards. For the 2015 and 2008 8-hour ozone standards, the Coachella Valley is classified as a Severe and Severe-15 ozone nonattainment area, respectively. For the 1997 8-hour ozone NAAQS, the Coachella Valley was originally classified as a Serious nonattainment area[2] effective June 15, 2004. On November 28, 2007, South Coast AQMD requested that the U.S. EPA reclassify the Coachella Valley nonattainment area from Serious to Severe-15. This reclassification was granted effective June 4, 2010 and established an attainment date of June 15, 2019.[3] Implementation of the South Coast AQMD and the California Air Resources Board (CARB) emissions control measures over the past several decades have resulted in demonstrable progress in reducing ozone levels and significant reductions in ozone precursor emissions such as NOx and VOCs. As a result, air quality in the Coachella Valley has steadily improved, as demonstrated by the ambient air quality data. However, in 2017 and 2018, the State of California and other western states experienced a series of high ozone episodes primarily driven by unexpected changes in meteorology including warm and stagnant weather conditions. Consequently, the ozone levels in 2017 and 2018 were higher than the previous years and the Coachella Valley did not attain the 1997 standard by the June 2019 attainment date (refer to Chapter 2 for more details on air quality trends). As a result, South Coast AQMD requested that the U.S. EPA reclassify the area from Severe-15 to Extreme ozone nonattainment.[4] Effective July 10, 2019, the U.S. EPA approved the voluntary "bump-up" request[5] and the Coachella Valley is currently classified as an Extreme nonattainment area for the 1997 8-hour ozone standard with a new attainment date of June 15, 2024. Table 1-1 summarizes the attainment date and the attainment status for each of the federal ozone standard for Coachella Valley.

[1] U.S. EPA revoked the 1-hour ozone standard entirely in 2005. However, U.S. EPA regulations require the continuation of certain control measures in areas that were formerly in nonattainment for the 1-hour Standard.
[2] 69 FR 23858 (April 30, 2004).
[3] 75 FR 24409 (May 5, 2010).
[4] 42 U.S.C. 7511(b)(3).
[5] 84 FR 32841 (July 10, 2019).

TABLE 1-1
Attainment Status of the Federal Ozone NAAQS of the
Coachella Valley Planning Area

Year	Averaging Time	Standard	Designation	Attainment Date
1979	1-hour	0.12 ppm	Attainment	11/15/2007 (Attained in 2013)
1997	8-hour	0.08 ppm	Nonattainment (Extreme)	6/15/2024
2008	8-hour	0.075 ppm	Nonattainment (Severe-15)	7/20/2027
2015	8-hour	0.070 ppm	Nonattainment (Severe)	8/3/2033

History of Air Quality Planning for the 1997 8-Hour Ozone Standard

The federal Clean Air Act (CAA) requires nonattainment areas to develop and implement an emission reduction strategy that will bring the area into attainment in a timely manner by the required attainment dates. The Air Quality Management Plan (AQMP) is the regional blueprint for achieving air quality standards and designed to meet both federal and state CAA planning requirements. The AQMP is jointly developed by South Coast AQMD, CARB, and Southern California Association of Governments (SCAG), and is submitted as part of the State Implementation Plan (SIP) to the U.S. EPA for evaluation and approval. The following SIP submittals addressed the CAA planning requirements for attaining the 1997 8-hour ozone NAAQS for the Coachella Valley:

1. "Final 2007 Air Quality Management Plan," South Coast Air Quality Management District, June 2007 (2007 AQMP); and "2007 State Strategy for the California State Implementation Plan," September 2007 (2007 State Strategy).

   The 2007 AQMP addressed attainment of the 1997 ozone standard for both the South Coast Air Basin and Coachella Valley including the following components:

   - Emissions estimates, reasonable further progress (RFP) demonstrations, and motor vehicle emission budgets in Chapters 6 and 8;
   - Base and future emission inventories in Chapters 3 and 8 and Appendix III;
   - Modeling for the attainment demonstration in Chapters 5 and 8, and Appendix V;
   - Control strategy in Chapter 4 and Implementation in Chapter 7; and
   - Reasonably Available Control Measures (RACM) discussion in Chapter 6 and Appendix VI.

The 2007 State Strategy, as amended by the 2009 State Strategy Status Report[6] and 2011 State Strategy Progress Report,[7] provided a RACM demonstration for mobile sources (Chapter 3, Chapter 5, Appendix A, etc.). Appendix F of the 2011 State Strategy Progress Report provided revised control measure commitments and a revised rule implementation schedule for the 2007 AQMP.

Based on the 2007 AQMP and the 2007 State Strategy, the Coachella Valley was projected to attain the 1997 8-hour ozone standard (0.08 ppm) by 2018.

2. "Proposed Updates to the 1997 8-Hour Ozone Standard, State Implementation Plans; Coachella Valley and Western Mojave Desert," CARB, October 2014 (2014 SIP Update).

   The 2014 SIP Update, which covered both the Coachella Valley and Western Mojave Desert 1997 8-hour ozone nonattainment areas, reflected the new U.S. EPA guidance[8] for the RFP demonstration and updated emission inventories. The 2014 SIP Update included updated emissions inventories, RFP demonstration, vehicle miles travelled (VMT) offset demonstration, motor vehicle emissions budgets and revision to the attainment targets for NOx and VOC emissions. The 2014 Update demonstrated that the adopted regulations would provide the emission reductions necessary to achieve attainment of the 0.08 ppm 8-hour ozone standard in the Coachella Valley by the attainment date and meet RFP requirements in the milestone years.

While the 2007 AQMP and the 2014 SIP Update addressed and satisfied the CAA planning requirements for the Coachella Valley, the 2012 AQMP provided the projections of future ozone levels based on the updated emissions inventories and modeling efforts for informational purposes.

The 2016 AQMP outlined the strategy to attain the 2008 8-hour ozone standard (0.075 ppm) for the Coachella Valley Planning Area and discussed the attainment status towards the 1997 8-hour ozone standard (0.08 ppm). The 2016 AQMP overall ozone control strategy included stationary and mobile source NOx emissions reduction strategies by South Coast AQMD and CARB, supplemented by additional strategic and concurrent VOC emission reductions, by focusing on maximizing the use of zero and near-zero emission control technologies. A combination of strong

[6] "Status Report on the State Strategy for California's 2007 State Implementation Plan (SIP) and Proposed Revision to the SIP Reflecting Implementation of the 2007 State Strategy," CARB, Release Date: March 24, 2009 (2009 State Strategy Status Report).
[7] "Progress Report on Implementation of PM2.5 State Implementation Plans (SIP) for the South Coast and San Joaquin Valley Air Basins and Proposed SIP Revisions," CARB, Release Date: March 29, 2011 (2011 State Strategy Progress Report).
[8] Since the submission of the 2007 AQMP, U.S. EPA determined it was no longer appropriate to include emissions from sources outside the nonattainment area in the RFP demonstration and revised its RFP policy to limit emission reductions to sources within the nonattainment area.

regulatory actions and effective incentive programs was deemed the most effective means of achieving the emission reductions needed for attaining the ozone standards.

The attainment demonstration for the 8-hour ozone standard is based on the 99th percentile highest value, which is the fourth highest value each year. The 2016 AQMP evaluated the number of days exceeding the 1997 standard at the monitoring station with the highest ozone in the Coachella Valley from 1990 through 2015. The ozone levels showed progressive improvement, from 18 exceedance days in 2012 base year to only 6 days in 2015. As such, it was expected that Coachella Valley would attain the 1997 ozone standard by the end of 2018, corroborating the ozone SIP attainment demonstration in the 2007 AQMP and the CARB 2014 SIP Update.

However, as mentioned in the previous section, because of unexpectedly high ozone levels in 2017 and 2018, Coachella Valley did not meet the 1997 8-hour ozone standard by the Severe area attainment date of June 15, 2019. The new Extreme nonattainment area status, approved by the U.S. EPA, provides more time to attain the standard by extending the attainment date to June 2024.

Purpose of this Plan

On July 10, 2019, the U.S. EPA granted a voluntary reclassification of the Coachella Valley Planning Area from Severe-15 to Extreme nonattainment for the 1997 8-hour ozone NAAQS. This reclassification triggered the need to revise the SIP to address new requirements associated with the reclassification. The Coachella Valley Extreme Area Plan is developed to outline the strategy to bring the area into attainment as expeditiously as practicable and by the required attainment date of June 2024. Chapter 2 of this document presents the ozone air quality trends. Chapter 3 describes the base-year emissions inventory and future projected emissions. Chapter 4 describes the overall control strategy based on the continued implementation of regional and statewide control measures for attaining the 1997 8-hour ozone standard in the Coachella Valley. Chapter 5 presents the attainment demonstration and future air quality. Other federal CAA requirements are discussed in Chapter 6.

2. AIR QUALITY TRENDS

The South Coast AQMD currently monitors Coachella Valley ozone concentrations at Indio and Palm Springs. 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 South Coast Air 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, particulate matter with a diameter less than 10 micron (PM10), particulate matter with a diameter less than 2.5 micron (PM2.5), sulfates (from PM10), and several meteorological parameters. The Palm Springs station also measures carbon monoxide (CO), and nitrogen dioxide (NO2). This chapter summarizes recent and historic ozone air pollution data collected in the Coachella Valley.

Factors that Influence Ozone Concentrations

Ozone (O3) is not emitted directly into the atmosphere; near-surface ozone, in contrast to stratospheric ozone, is formed by the reaction of volatile organic compounds (VOCs) with oxides of nitrogen (NOx) in the presence of sunlight. Figure 2-1 illustrates the processes influencing ozone concentrations in the Coachella Valley. NOx is generated from combustion processes whereas VOCs are emitted from a wide variety of sources such as consumer products, mobile sources, and vegetation. Wildfires generate both NOx and VOCs. The chemical reactions that form ozone are highly complex and depend not only on NOx and VOC levels, but also on the ratio of VOC to NOx concentrations, temperature, the amount of sunlight, and other meteorological conditions. NOx emissions can even reduce ozone concentrations in the immediate vicinity of an emission source, but will contribute to more ozone formation downwind. In our region, NOx emissions typically drive ozone levels, and NOx control measures are the most effective mechanisms for controlling ozone to meet federal standards.

Atmospheric ozone in the Coachella Valley is both directly transported from the Basin and formed photochemically from precursors emitted upwind and within the Coachella Valley. The precursors are emitted in the 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 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 – wind speed and wind direction further influence ozone concentrations throughout the Coachella Valley.

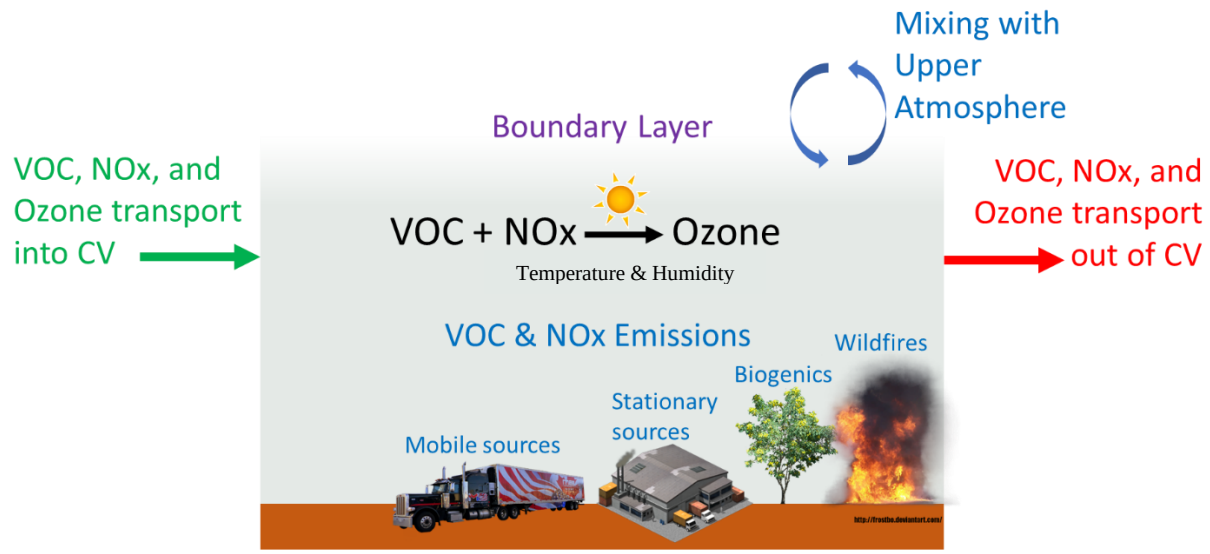

FIGURE 2-1
Schematic of Processes Influencing Ozone Concentrations in the Coachella Valley

Ozone concentrations are also heavily dependent on meteorological conditions. 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. Ozone concentrations are a strong function of season for several reasons. The rate of reactions that produce ozone in the atmosphere proceeds faster at higher temperatures. In addition, elevated temperatures lead to increased ozone precursor concentrations by hastening the evaporation of VOCs into the air. Ozone concentrations are also dependent on sunlight intensity, which is stronger during the summer months. The stability of the atmosphere also influences ozone concentrations. Strong inversions inhibit mixing with the upper atmosphere, leading to ozone accumulation near the surface.

Ozone Monitoring Data

Several metrics are used to quantify progress towards attaining the ozone standards in the Coachella Valley. The number of days exceeding the 1997 8-hour ozone standard anywhere in the Coachella Valley is a basic, yet useful tool for assessing progress. This metric has decreased markedly over the past few decades. However, year-to-year variabilities are evident throughout the historical record. Figure 2-2 shows the trend in Coachella Valley ozone exceedance days for the 1979 1-hour standard and the 1997 8-hour standard. Note that the Coachella Valley attained the 1-hour standard in 2013.

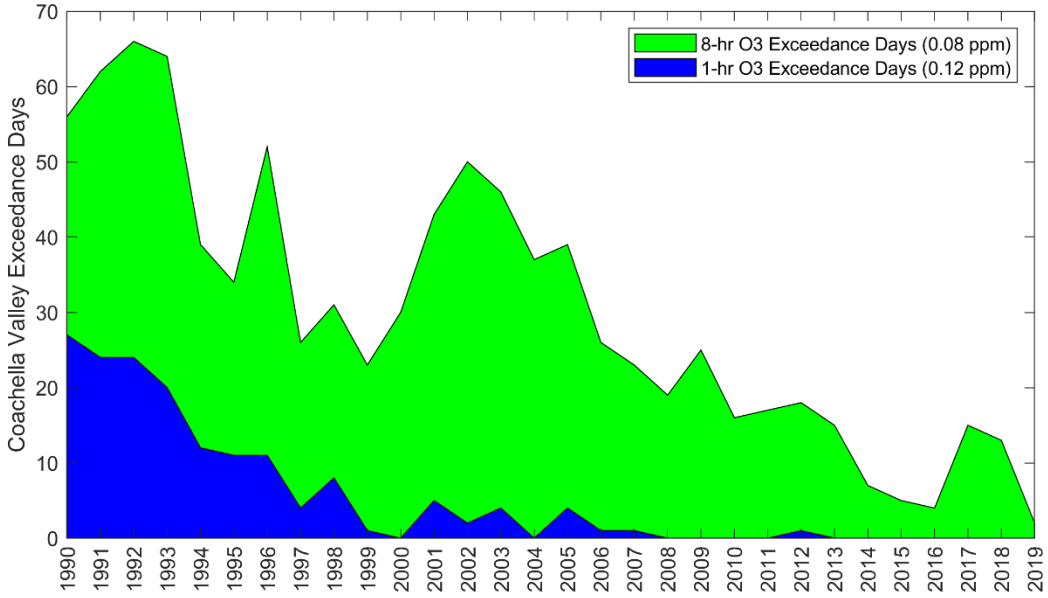

FIGURE 2-2
Trends in Ozone Exceedance Days in the Coachella Valley, 1990–2018

The Coachella Valley exceeded the 1997 standard on four days in 2016, 15 days in 2017, 13 days in 2018, and two days in 2019. This increase in exceedance days in 2017 and 2018 was not unique to the area. Similar increases in ozone concentrations occurred in the South Coast Air Basin and other areas in California and the Western United States. Figure 2-3 shows the trend in ozone exceedance days in both the South Coast Air Basin and the Coachella Valley.

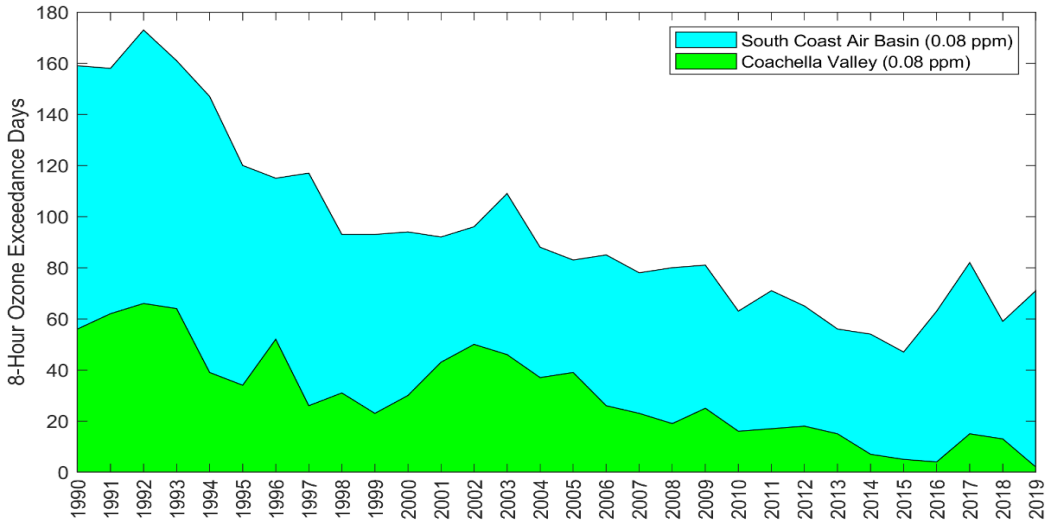

FIGURE 2-3
Trends in Ozone Exceedance Days in the Coachella Valley and the South Coast Air Basin, 1990–2019

The similarity in the trends in ozone exceedances seen in Figure 2-3 is expected due to typical transport patterns of ozone precursors and ozone from the South Coast Air Basin to the Coachella Valley. In addition, while there are differences in meteorological conditions between the two areas, regional meteorological trends influence conditions in both areas.

The CAA requires attainment of the ozone standard at the most polluted ozone monitoring station, which for the case of the Coachella Valley, is in Palm Springs. The 8-hour ozone design value is based on the 99th percentile highest value (4th highest daily maximum of 8-hour-average concentrations) in a year, averaged over a three-year period. Therefore the 4th highest 8-hour daily max value is a useful metric to assess yearly progress towards attainment of the standard. The 4th highest 8-hour daily max value in 2019 was 0.084 ppm, which is the lowest concentration on record in the Coachella Valley. Unfortunately, the Coachella Valley did not attain the 8-hour standard by 2019 due to elevated 4th highest 8-hour daily max values in 2017 and 2018.

Factors Leading to High Ozone Levels in 2017 and 2018

Elevated ozone concentrations recorded in 2017 and 2018 in the Coachella Valley and the South Coast Air Basin were also seen throughout California (Figure 2-4) and the Western United States (Figure 2-5).

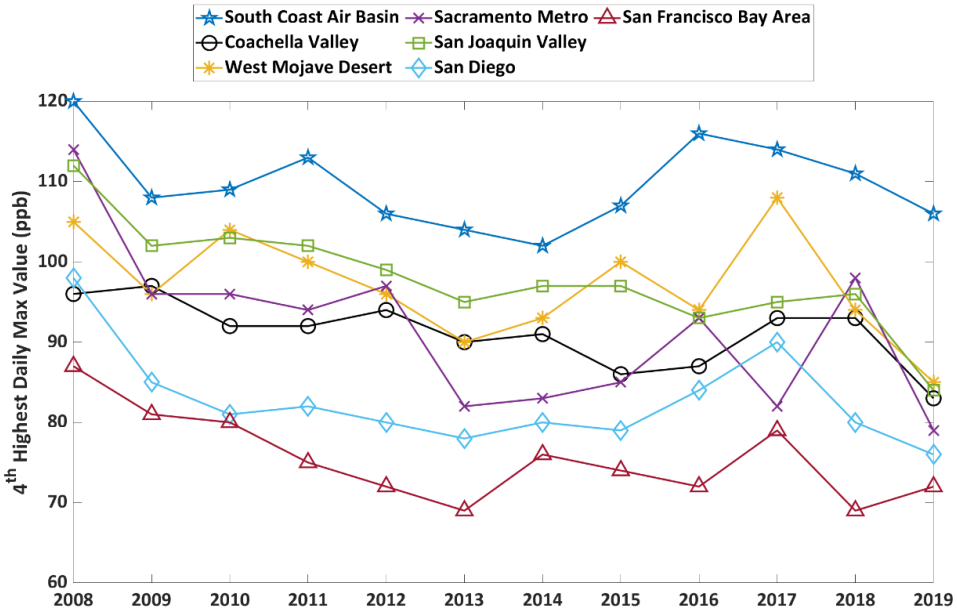

FIGURE 2-4
Fourth Highest Daily Maximum Ozone Values in Several Nearby California Air Basins from 2008 to 2019

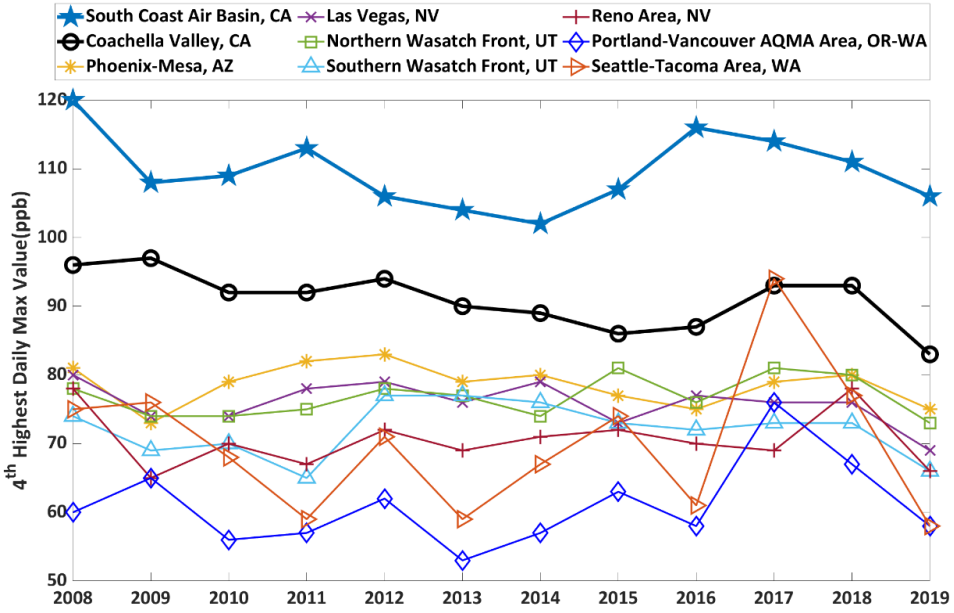

FIGURE 2-5
Fourth Highest 8-Hour Daily Maximum Ozone Values at the Most Polluted Monitoring Site in Several Designated Areas in Western States from 2008 to 2019

South Coast AQMD staff and other researchers in the air quality and meteorology communities are still investigating the reasons for the increase in ozone concentrations starting in 2017 throughout the Western United States. However, the fact that these increases were seen over wide areas can help explain the elevated ozone concentrations which was likely caused by adverse meteorology and changes in emissions such as biogenic VOC emissions in response to the warmer temperatures. The year-to-year variability in ozone is not uncommon in the historical record and a temporary increase in ozone is not necessarily reflective of a long-term trend.

Wildfires

The U.S. EPA's Exceptional Events Rule allows air authorities to exclude monitoring data in calculating design values if the data was influenced by an event that is not reasonably controllable nor preventable. There must also be a clear causal relationship between the exceedance and the event. For example, under the Exceptional Events Rule, the U.S. EPA may approve the exclusion of ozone exceedances caused by wildfires in calculating attainment status upon successful demonstration by states or local air districts. While there are some exceedances that may be smoke-influenced due to the presence of satellite-detected smoke and/or an active smoke advisory, even if the U.S. EPA approved all of these as exceptional events, the Coachella Valley would still would not be in attainment of the 1997 8-hour ozone standard.

While local wildfires cannot explain all exceedances in the 2017–2019 period in the Coachella Valley, it is possible that wildfire emissions from distant fires could have influenced ozone precursor or ozone concentrations throughout the West. 2017 and 2018 were particularly active wildfire seasons in California (Figure 2-6), with total acreage burned surpassing all years since 2008.

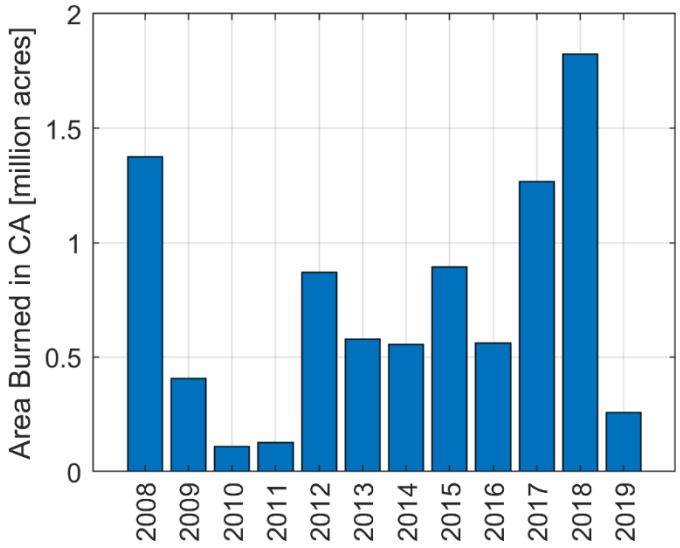

FIGURE 2-6

Total Acres Burned by Year within California. Data from the National Interagency Fire Center

Biogenic Emissions of Ozone Precursors

Biogenic VOC emissions (those deriving from vegetation) may also exhibit large year-to-year variations. Vegetation is a large source of VOCs, especially during summer months. Vegetative growth is highly dependent on rainfall during the growing season, which exhibits significant year-to-year variations throughout California.

Anthropogenic Emissions of Ozone Precursors

While it is difficult to measure anthropogenic emissions (emissions from human activity) of NOx and VOCs directly, emission inventory projections indicate that emissions from anthropogenic sources in the South Coast Air Basin have declined and will continue to decline due to the continued implementation of air quality regulations and programs (Figure 2-7). Emissions in the South Coast Air Basin are the primary contributor to ozone concentrations in the Coachella Valley.

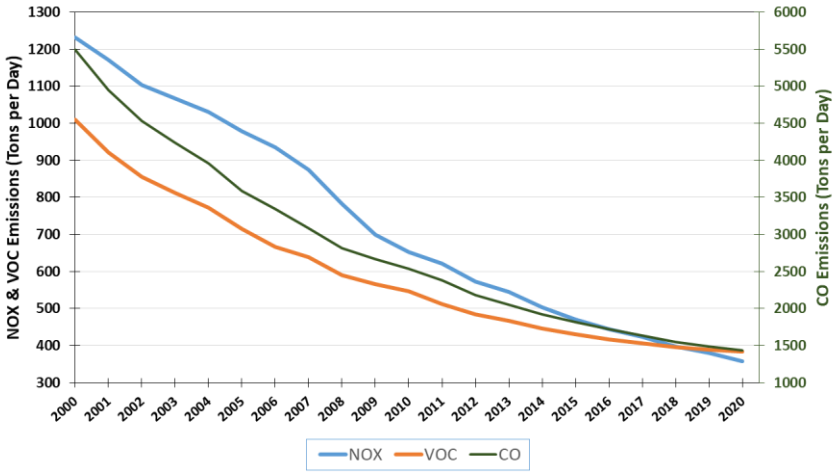

FIGURE 2-7

Emission Inventory Projections in the South Coast Air Basin

Nitrogen dioxide (NO2) concentration is measured hourly throughout the South Coast AQMD boundaries and can be used as a surrogate for NOx emissions. An analysis of monitoring data between 1990 and 2019 indicate that NO2 concentration have been reduced by approximately 65 percent and have continued to decline year-to-year since 1999, including in 2017 and 2018 (Figure 2-8).

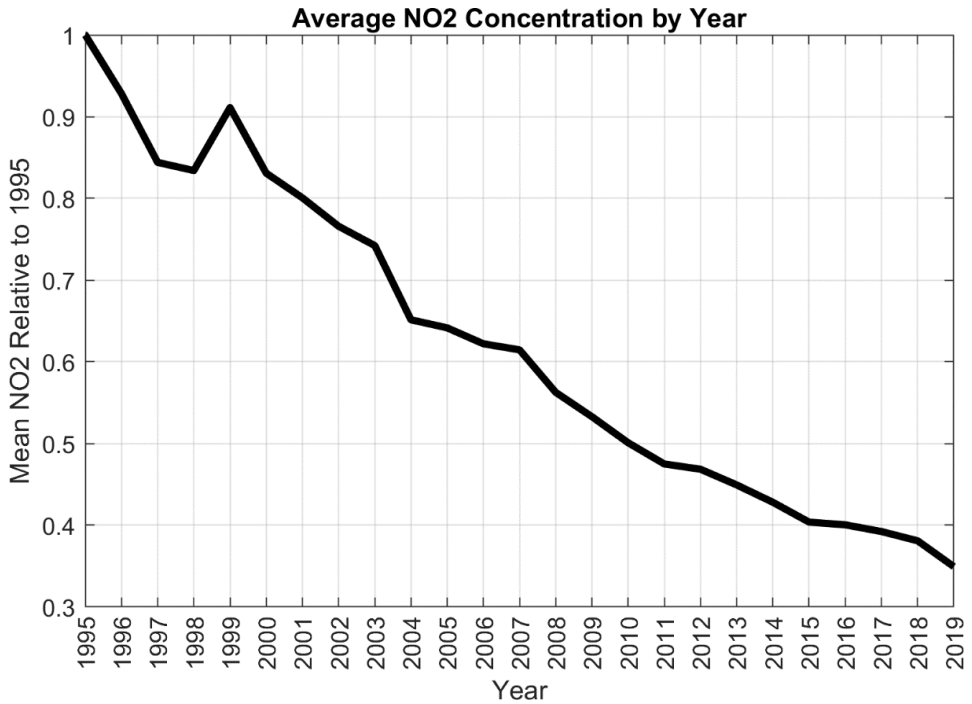

FIGURE 2-8

NO2 Concentrations at Monitors in the South Coast Air Basin and the Coachella Valley. Only Monitors with Data in At Least 75 Percent of the Years are Included in This Analysis

Meteorology

Meteorology is also an important factor governing ozone concentrations. Year-to-year changes in meteorology can alter transport patterns, leading to changes in precursors and upwind ozone entering the Coachella Valley. Elevated temperatures and reduced atmospheric mixing can also contribute to additional ozone formation. In addition, the North American Monsoon, which can bring an increase in humidity and afternoon thunderstorms into the Coachella Valley between July and September can also affect ozone concentrations.

Ozone Attainment Status

Trends in the 8-hour ozone design value and the 1-hour ozone design value are plotted in Figure 2-9.

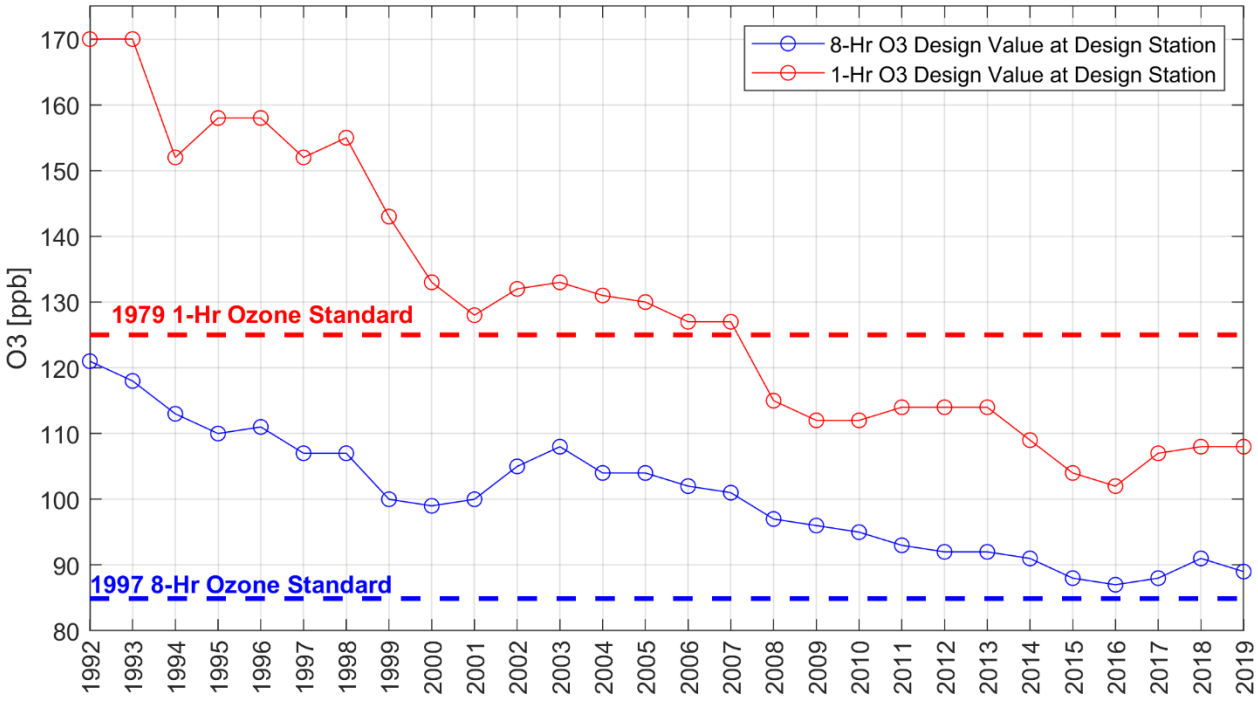

FIGURE 2-9

Coachella Valley 3-Year Design Value Trends of Ozone, 1992–2019
(The Year Plotted is the End Year of the 3-Year Design Value)

While the Coachella Valley attains the former 1-hour federal ozone standard, the area exceeds the 8-hour NAAQS. In 2016, the 3-year design value (2014–2016 average) for the Coachella Valley was 0.087 ppm. The 2017 and 2018 design value increased to 0.088 ppm and 0.091 ppm, respectively. The 2019 design value then decreased to 0.089 ppm due to a relatively clean 2019 ozone season, but it still exceeds the 1997 8-hour standard. In each of these cases, the Palm Springs monitoring station had the highest design value, and therefore the Palm Springs measurement data reflects the design location for the Coachella Valley. The standard is met if the design value is less than or equal to 0.084 ppm, due to rounding conventions associated with the 0.08 ppm standard.

In summary, the Coachella Valley has experienced a multi-decadal trend of steady reduction in ozone concentration over the years and is very close to achieving the 1997 8-hour ozone standard. However, additional emission reductions are needed to attain this standard.

3. BASE-YEAR AND FUTURE EMISSIONS

Introduction

This chapter summarizes ozone precursor emissions (VOC and NOx) in the Coachella Valley for the 2018 baseline year and the 2023 attainment year for the 1997 8-hour ozone NAAQS. Baseline emissions data presented in this chapter are based on seasonally adjusted summer planning inventory emissions which are developed to capture the emission levels during the high ozone season and are used to perform the ozone modeling attainment demonstration and to report emission reduction progress as required by the federal CAA requirements.

Emissions Inventory Methodology

Emissions inventories can be grouped into four source categories: point, area, on-road and off-road mobile sources. Emissions from each category are estimated using source-specific methodologies described briefly in the next sections. The methodologies used in this Plan are generally consistent with those employed in the 2016 AQMP. While more detailed information regarding the emissions inventory development for the base and future years is available in Chapter 3 and Appendix III of the 2016 AQMP,[9] a brief description for the four groups of emissions is provided below. The two main changes to the emissions inventory introduced in this plan compared to the 2016 AQMP are: 1) point source emissions for the baseline year 2018 are based on actual reported emissions obtained from the South Coast AQMD's Annual Emissions Reporting (AER) system, and 2) on-road emissions are estimated using EMFAC 2017, compared to the previous version, EMFAC 2014, used in the 2016 AQMP.

Point Sources

Point sources generally correspond to permitted facilities with one or more emission sources at an identified location (e.g., power plants, refineries). The larger point source facilities with annual emissions of 4 tons per year or more of either Volatile Organic Compounds (VOC), Nitrogen Oxide (NOx), Sulfur Oxide (SOx), or total Particulate Matter (PM), or annual emissions of over 100 tons of Carbon Monoxide (CO) are required to report their criteria pollutant emissions and selected air toxics, pursuant to Rule 301, through the AER Program. These facilities need to report emissions on an annual basis and are subject to emission audits. This Plan uses the 2018 annual reported emissions for the 2018 baseline, as opposed to the 2018 projected emissions from 2012 baseline that were used in the 2016 AQMP.

[9] South Coast AQMD (2017), 2016 Air Quality Management Plan, Appendix III, Base and future year emission inventory. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/appendix-iii.pdf?sfvrsn=6.

Area Sources

Area sources consist of many small emission sources (e.g., residential water heaters, architectural coatings, consumer products, and permitted sources that are smaller than the above thresholds) which are distributed across the region and are not required to individually report their annual emissions. There are about 400 area source categories for which emission estimates are jointly developed by CARB and the South Coast AQMD. The emissions from these sources are estimated using specific activity information and emission factors. Activity data are usually obtained from survey data or scientific reports, e.g., Energy Information Administration (EIA) reports for fuel consumption other than natural gas fuel, Southern California Gas Company for natural gas consumption, paint supplier data under Rule 314 and District databases. Emission factors are based on rule compliance factors, source tests, manufacturer's product or technical specification data, default factors (mostly from AP-42, U.S. EPA's published emission factor compilation), or weighted emission factors derived from the point source facilities' annual emissions reports. The overall methodology for area sources is described in Appendix III of the 2016 AQMP.[10] The area source emissions in this Plan are based on the emissions projections included in the 2016 AQMP for 2018 and 2023, using growth and control factors derived from regulatory and socio-economic data.

On-Road Sources

On-road sources include motor vehicles such as passenger cars, buses, and trucks that regularly travel on roads. Emissions from on-road sources are calculated using travel activity and vehicle-specific emission factors that depend on temperature and relative humidity. This Plan uses the same travel activity data from SCAG's 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) that was used in the 2016 AQMP. The 2016 RTP is the latest approved available platform providing traffic activity data during the development of this Plan. The on-road emission factors are updated based on CARB's EMFAC 2017 model, which is an update to the EMFAC 2014 model was used in the 2016 AQMP. In addition, the Emission Spatial and Temporal Allocator (ESTA, https://github.com/mmb-carb/ESTA) tool developed by CARB is also used to distribute the emissions spatially and temporally to generate inputs to the air quality model used in the attainment demonstration air quality simulations.

CARB's EMFAC 2017 model has undergone revisions from the previous version (EMFAC 2014), which include changes in emission rates for light-, medium- and heavy-duty vehicles. More

[10] South Coast AQMD (2017), 2016 Air Quality Management Plan, Appendix III, Base and future year emission inventory. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/appendix-iii.pdf?sfvrsn=6.

detailed information on the changes incorporated in EMFAC 2017 can be found in EMFAC 2017 Technical Documentation.[11]

Figure 3-1 compares the Coachella Valley on-road emissions estimated using EMFAC2014 in the 2016 AQMP and EMFAC 2017 used in the in this Plan, for milestone years of 2018 and 2023. In general, EMFAC 2017 tends to estimate lower VOC emissions and higher NOx emissions, compared to EMFAC 2014. The difference is specifically pronounced in future NOx emissions, in which EMFAC 2017 yields larger amount of NOx than EMFAC 2014, which was in part driven by revised higher NOx emissions rates from Heavy Duty vehicle model years of 2010 and newer.

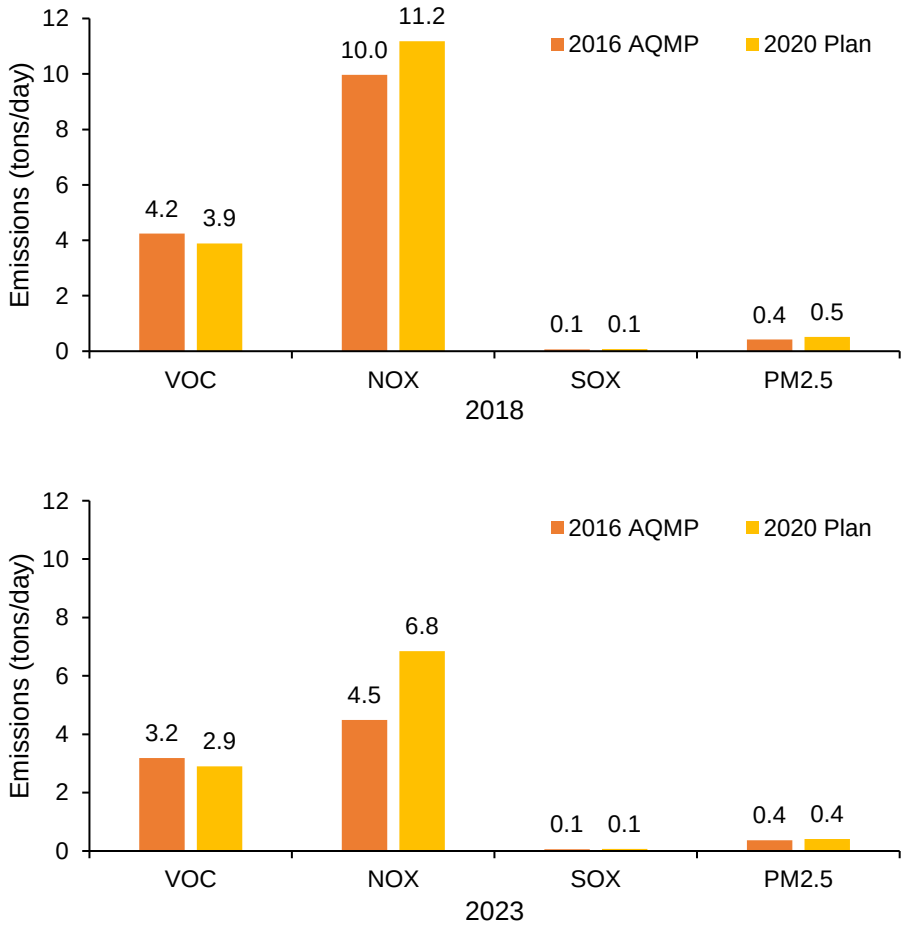

FIGURE 3-1
Comparison of Coachella Valley On-Road Emissions Estimated using EMFAC 2014 in the 2016 AQMP and EMFAC 2017 in the Current Plan. VOC and NOx Emissions Represent Summer Planning Inventory

[11] https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac.

Off-Road Sources

The off-road mobile category includes construction and mining equipment, industrial and commercial equipment, lawn and garden equipment, agricultural equipment, ocean-going vessels, commercial harbor craft, locomotives, aircraft, cargo handling equipment, pleasure craft, and recreational vehicles. The off-road mobile emissions included in the 2016 AQMP were used in this plan except for ocean going vessels for which emissions were updated in the 2018 Updates to the California State Implementation Plan.[12] There are no ocean-going vessel emissions in the Coachella Valley, so this update is irrelevant for the emissions inventory in this plan. However, ocean-going vessel emissions affect upwind air pollutant concentrations, and hence, the updated emissions are included in modeling the attainment demonstration, which takes into consideration the upwind emissions that impact the air quality in Coachella Valley. The modeling approach for the attainment demonstration is presented in Chapter 5. Both 2018 and 2023 emissions were projected from the 2012 baseline emissions specified in the 2016 AQMP.

Base Year (2018) Emission Inventory

The summer planning emissions inventory for 2018 broken down by major source category is provided in Table 3-1. A more detailed breakdown of emissions is included in Appendix I. Figure 3-2 characterizes the relative contributions by stationary and mobile source categories. On-road and off-road mobile sources are major contributors for NOx and VOC in the Coachella Valley. Overall, total mobile source emissions account for 50 percent of the VOC and 91 percent of the NOx emissions for these two ozone-forming pollutants. The on-road mobile source category alone contributes over 27 percent of the VOC and 61 percent of the NOx emissions. Area sources contribute to 49 percent of the VOC emissions, with consumer products and cleaning and surface coatings being the major sources.

Figure 3-3 shows the fraction of the 2018 inventory by responsible agency for VOC and NOx. U.S. EPA and CARB have primary authority to regulate emissions from mobile sources. The U.S. EPA's authority primarily applies to aircraft, locomotives, ocean going vessels, and some categories of off-road mobile equipment. CARB has authority over the remainder of the mobile sources, and consumer products. South Coast AQMD has authority over most area sources and all point sources. As can be seen in Figure 3-3, 92 percent of the NOx emissions in the Coachella Valley are from sources that fall under the primary jurisdiction of CARB and the U.S. EPA. The largest share of VOC emissions is under CARB jurisdiction, 66 percent, with a small contribution of VOC from sources under the U.S. EPA's jurisdiction. This illustrates that continued actions at the local, State, and federal level are all needed to ensure the region attains the federal ambient air quality standards.

[12] California Air Resource Board (CARB) 2018. 2018 Updates to the California State Implementation Plan. Available at: https://ww3.arb.ca.gov/planning/sip/2018sipupdate/2018update.pdf.

TABLE 3-1

Summary of VOC and NOx Emissions by Major Source Category: 2018 Base Year Summer Planning (tpd*)

SOURCE CATEGORY	Summer Planning	
	VOC	NOx
STATIONARY SOURCES		
Fuel Combustion	0.31	1.33
Waste Disposal	0.97	0.00
Cleaning and Surface Coatings	1.82	0.00
Petroleum Production and Marketing	0.34	0.00
Industrial Processes	0.21	0.00
Solvent Evaporation:		
Consumer Products	2.58	0.00
Architectural Coatings	0.36	0.00
Others	0.37	0.00
Misc. Processes	0.22	0.26
Total Stationary Sources	**7.18**	**1.59**
MOBILE SOURCES		
On-Road Vehicles	3.89	11.18
Off-Road Vehicles	3.30	5.56
Total Mobile Sources	**7.19**	**16.74**
TOTAL	**14.37**	**18.33**

* Values may not sum due to rounding

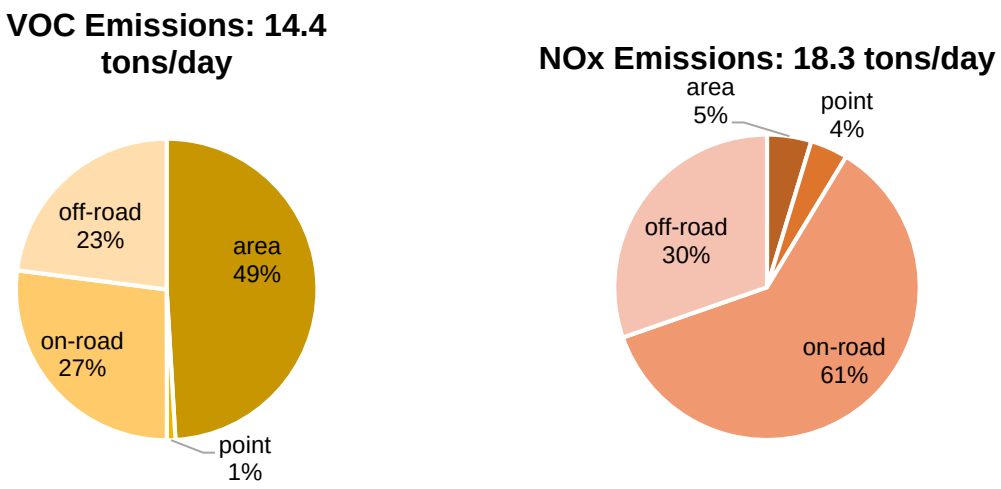

FIGURE 3-2
Relative Contribution by Source Category to 2018 Planning Emission Inventory
(Values are Rounded to Nearest Integer and May Not Sum due to Rounding)

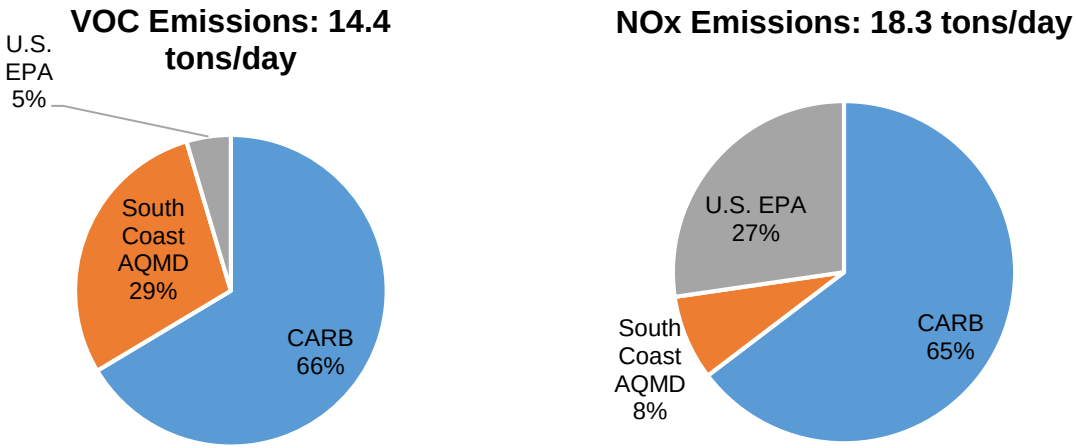

FIGURE 3-3
2018 Planning Emission Inventory Agency Primary Responsibility
(Values are Rounded to Nearest Integer and May Not Sum due to Rounding)

Future Emissions

The 2023 future emission inventory in this Plan were projected from the 2012 base year using growth and control factors developed for the 2016 AQMP for point, area and off-road sources. As described in the previous section, on-road mobile sources are projected using projected vehicle activity from SCAG's 2016 RTP/SCS for 2023 and emission factors projected for 2023 by the EMFAC 2017 model.

Table 3-2 presents the summer planning inventory of ozone precursors in 2023, the new attainment year of the 1997 8-hour ozone NAAQS for the Coachella Valley. A more detailed breakdown of emissions by major source categories is included in Appendix I. NOx emissions continue to decrease due to existing regulations for mobile and stationary sources. However, the total VOC emissions in Coachella Valley are expected to slightly increase due to increase in population and economic and industrial activities. Emissions from on-road and off-road sources are projected to decline for both NOx and VOC from 2018 to 2023 based on the continued implementation of existing regulations with future effective dates or as new, cleaner vehicles and equipment replaces older, higher-emitting sources.

Figure 3-4 illustrates the relative contribution to the 2023 inventory by source category. A comparison of Figures 3-2 and 3-4 indicates that the on-road mobile category continues to be a major contributor to NOx emissions. However, on-road mobile sources contribute less to the overall VOC and NOx emissions in 2023, indicating the effectiveness of current on-road mobile sources regulations to reduce emissions in the Coachella Valley. Figure 3-5 shows the comparison of the summer planning inventory in 2018 and 2023 by the four major source categories. The actual expected reductions in NOx in mobile sources is 4.3 tpd, which represents a 39 percent decrease. On-road mobile sources account for 20 percent of total VOC emissions compared to 27 percent in 2018, and 55 percent of total NOx emissions compared to 61 percent in 2018. See Figures 3-6 through 3-9 for the highest-ranking source categories for 2018 and 2023 in Coachella Valley.

TABLE 3-2

Summary of Emissions of VOC and NOx by Major Source Category: 2023 Baseline Summer Planning (tpd*)

SOURCE CATEGORY	SUMMER PLANNING	
	VOC	NOx
STATIONARY SOURCES		
Fuel Combustion	0.35	0.89
Waste Disposal	1.23	0.03
Cleaning and Surface Coatings	2.27	0.00
Petroleum Production and Marketing	0.42	0.00
Industrial Processes	0.25	0.01
Solvent Evaporation:		
Consumer Products	2.80	0.00
Architectural Coatings	0.40	0.00
Others	0.37	0.00
Misc. Processes	0.23	0.25
Total Stationary Sources	**8.32**	**1.18**
MOBILE SOURCES		
On-Road Vehicles	2.90	6.85
Off-Road Vehicles	3.22	4.30
Total Mobile Sources	**6.12**	**11.15**
TOTAL	**14.44**	**12.33**

* Values are rounded to nearest integer and may not sum due to rounding

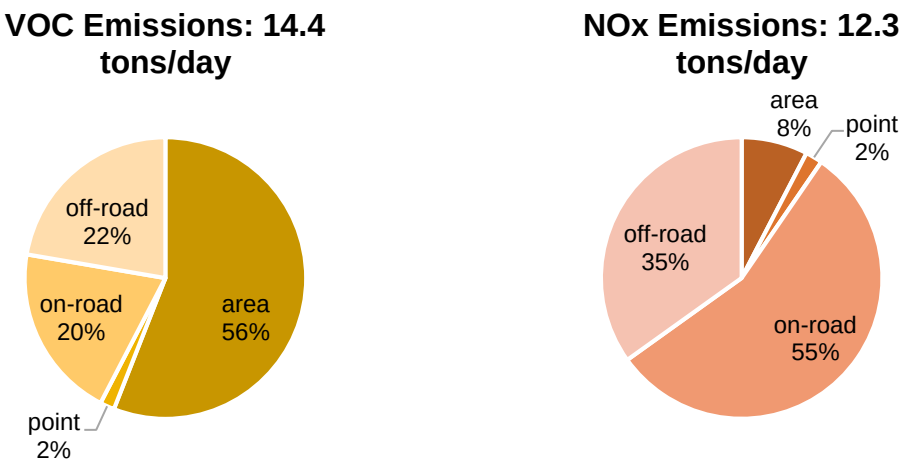

FIGURE 3-4
Relative Contribution by Source Category to 2023 Planning Emission Inventory
(Values are Rounded to Nearest Integer and May Not Sum due to Rounding)

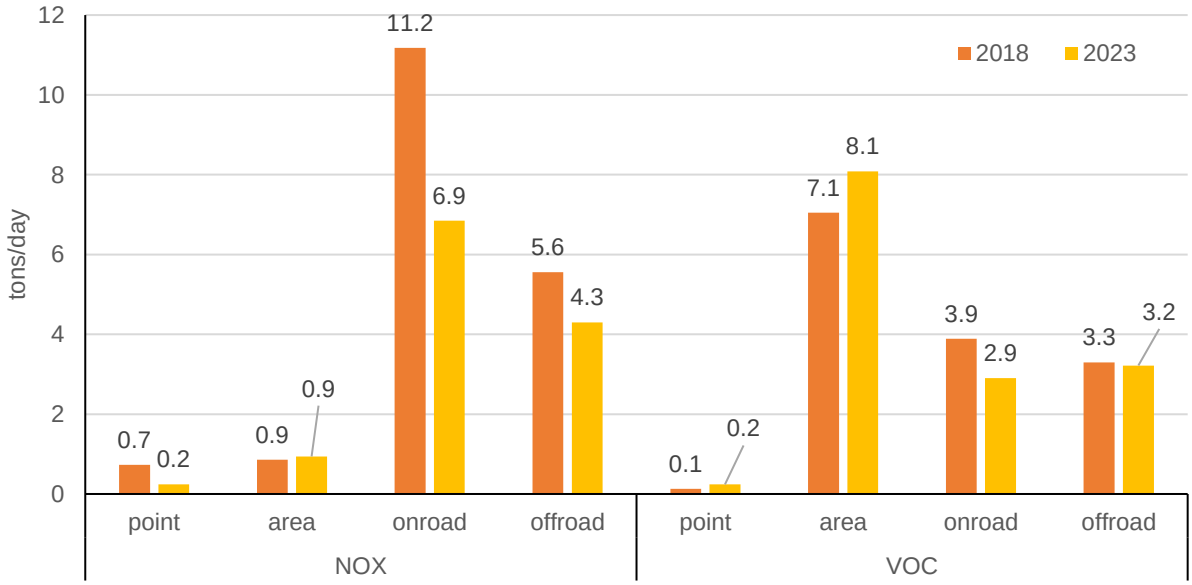

FIGURE 3-5
Comparison of NOx and VOC Planning Emission Inventory in Year 2018 and 2023 by Major Source Category

Top Five Source Categories (2018 and 2023)

The top five sources of ozone precursor emissions are presented in this section based on the summer planning inventory for 2018 and 2023.

Figures 3-6 and 3-7 provide the top five categories for VOCs for the years 2018 and 2023, respectively. Consumer products, off-road equipment and the coatings and related processes category are the largest contributors to VOC emissions, and are expected to continue to grow through 2023, due to the projected growth in population and economic activity. In contrast, on-road emissions from light duty vehicles decline from 2018 to 2023 as a result of existing regulations. The top five categories account for 55 percent of the total VOC inventory in 2018 and 58 percent in 2023.

Figures 3-8 and 3-9 show the top five categories for NOx emissions for 2018 and 2023, respectively. Mobile source categories remain the predominant contributor to NOx emissions. Heavy-duty diesel trucks, off-road equipment, and trains are the top three emitters on the list for both years. NOx from all top emitters are projected to decline from 2018 to 2023 because of the impact of existing regulations. The top five categories account for 74 percent of the total NOx inventory in 2018 and 2023.

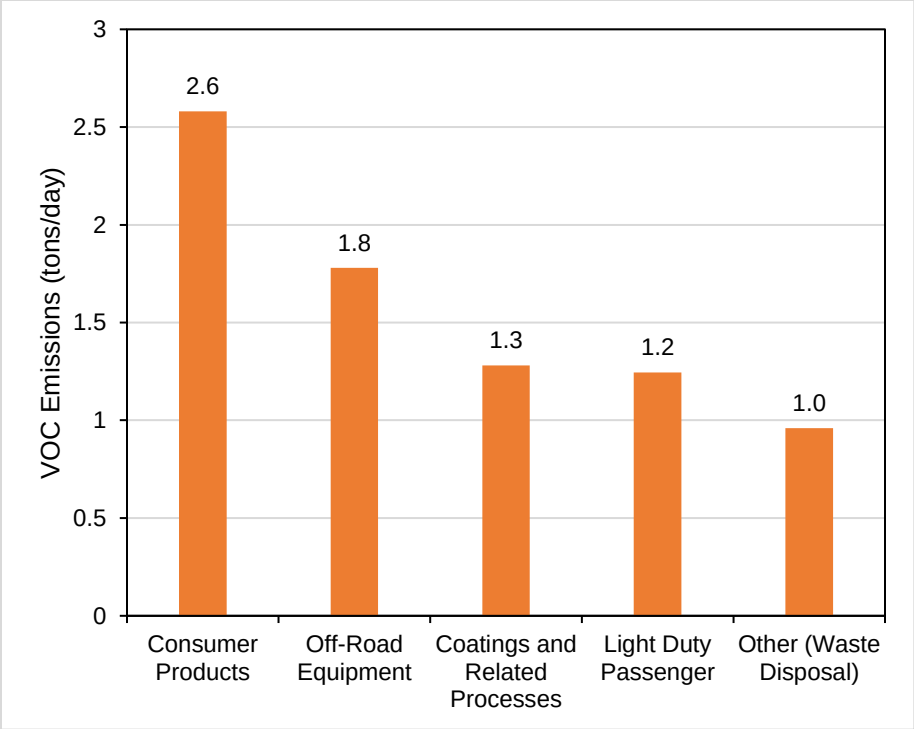

FIGURE 3-6
Top Five Emitter Categories for VOC in 2018

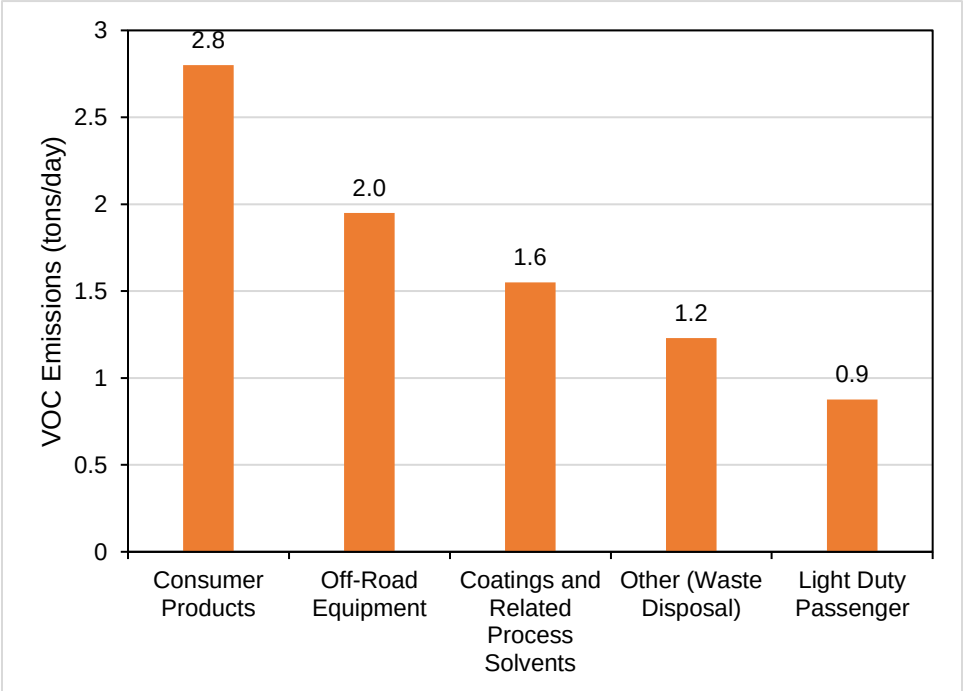

FIGURE 3-7
Top Five Emitter Categories for VOC in 2023

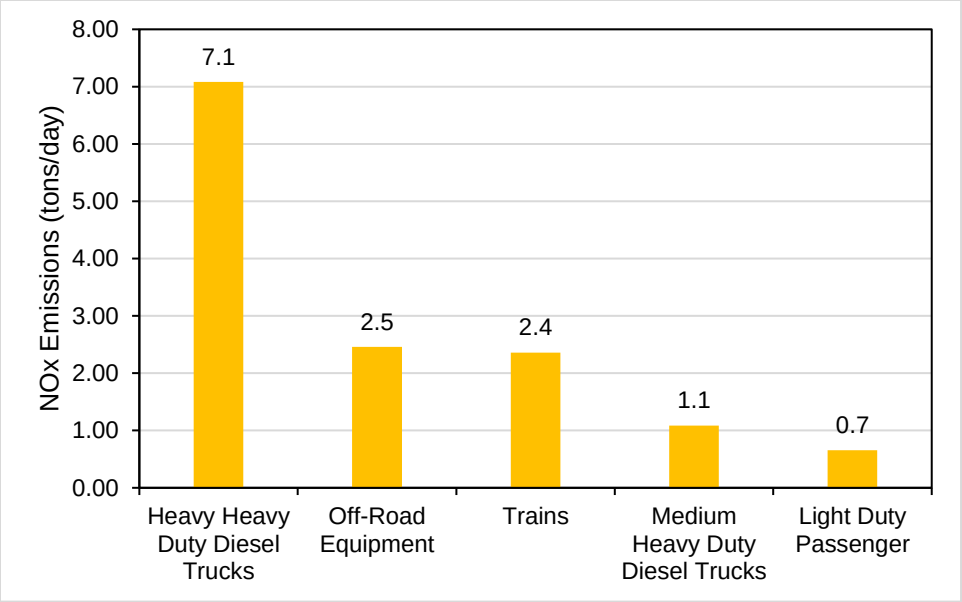

FIGURE 3-8
Top Five Emitter Categories for NOx in 2018

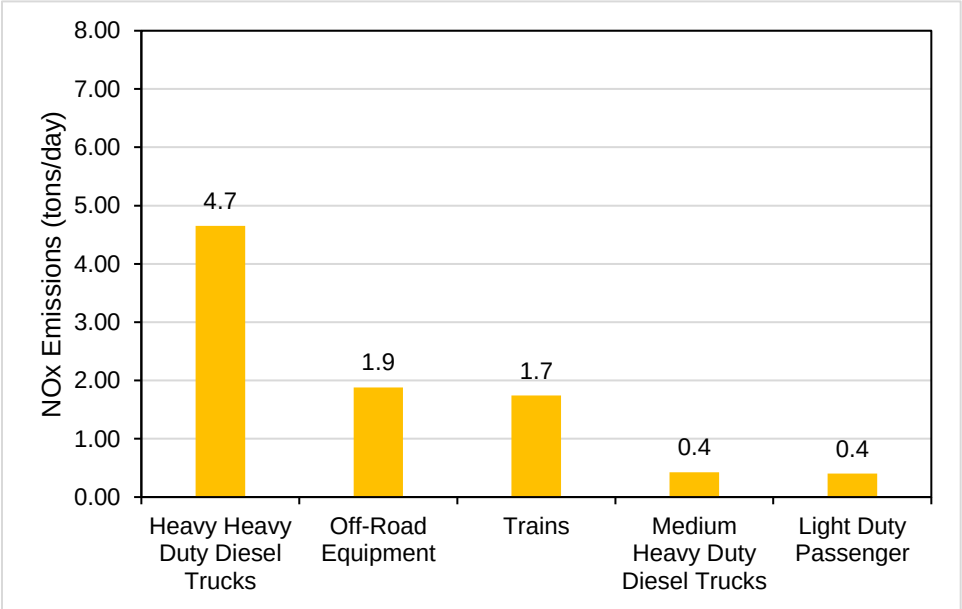

FIGURE 3-9
Top Five Emitter Categories for NOx in 2023

Emissions of the South Coast Air Basin

While a full inventory of Coachella Valley emissions is a required element of this plan, the ozone air quality in the Coachella Valley is primarily due to the transport of ozone and its precursor pollutants from the South Coast Air Basin. Table 3.3 presents the total VOC and NOx emissions in the South Coast Air Basin compared to the emissions in the Coachella Valley. As shown, the total VOC and NOx emissions emitted locally within the Coachella Valley are about 4 percent and 5 percent the total VOC and NOx emissions in the South Coast Air Basin, respectively. The Basin emissions are estimated based on the same methodology presented above.

TABLE 3-3
2018 Summer Planning VOC and NOx Emissions
for South Coast Air Basin and Coachella Valley in Tons per Day

	South Coast Air Basin		Coachella Valley	
	VOC	NOx	VOC	NOx
Stationary and Area Sources	204.8	59.8	7.2	1.6
On-Road Vehicles	84.5	165.4	3.9	11.2
Off-Road Mobile Sources	101.0	144.2	3.3	5.6
Total	390.3	369.5	14.4	18.3

Uncertainties in the Emissions Inventory

An effective AQMP/State Implementation Plan relies on a complete and accurate emissions inventory. Over the years, significant improvements have been made to quantify emission sources for which control measures are developed. Increased use of continuous monitoring and source testing has contributed to the improvements in point source inventories. Technical assistance provided to facilities and auditing of reported emissions by the South Coast AQMD have also improved the accuracy of the emissions inventory. Area source inventories that rely on average emission factors and regional activity data have inherent uncertainties. Industry-specific surveys and source-specific studies during rule development have also provided a certain degree of refinement to these emissions estimates. Mobile source inventories are also continuously updated and improved. As described earlier, many improvements are included in the on-road mobile source model EMFAC 2017, which estimates emissions from trucks, automobiles, and buses. Improvements and updates are also included in the methodologies for off-road mobile sources. Overall, the emissions inventory in this Plan is based on the most current data and methodologies, resulting in the most accurate inventory available.

Relative to future growth, there are many challenges inherent in making accurate projections, such as where vehicle trips will occur, distribution between various modes of transportation (such as

trucks and trains) as well as estimates for population growth and the number and type of jobs. Forecasts are made with the best information available; nevertheless, there is uncertainty in emissions projections. AQMP updates are generally developed every three to four years, thereby allowing for frequent updates and improvements to the inventories. In sum, the future emission projections in this Plan are a reasonable forecast with the latest updates to on-road sectors accounting for the majority of emissions.

4. CONTROL STRATEGY

The overall control strategy for meeting the 1997 8-hour ozone standard in Coachella Valley is based on the continued implementation of existing South Coast AQMD and CARB regulations and programs over the next few years. With Coachella Valley being close to attainment, the emissions reductions associated with these measures are expected to provide the needed reductions. Also, recently adopted regulations, discussed in this section, will provide additional emission reductions which will further ensure attainment of the standard by the attainment date. Chapter 5 presents future air quality and provides details on the air quality modeling analysis and attainment demonstration.

The regional air quality modeling in the 2016 AQMP indicated that significant NOx reductions with additional strategic, limited VOC reductions will lead to attainment of the ozone standards. The NOx control path was identified as the most effective strategy in meeting the 8-hour ozone standards in the South Coast Air Basin and the Coachella Valley. The updated modeling analysis described in Chapter 5 further confirms this conclusion. Since the 0.08 ppm ozone standard was promulgated in 1997, CARB and South Coast AQMD have made great progress in reducing NOx emissions over the last several decades. NOx emissions in the South Coast Air Basin have been reduced by approximately 76 percent through existing regulations and programs. Significant NOx controls have been implemented in stationary sources, including emission standards, retrofitting existing sources with add-on controls (e.g., selective catalytic reduction), equipment modification (e.g., low-NOx burners), and replacement of old high-emitting equipment with new and cleaner units. VOC reductions have also been achieved through reformulations in consumer products, solvents, adhesives, and coatings. With mobile sources responsible for over 80 percent of regional NOx emissions, reducing mobile source emissions is key to attaining the federal ozone standards. Aggressive NOx controls have also been implemented for mobile sources including engine standards, fleet requirements, alternative fuels, repowering with cleaner engines, and incentive programs. As Coachella Valley is close to attaining the 1997 8-hour ozone standard, emission reductions from continued implementation of existing regulations for stationary and mobile sources would provide the needed reductions for attainment in 2023.

Since the transport of ozone and its precursors from the South Coast Air Basin is the primary cause of the ozone exceedances in Coachella Valley, the NOx strategies implemented in the South Coast Air Basin will provide further improvement of ozone air quality in the Coachella Valley. This chapter describes existing regulations and programs providing emission reductions for the attainment of the 1997 8-hour ozone NAAQS by 2023. In addition, this chapter describes the recently adopted regulations and programs since the adoption of the 2016 AQMP. These newly adopted measures will provide additional reductions beyond the existing regulations and give further assurance for meeting the 1997 8-hour ozone standard by the 2023 attainment date.

South Coast AQMD Existing Regulations and Programs Providing Emission Reductions in Future Baseline Emissions

South Coast AQMD has implemented aggressive NOx and VOC emission reduction strategies in the past several decades to attain the federal ozone standards in the South Coast Air Basin and Coachella Valley. The emissions benefit of these regulations and programs are reflected in the future baseline emissions which are used for air quality modeling and attainment demonstration purposes. These emissions reflect the specific control requirements in existing rules and regulations as well as the natural turnover of engines, equipment, and appliances. Appendix II provides a complete list of the South Coast AQMD's existing NOx and VOC rules and regulations. The existing South Coast AQMD rules which are not fully implemented and will provide further emission reductions in 2023 are briefly described below:

- RECLAIM Program (Regulation XX)
  The NOx RECLAIM regulation, a cap-and-trade program first adopted in 1993, has been revised several times to reduce NOx emissions from the largest NOx emitting stationary sources within the South Coast AQMD's jurisdictional boundary. It has promoted additional NOx reductions by allocating and re-assessing RECLAIM Trading Credits (RTC) which periodically decline based on periodic assessments of Best Available Retrofit Control Technology (BARCT) for a wide range of NOx-emitting equipment, such as boilers, heaters, furnaces, ovens, kilns, coke calciner, fluid catalytic cracking units, internal combustion engines, and turbines. In 1994, the initial RECLAIM RTC allocation was 110 tpd of NOx, which will be reduced to 14.5 tpd in 2022. NOx RECLAIM is currently transitioning to a command-and-control regulatory structure to achieve source-specific and/or industry-specific BARCT level of NOx controls, which will provide further emission reductions (more details are provided in the next section under South Coast AQMD's Adopted Rules and Programs Since 2016 AQMP).

- Rule 1111 (Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces) and CLEANair Furnace Rebate Program
  Rule 1111 was originally adopted in 1978 to reduce NOx emissions from natural-gas-fired, fan-type central furnaces used for residential and commercial space heating. Rule 1111 was amended in 2009 to lower the NOx emission limit from 40 to 14 nanograms per Joule (ng/J), and was again amended in 2014 to include a mitigation fee option where manufacturers can pay a per-unit fee in lieu of meeting the Ultra Low-NOx emission limit of 14 ng/J. In addition, through the CLEANair Furnace Rebate Program, South Coast AQMD provides an incentive to residents who purchase and install a compliant furnace that meets Rule 1111 NOx emission limit. Emission reduction benefits from implementation of Rule 1111 will continue until 2035.

- Rule 1146.2 (Large Water Heater, Small Boilers and Process Heaters)
  The 1998 adoption of Rule 1146.2 established NOx emission limits for large water heaters and small boilers ranging from 75,000 Btu/hr up to and including 2 million Btu/hr (MMBtu/hr). New water heaters or boilers greater than 0.4 MMBtu/hr and less than or equal to 2 MMBtu/hr were required to meet an emission limit of 30 ppm of NOx. New units from 75,000 Btu/hr to 0.4 MMBtu/hr were required to meet a NOx emission limit of 55. Rule 1146.2 was amended in May 2006 to address NOx emission limits for new equipment. With the exception for small pool heaters rated less than or equal to 400,000 Btu/hr, new manufactured units greater than 400,000 Btu/hr must meet a NOx emission limit of 20 ppm starting January 1, 2010. Most new manufactured units less than or equal to 400,000 Btu/hr must meet a 20 ppm NOx limit by January 1, 2012. Pool heaters rated less than or equal to 400,000 Btu/hr, will continue to meet the existing limit of 55 ppm. Emission reduction benefits from implementation of Rule 1146.2 will continue until 2020.

- Rule 1147 (NOx Reductions from Miscellaneous Sources)
  Under Rule 1147, equipment requiring South Coast AQMD permits that are not regulated by other NOx rules must meet an emission limit of 30 or 60 parts per million (ppm) of NOx depending upon equipment type and process temperature. Compliance dates for emission limits are based on the date of equipment manufacture and emission limits are applicable to older equipment first. Owners of existing equipment are provided at least 15 years of use before they must meet rule emission limits. Specific categories of newer units have later compliance dates. Smaller and low emission units get more time to comply with emission limits than larger units. These small sources are not subject to rule emission limits until they are at least 20 years old. These units are required to demonstrate compliance with rule emission limits starting July 1, 2017. Rule 1147 was amended in September 2011 to delay implementation dates up to two years, remove a requirement for fuel or time meters and provide compliance flexibility for small and large sources. Emission reduction benefits from implementation of Rule 1147 will continue until 2023.

In addition to the regulatory approach, South Coast AQMD has also implemented incentive funding programs to encourage the immediate use of commercially available, low, near-zero and zero emissions mobile and stationary technologies. These incentive programs provide ongoing emission reductions from a variety of source categories. Examples of those incentive programs include:

- Carl Moyer Memorial Air Quality Standards Attainment Program for heavy-duty diesel engines retrofit and replacement with cleaner technologies;

- Clean School Buses Incentives for public school districts to purchase new alternative fuel school buses in order to retire their older polluting diesel buses and to replace expired alternative fuel bus tanks;

- Electric Lawn and Garden Equipment Program cleans the air through the replacement of gasoline-powered residential lawn mowers and commercial lawn and garden equipment with lower emission models at substantial discounts;
- Surplus Off-Road Opt-In for NOx (SOON) Program for the purchase of low-emission heavy-duty engines for off-road diesel fleet vehicles;
- Proposition 1B – Goods Movement Emissions Reduction Program to reduce diesel air pollution from goods movement operations;
- Enhanced Fleet Modernization Program (EFMP) for retirement of older higher polluting vehicles;
- Volkswagen Environmental Mitigation Trust that provides funding to mitigate excess emissions from the heavy-duty sector through the replacement or repower of older, heavy-duty vehicles, engines and equipment with zero emission and other clean technologies; and
- Mobile Source Air Pollution Review Committee (MSRC) Clean Transportation Initiative that the MSRC is partnering with South Coast AQMD to enhance the initiatives available under the On-Road Heavy-Duty Voucher Incentive Program (VIP). The VIP provides funding to owners/operators with fleets of 10 or fewer vehicles to replace older vehicles with engine models that are 2013 emissions-compliant or newer to help clean up emissions from older, more polluting vehicles.

These incentive programs have resulted in early emission reductions of NOx from on-road and off-road mobile sources beyond existing regulations.

South Coast AQMD Adopted Rules and Programs Since 2016 AQMP But Not Yet Reflected in the Inventory

Since the adoption of the 2016 AQMP, South Coast AQMD has adopted several rules and programs to further reduce NOx and VOC emissions. While emissions reductions from existing regulations and programs are expected to provide the needed reductions for attaining the 1997 8-hour ozone standard, the recently adopted rules and regulations would provide additional emission reductions benefits and assurances towards attainment. Table 4-1 summarizes NOx and VOC rules that have been adopted or amended by the South Coast AQMD since the 2016 AQMP. Pursuant to directives listed in control measure CMB-05 of the 2016 AQMP and in recently adopted state statute (AB 617), RECLAIM facilities are subject to an expedited schedule to implement additional BARCT no later than December 31, 2023. As a result, Rules 1110.2, 1117, 1134, 1135, and 1146 series have been adopted and/or amended in the 2018–2020 timeframe to implement CMB-05 and AB 617. Rule 1110.2 (Emissions from Gaseous- and Liquid-Fueled Engines) reduces emissions of NOx, VOC, and CO from all stationary and portable engines rated over 50 rated brake

horsepower (bhp). Rule 1117 (Emissions of Oxides of Nitrogen from Glass Melting Furnaces) establishes NOx and SOx emission standards for container glass melting and sodium silicate furnaces, including NOx emission limits for auxiliary combustion equipment associated with container glass melting operations. Rules 1134 (Emissions of Oxides of Nitrogen from Stationary Gas Turbines) and 1135 (Emissions of Oxides of Nitrogen from Electricity Generating Facilities) apply to RECLAIM and non-RECLAIM facilities. Both rules include more stringent NOx emission limits to reflect current BARCT and provide implementation timeframes to facilitate the transition of the NOx RECLAIM program to a command-and-control regulatory structure. Rule 1146 series (1146, 1146.1, and 1146.2) update the NOx emission limits for boilers, heaters, and steam generators covered under these rules. The revised NOx emission limits represent BARCT and apply to RECLAIM and non-RECLAIM facilities. The implementation of all these rule amendments will result in approximately 5.7 tpd of NOx reductions.

The 2016 AQMP also includes Facility-Based Mobile Source Measures covering marine ports (MOB-01), railyards (MOB-02), warehouse/distribution centers (MOB-03), commercial airports (MOB-04), and new development and redevelopment projects (EGM-01). These measures are intended to help achieve the emission reductions attributed to CARB's Further Deployment of Cleaner Technology measures by reducing emissions from these facilities through South Coast AQMD actions. In May 2018, the South Coast AQMD Governing Board directed staff to pursue various approaches for reducing emissions from these large indirect sources: a voluntary Memorandum of Understanding (MOU) approach with marine ports and commercial airports, and regulatory approaches for warehouses/distribution centers, railyards and new developments and re-development projects. In December 2019, the Facility-Based Mobile Source Control Measure for Commercial Airports (in the form of MOUs with the five commercial airports) was adopted with an expected reduction of 0.52 tpd of NOx emissions in 2023. This measure implements the 2016 AQMP Control Measure MOB-04, Emission Reductions at Commercial Airports and applies to Los Angeles International Airport, John Wayne Airport, Hollywood Burbank Airport, Ontario International Airport, and Long Beach Airport.

Additional NOx emission reductions are anticipated from continued implementation of existing incentive programs with future funding. Finally, additional reductions are anticipated from deployment of Metrolink’s Tier 4 locomotives, which were not included in the 2016 AQMP emissions inventory. The majority of emission reductions benefits in Table 4-1 are expected to occur in the South Coast Air Basin. However, because the ozone levels in the Coachella Valley are mostly due to emissions in the South Coast Air Basin, these reductions will result in reduced ozone in the Coachella Valley.

TABLE 4-1

Rules and Programs Adopted or Amended by South Coast AQMD since 2016 AQMP (January 2016 to August 2020)

Source	Rule No – Rule Title	Adoption Date	Implementation End Date	VOC Reductions (tons per day)	NOx Reductions (tons per day)	2016 AQMP Control Measure No.
Stationary	Rule 1113 – Architectural Coatings	2/5/2016 (Amended)	2019	0.88		CTS-01*
Stationary	Rule 1168 – Adhesive and Sealant Applications	10/6/2017 (Amended)	2023	1.38		CTS-01
Stationary	Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities	11/2/2018 (Amended)	2024		1.7	CMB-01; CMB-05
Stationary	Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters	12/7/2018 (Amended)	2023 (RECLAIM) / 2033 (Non-RECLAIM)		0.27 (RECLAIM) / 0.04 (Non-RECLAIM)	CMB-01; CMB-05
Stationary	Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters					
Stationary	Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters					
Stationary	Rule 1118.1 – Control of Emissions from Non-Refinery Flares	1/4/2019 (Adopted)	2025	0.014	0.18	CMB-03
Stationary	Rule 1134 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines	4/5/2019 (Amended)	2026		2.8	CMB-01; CMB-05
Stationary	Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines	11/1/2019 (Amended)	2023		0.29	CMB-05; CMB-01
Stationary	Rule 1117 – Emissions from Container Glass Melting and Sodium Silicate Furnaces	6/5/2020 (Amended)	2023		0.57	CMB-05
Mobile	Facility-Based Mobile Source Measure for Commercial Airports	12/6/2019	2023		0.52	MOB-04

* 2012 AQMP Control Measure

CARB Key Mobile Source Regulations and Programs Providing Emission Reductions in Future Baseline Emissions

Given the severity of California's air quality challenges and the need for ongoing emission reductions, the CARB has implemented the most comprehensive mobile source emissions control program in the nation. CARB's comprehensive program relies on four fundamental approaches:

- Stringent emissions standards that minimize emissions from new vehicles and equipment;
- In-use programs that target the existing fleet and require the use of the cleanest vehicles and emissions control technologies;
- Cleaner fuels that minimize emissions during combustion; and
- Incentive programs that remove older, dirtier vehicles and equipment and replace those vehicles with the cleanest technologies.

This multi-faceted approach has spurred the development of increasingly cleaner technologies and fuels and achieved significant emission reductions across all mobile source sectors that go far beyond national programs or programs in other states. These efforts extend back to the first mobile source regulations adopted in the 1960s, and pre-date the federal CAA of 1970, which established the basic national framework for controlling air pollution. In recognition of the pioneering nature of CARB's efforts, the CAA provides California unique authority to regulate mobile sources more stringently than the federal government by providing a waiver of preemption for its new vehicle emission standards under Section 209(b). This waiver provision preserves a pivotal role for California in the control of emissions from new motor vehicles, recognizing that California serves as a laboratory for setting motor vehicle emission standards. Since then, the CARB has consistently sought and obtained waivers and authorizations for its new motor vehicle and off-road regulations. CARB's history of progressively strengthening standards as technology advances, coupled with the waiver process requirements, ensures that California's regulations remain the most stringent in the nation. A list of regulatory actions CARB has taken since 1985 is provided at the end of this analysis to highlight the scope of CARB's actions to reduce mobile source emissions.

Since 2000, CARB adopted numerous regulations aimed at reducing exposure to diesel PM and NOx. These regulations are aimed at freight transport sources such as heavy-duty diesel trucks, transportation sources such as passenger cars and buses, and off-road sources such as large construction equipment. Phased implementation of these regulations will produce increasing emission reduction benefits through 2023 and beyond, as the regulated fleets are retrofitted, and as older and dirtier portions of the fleets are replaced with newer and cleaner models at an accelerated pace.

Further, CARB and South Coast AQMD staff work closely on identifying and distributing incentive funds to accelerate cleanup of engines. Key incentive programs include: Low Carbon Transportation, Air Quality Improvement Program, Volkswagen Mitigation Trust, Community Air Protection, Carl Moyer Program, Goods Movement Program, and Funding Agricultural Replacement Measures for Emission Reductions (FARMER). These incentive-based programs work in tandem with regulations to accelerate deployment of cleaner technology.

I) Light-Duty Vehicles

NOx emissions from light-duty vehicles and key programs contributing to those reductions in the Coachella Valley have been reduced significantly since 1990 and will continue to go down through 2023 due to the benefits of CARB's longstanding light-duty mobile source program. Key light-duty programs include the Advanced Clean Cars program (ACC), On-Board Diagnostics (OBD), Reformulated Gasoline (RFG), Incentive Programs, and the Enhanced Smog Check Program.

Since setting the nation's first motor vehicle exhaust emission standards in 1966 that led to the first pollution controls, California has dramatically tightened emission standards for light-duty vehicles. California is unique in that it is the only state authorized under the Clean Air Act to set more stringent mobile source standards than the federal standards. Through CARB regulations, today's new cars pollute 99 percent less than their predecessors did thirty years ago. In 1970, CARB required auto manufacturers to meet the first standards to control NOx emissions along with hydrocarbon emissions. The simultaneous control of emissions from motor vehicles and fuels led to the use of cleaner-burning RFG that has removed the emissions equivalent of 3.5 million vehicles from California's roads. Since CARB first adopted it in 1990, the Low-Emission Vehicle Programs (LEV and LEV II) and Zero-Emission Vehicle (ZEV) Program have resulted in the production and sales of hundreds of thousands of ZEVs in California.

i. Advanced Clean Cars

CARB's groundbreaking ACC program is now providing the next generation of emission reductions in California, and ushering in a new zero emission passenger transportation system. The success of these programs is evident: California is the world's largest market for ZEVs, with over 21 models available today, and a wide variety are now available at lower price points, attracting new consumers. As of October 2019, Californians drive nearly 50 percent of all ZEVs on the road in the United States, while the U.S. makes up about half of the world market. This movement towards commercialization of advanced clean cars has occurred due to CARB's ZEV regulation, part of ACC, which affects passenger cars and light-duty trucks.

CARB's ACC Program, approved in January 2012, is a pioneering approach of a 'package' of regulations that – although separate in construction – are related in terms of the synergy developed to address both ambient air quality needs and climate change. The ACC program combines the control of smog, soot causing pollutants and greenhouse gas emissions into a single coordinated

package of requirements for model years 2015 through 2025. The program assures the development of environmentally superior cars that will continue to deliver the performance, utility, and safety vehicle owners have come to expect.

The ACC program approved by CARB in January 2012 also included amendments affecting the current ZEV regulation through the 2017 model year in order to enable manufacturers to successfully meet 2018 and subsequent model year requirements. These ZEV amendments are intended to achieve commercialization through simplifying the regulation and pushing technology to higher volume production in order to achieve cost reductions. The ACC Program benefits will increase over time as new cleaner cars enter the fleet displacing older and dirtier vehicles. However, in 2019, the federal government finalized Part 1 of the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, which revoked California's authority to set more stringent standards for light duty vehicles. In 2020, Part 2 of that rule was finalized, rolling back previously adopted vehicle standards. These rules threaten the ACC Program and clean air quality progress made in California.

ii. On Board Diagnostics

California's first OBD regulation required manufacturers to monitor some of the emission control components on vehicles starting with the 1988 model year. In 1989, CARB adopted OBD II, which required 1996 and subsequent model year passenger cars, light-duty trucks, and medium-duty vehicles and engines to be equipped with second generation OBD systems. OBD systems are designed to identify when a vehicle's emission control systems or other emission-related computer-controlled components are malfunctioning, causing emissions to be elevated above the vehicle manufacturer's specifications. CARB subsequently strengthened OBD II requirements and added OBD II specific enforcement requirements for 2004 and subsequent model year passenger cars, light-duty trucks, and medium-duty vehicles and engines.

iii. Reformulated Gasoline

Since 1996, CARB has been regulating the formulation of gasoline resulting in California gasoline being the cleanest in the world. California's cleaner-burning gasoline regulation is one of the cornerstones of the State's efforts to reduce air pollution and cancer risk. RFG is fuel that meets specifications and requirements established by CARB. The specifications reduced motor vehicle toxics by about 40 percent and reactive organic gases by about 15 percent. The results from cleaning up fuel can have an immediate impact as soon as it is sold in the State. Vehicle manufacturers design low-emission emission vehicles to take full advantage of cleaner-burning gasoline properties.

iv. Incentive Programs

There are a number of different incentive programs focusing on light-duty vehicles that produce extra emission reductions beyond traditional regulations. The incentive programs work in two ways, encouraging the retirement of dirty older cars and encouraging the purchase of a cleaner vehicle.

Voluntary accelerated vehicle retirement or "car scrap" programs provide monetary incentives to vehicle owners to retire older, more polluting vehicles. The purpose of these programs is to reduce fleet emissions by accelerating the turnover of the existing fleet and subsequent replacement with newer, cleaner vehicles. Both State and local vehicle retirement programs are available.

California's voluntary vehicle retirement program is administered by the Bureau of Automotive Repair (BAR) and provides $1,000 per vehicle and $1,500 for low-income consumers for unwanted vehicles that have either failed or passed their last Smog Check Test and that meet certain eligibility guidelines. This program is referred to as the Consumer Assistance Program.

In recent years, the California Legislature has allocated significant funding increases towards incentive-based programs. In fiscal year 2019-20, the Clean Vehicle Rebate Project (CVRP) was allocated $238 million. CVRP is designed to offer vehicle rebates on a first-come, first-serve basis for light-duty ZEVs, plug-in hybrid electric vehicles, and zero-emission motorcycles. Through March 2019, CVRP has provided rebates for nearly 320,000 vehicles at a total of just over $720 million since the project's launch in 2010.

Clean Cars 4 All (formerly known as the Enhanced Fleet Modernization Program Plus-Up Pilot Project) provides incentives for lower-income consumers living in and near disadvantaged communities who scrap their old vehicles and purchase new or used hybrid, plug-in hybrid, or zero-emission vehicle replacement vehicles. Since fiscal year 2014–2015, CARB has allocated $112 million for Clean Cars 4 All.

v. California Enhanced Smog Check Program

BAR is the State agency charged with administration and implementation of the Smog Check Program. The Smog Check Program is designed to reduce air pollution from California registered vehicles by requiring periodic inspections for emission-control system problems, and by requiring repairs for any problems found. In 1998, the Enhanced Smog Check program began in which Smog Check stations relied on the BAR-97 Emissions Inspection System (EIS) to test tailpipe emissions with either a Two-Speed Idle (TSI) or Acceleration Simulation Mode (ASM) test depending on where the vehicle was registered. For instance, vehicles registered in urbanized areas received an ASM test, while vehicles in rural areas or received a TSI test.

In 2009, the following requirements were added in to improve and enhance the Smog Check Program, making it more inclusive of motor vehicles and effective on smog reductions:

- Low pressure evaporative test;
- More stringent pass/fail cutpoints;
- Visible smoke test; and
- Inspection of light- and medium-duty diesel vehicles.

The next major change was due to AB 2289, adopted in October 2010, a new law restructuring California's Smog Check Program, streamlining and strengthening inspections, increasing penalties for misconduct, and reducing costs to motorists. This new law sponsored by CARB and BAR, promised faster and less expensive Smog Check inspections by talking advantage of OBD software installed on all vehicles since 2000. The new law also directs vehicles without this equipment to high-performing stations, helping to ensure that these cars comply with current emission standards. This program will reduce consumer costs by having stations take advantage of diagnostic software that monitors pollution-reduction components and tailpipe emissions. Beginning mid-2013, testing of passenger vehicles using OBD was required on all vehicles model years 2000 or newer.

II) Heavy-Duty Trucks

NOx emissions from heavy-duty vehicles and key programs contributing to those reductions in the Coachella Valley have decreased significantly since 1990 and will continue to decrease through 2023 due to the benefits of CARB's long-standing heavy-duty mobile source program. Key programs include Heavy-Duty Engine Standards, Clean Diesel Fuel, the Truck and Bus Regulation and Incentive Programs.

i. Heavy-Duty Engine Standards

Since 1990, heavy-duty engine NOx emission standards have become dramatically more stringent, dropping from 6 grams per brake horsepower-hour (g/bhp-hr) in 1990 down to the current 0.2 g/bhp-hr standard, which took effect in 2010. In addition to mandatory NOx standards, there have been several generations of optional lower NOx standards put in place over the past 15 years. Most recently in 2015, engine manufacturers can certify in California to three optional NOx emission standards of 0.1 g/bhp-hr, 0.05 g/bhp-hr, and 0.02 g/bhp-hr (i.e., 50 percent, 75 percent, and 90 percent lower than the current mandatory standard of 0.2 g/bhp-hr). The optional standards allow local air districts and CARB to preferentially provide incentive funding to buyers of cleaner trucks, to encourage the development of cleaner engines.

ii. Clean Diesel Fuel

Since 1993, CARB has required that diesel fuel have a limit on the aromatic hydrocarbon content and sulfur content of the fuel. Diesel powered vehicles account for a disproportionate amount of

the diesel PM, which is considered a toxic air contaminant. In 2006, CARB required a low-sulfur diesel fuel to be used not only by on-road diesel vehicles but also for off-road engines. The diesel fuel regulation allows alternative diesel formulations as long as emission reductions are equivalent to the CARB formulation.

iii. *Cleaner In-Use Heavy-Duty Trucks (Truck and Bus Regulation)*

The Truck and Bus Regulation was first adopted in December 2008. This rule represents a multi-year effort to turn over the legacy fleet of engines and replace them with the cleanest technology available. In December 2010, CARB revised specific provisions of the in-use heavy-duty truck rule, in recognition of the deep economic effects of the recession on businesses and the corresponding decline in emissions.

Starting in 2012, the Truck and Bus Regulation phases in requirements applicable to an increasingly larger percentage of the truck and bus fleet over time, so that by 2023 nearly all older vehicles will be upgraded to have exhaust emissions meeting 2010 model year engine emissions levels while continuing to lower NOx levels through 2023. The regulation applies to nearly all diesel-fueled trucks and buses with a GVWR greater than 14,000 pounds that are privately or federally owned, including on-road and off-road agricultural yard goats, and privately and publicly owned school buses. Moreover, the regulation applies to any person, business, school district, or federal government agency that owns, operates, leases or rents affected vehicles. The regulation also establishes requirements for any in-state or out-of-state motor carrier, California-based broker, or any California resident who directs or dispatches vehicles subject to the regulation. Finally, California sellers of a vehicle subject to the regulation would have to disclose the regulation's potential applicability to buyers of the vehicles. Approximately 170,000 businesses in nearly all industry sectors in California, and almost a million vehicles that operate on California roads each year are affected. Some common industry sectors that operate vehicles subject to the regulation include: for-hire transportation, construction, manufacturing, retail and wholesale trade, vehicle leasing and rental, bus lines, and agriculture.

In 2017, California passed legislation ensuring compliance with the Truck and Bus Regulation through the California Department of Motor Vehicles (DMV) vehicle registration program. Starting January 1, 2020, DMV will verify compliance to ensure that vehicles subject to the Truck and Bus Regulation meet the requirements prior to obtaining DMV vehicle registration. The law requires the DMV to deny registration for any vehicle that is non-compliant or has not reported to CARB as compliant or exempt from the Truck and Bus Regulation.

CARB compliance assistance and outreach activities that are key in support of the Truck and Bus Regulation include:

- The Truck Regulations Upload and Compliance Reporting System, an online reporting tool developed and maintained by CARB staff;

- The Truck and Bus regulation's fleet calculator, a tool designed to assist fleet owners in evaluating various compliance strategies;
- Targeted training sessions all over the State; and
- Out-of-state training sessions conducted by a contractor.

CARB staff also develops regulatory assistance tools, conducts and coordinates compliance assistance and outreach activities, administers incentive programs, and actively enforces the entire suite of regulations. Accordingly, CARB's approach to ensuring compliance is based on a comprehensive outreach and education effort.

iv. *Incentive Programs*

There are a number of different incentive programs focusing on heavy-duty vehicles that produce extra emission reductions beyond traditional regulations. The incentive programs encourage the purchase of cleaner trucks.

Several State and local incentive funding pools have been used historically, and remain available, to fund the accelerated turnover of on-road heavy-duty vehicles. Since the Carl Moyer Memorial Air Quality Standards Attainment Program (Moyer Program) began in 1998 nearly $1 billion in Moyer Program incentive grants have been used to clean up over 60,000 older engines in California. This has reduced NOx and ROG emissions by more than 183,000 tons, and particulate matter by more than 6,700 tons statewide.

Beginning in 2008, the Goods Movement Emission Reduction Program funded by Proposition 1B has funded cleaner trucks for the region's transportation corridors; the final increment of funds will implement projects through 2020.

The California Legislature has recently allocated significant funding increases towards heavy-duty vehicle incentive-based programs. The Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) is the cornerstone of advanced technology heavy-duty incentives, providing funding since 2010 to support the long-term transition to zero-emission vehicles in the heavy-duty market. Since its inception in 2009, HVIP has been allocated over $447 million. HVIP has supported the purchase of 2,559 zero-emission trucks and buses, 2,631 hybrid trucks, 2,068 low NOx engines, and 195 trucks with electric power take off systems by California fleets through June 30, 2019.

CARB has also administered a Truck Loan Assistance Program since 2009. As of June 30, 2019, about $113.2 million in Truck Loan Assistance Program funding has been expended to provide about $1.5 billion in financing to small-business truckers for the purchase of approximately 26,000 cleaner trucks, exhaust retrofits, and trailers throughout California.

III) Off-Road Sources

Off-road sources encompass equipment powered by an engine that does not operate on the road. Sources vary from ships to lawn and garden equipment and for example, include sources like locomotives, aircraft, tractors, harbor craft, off-road recreational vehicles, construction equipment, forklifts, and cargo handling equipment.

NOx emissions from off-road equipment and key programs contributing to those reductions have decreased significantly in the Coachella Valley since 1990 and will continue to decrease through 2023 due to the benefits of CARB's and U.S. EPA long-standing programs. Key programs include Off-Road Engine Standards, Locomotive Engine Standards, Clean Diesel Fuel, Cleaner In-Use Off-Road Regulation and In-Use Large Spark Ignition (LSI) Fleet Regulation.

i. Off-Road Engine Standards

The Clean Air Act preempts states, including California, from adopting requirements for new off-road engines less than 175 HP used in farm or construction equipment. California may adopt emission standards for in-use off-road engines pursuant to Section 209(e)(2), but must receive authorization from U.S. EPA before it may enforce the adopted standards.

CARB first approved regulations to control exhaust emissions from small off-road engines (SORE) such as lawn and garden equipment in December 1990 with amendments in 1998, 2003, 2010, 2011, and 2016. These regulations were implemented through three tiers of progressively more stringent exhaust emission standards that were phased in between 1995 and 2008.

Manufacturers of forklift engines are subject to new engine standards for both diesel and large spark ignition (LSI) engines. Off-road diesel engines were first subject to engine standards and durability requirements in 1996 while the most recent Tier 4 Final emission standards were phased in starting in 2013. Tier 4 emission standards are based on the use of advanced after-treatment technologies such as diesel particulate filters and selective catalytic reduction. LSI engines have been subject to new engine standards that include both criteria pollutant and durability requirements since 2001 with the cleanest requirements phased-in starting in 2010.

ii. Locomotive Engine Standards

The Act and the U.S. EPA national locomotive regulations expressly preempt states and local governments from adopting or enforcing "any standard or other requirement relating to the control of emissions from new locomotives and new engines used in locomotives" (U.S. EPA interpreted new engines in locomotives to mean remanufactured engines, as well). U.S. EPA has approved two sets of national locomotive emission regulations (1998 and 2008). In 1998, U.S. EPA approved the initial set of national locomotive emission regulations. These regulations primarily emphasized NOx reductions through Tier 0, 1, and 2 emission standards. Tier 2 NOx emission

standards reduced older uncontrolled locomotive NOx emissions by up to 60 percent, from 13.2 to 5.5 g/bhp-hr.

In 2008, U.S. EPA approved a second set of national locomotive regulations. Older locomotives upon remanufacture are required to meet more stringent particulate matter (PM) emission standards which are about 50 percent cleaner than Tier 0–2 PM emission standards. U.S. EPA refers to the PM locomotive remanufacture emission standards as Tier 0+, Tier 1+, and Tier 2+. The new Tier 3 PM emission standard (0.1 g/bhp-hr), for model years 2012-2014, is the same as the Tier 2+ remanufacture PM emission standard. The 2008 regulations also included new Tier 4 (2015 and later model years) locomotive NOx and PM emission standards. The U.S. EPA Tier 4 NOx and PM emission standards further reduced emissions by approximately 95 percent from uncontrolled levels.

In April 2017, CARB petitioned U.S. EPA for rulemaking, seeking the amendment of emission standards for newly built locomotives and locomotive engines and lower emission standards for remanufactured locomotives and locomotive engines. The petition asks U.S. EPA to update its standards to take effect for remanufactured locomotives in 2023 and for newly built locomotives in 2025. The new emission standards would provide critical criteria pollutant reductions, particularly in the disadvantaged communities that surround railyards.

iii. *Clean Diesel Fuel*

Since 1993, CARB has required that diesel fuel have a limit on the aromatic hydrocarbon content and sulfur content of the fuel. Diesel powered vehicles account for a disproportionate amount of the diesel particulate matter which is considered a toxic air contaminant. In 2006, CARB required a low-sulfur diesel fuel to be used not only by on-road diesel vehicles but also for off-road engines. The diesel fuel regulation allows alternative diesel formulations as long as emission reductions are equivalent to the CARB formulation.

iv. *Cleaner In-Use Off-Road Equipment (Off-Road Regulation)*

The Off-Road Regulation which was first approved in 2007 and subsequently amended in 2010 in light of the impacts of the economic recession. These off-road vehicles are used in construction, manufacturing, the rental industry, road maintenance, airport ground support and landscaping. In December 2011, the Off-Road Regulation was modified to include on-road trucks with two diesel engines.

The Off-Road Regulation will significantly reduce emissions of diesel PM and NOx through 2023 from the over 150,000 in-use off-road diesel vehicles that operate in California. The regulation affects dozens of vehicle types used in thousands of fleets by requiring owners to modernize their fleets by replacing older engines or vehicles with newer, cleaner models, retiring older vehicles or using them less often, or by applying retrofit exhaust controls.

The Off-Road Regulation imposes idling limits on off-road diesel vehicles, requires a written idling policy, and requires a disclosure when selling vehicles. The regulation also requires that all vehicles be reported to CARB and labeled, restricts the addition of older vehicles into fleets, and requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing verified exhaust retrofits. The requirements and compliance dates of the Off-Road Regulation vary by fleet size.

Fleets are subject to increasingly stringent restrictions on adding older vehicles. The regulation also sets performance requirements. While the regulation has many specific provisions, in general by each compliance deadline, a fleet must demonstrate that it has either met the fleet average target for that year, or has completed the Best Available Control Technology requirements. The performance requirements of the Off-Road Regulation were phased in from January 1, 2014 through January 1, 2019.

Compliance assistance and outreach activities in support of the Off-Road Regulation include the following activities.

The Diesel Off-road On-line Reporting System, an online reporting tool developed and maintained by CARB staff.

The Diesel Hotline (866-6DIESEL), which provides the regulated public with questions about the regulations and access to CARB staff. Staff is able to respond to questions in English, Spanish and Punjabi.

The Off-road Listserv, providing equipment owners and dealerships with timely announcement of regulatory changes, regulatory assistance documents, and reminders for deadlines.

v. LSI In-Use Fleet Regulation

Forklift fleets can be subject to either the LSI fleet regulation, if fueled by gasoline or propane, or the off-road diesel fleet regulation. Both regulations require fleets to retire, repower, or replace higher-emitting equipment in order to maintain fleet average standards. The LSI fleet regulation was originally adopted in 2007 with requirements beginning in 2009. While the LSI fleet regulation applies to forklifts, tow tractors, sweeper/scrubbers, and airport ground support equipment, it maintains a separate fleet average requirement specifically for forklifts. The LSI fleet regulation requires fleets with four or more LSI forklifts to meet fleet average emission standards.

vi. Incentive Programs

There are a number of different incentive programs focusing on off-road mobile sources that increase the penetration of cleaner technologies into the market. The incentive programs encourage the purchase of cleaner diesel engines.

The Clean Off-Road Equipment Voucher Incentive Project (CORE) is a voucher project similar to HVIP, but for advanced technology off-road equipment. The fiscal year 2017–2018 Funding Plan allocated $40 million to support zero-emission freight equipment through CORE. CARB launched CORE at the end of 2019.

California's agricultural industry consists of approximately 77,500 farms and ranches, providing over 400 different commodities, making agriculture one of the State's most diverse industries. In recognition of the strong need and this industry's dedication to reducing their emissions, the State Legislature has allocated over $330 million towards the FARMER Program since 2017. CARB staff developed the FARMER Program to meet the State Legislature's objectives and help meet the State's criteria, toxic, and greenhouse gas emission reduction goals. As of September 30, 2019, the FARMER Program has spent $97 million on over 2,500 pieces of agricultural equipment and will reduce 250 tons of PM2.5 and 4,200 tons of NOx over the lifetime of the projects.

A complete listing of CARB's existing regulations and the adoption dates are provided in Appendix III.

CARB Recent Regulations Adopted But Not Yet Reflected in the Inventory

Recent regulations have been adopted for on-road and off-road mobile sources since the release of the 2016 AQMP. The emissions inventory and attainment demonstration included in this Plan reflect all on-road regulations incorporated in EMFAC 2017 and off-road regulations included in the 2016 AQMP. While the emissions benefits from these newly adopted programs are not yet reflected in the base or future inventories, the emissions reductions will support monitored attainment of the 0.08 ppm 8-hour ozone standard in the Coachella Valley. These programs are listed below.

- Innovative Clean Transit – The Innovative Clean Transit (ICT) Regulation seeks to transition buses in California to zero-emission by 2040. The ICT regulation requires California transit agencies to gradually transition their buses to zero-emission technologies beginning with a requirement that only zero emission buses can be purchased starting in 2029. The ICT regulation is structured to allow transit agencies to take advantage of incentive programs by acting early and, also implementing plans that are best suited to their unique situation.
- Zero-Emission Airport Shuttle Bus – The Zero-Emission Airport Shuttle Regulation (Shuttle Regulation) will transition combustion-powered vehicles that serve California's commercial airports to zero-emission vehicles (ZEVs). Specifically, the Shuttle Regulation requires fixed route airport shuttles serving California's 13 largest airports to transition to 100 percent ZEVs by 2035. The Shuttle Regulation applies to public and private fleets, including operators of parking facilities, rental car agencies, and hotels.

- The Advanced Clean Truck (ACT) regulation adopted by the Board on June 25, 2020 will accelerate the widespread adoption of zero-emission vehicles (ZEVs) in the medium-and heavy-duty truck sector and reduce the amount of harmful emissions generated from on-road mobile sources. The ACT regulation requires truck manufacturers to sell increasing numbers of zero-emission trucks (ZEVs) in California annually. Medium- and heavy-duty vehicle manufacturers must produce and sell ZEVs beginning with the 2024 model year with increasing sales annually through the 2035 model year when 55 percent of annual Class 2b-3 vehicle sales, including pickup trucks, must be ZEVs, 75 percent of annual Class 4-8 vehicle sales must be ZEVs, and 40 percent of Class 7-8 Tractor sales must be ZEVs.
- Ocean Going Vessels-At Berth – The Control Measure for Ocean-Going Vessels at Berth (At Berth Regulation) is designed to achieve added public health and air quality benefits by requiring emission controls at additional ports and terminals, including marine terminals that operate independently from a port or port authority, and vessels not covered by the previous ocean-going vessel regulation.
- Omnibus Low-NOx Regulation – The Heavy-Duty Engine and Vehicle Omnibus Regulation (Omnibus Regulation) establishes new exhaust emission standards, test procedures, and other emission-related requirements for 2024 and subsequent model year California-certified on-road heavy-duty engines. The Omnibus Regulation implements two measures included within CARB's 2016 State Strategy for the State Implementation Plan: a "Low-NOx Engine Standard" which will significantly reduce NOx emissions from new engines during certification; and a "Lower In Use Emission Performance Level," which will ensure in-use heavy-duty vehicles continue to control emissions throughout their useful lives.

As described above, there are several new programs that will provide significant reductions of NOx between now and 2023 and beyond 2023. Most notably, of the already approved regulations, are the Truck and Bus regulation and the Off-Road regulation. In addition to these approved regulations, the Board is considering measures that will provide further reductions in 2023.

The 2023 projected attainment date is based on the emission reductions from existing regulations and programs. The recently adopted regulations by South Coast AQMD and CARB, described in this Chapter, will provide further reductions to ensure that Coachella Valley will attain the standard in or before 2023. The earlier attainment of the standard was also evaluated. However, given the time it takes to adopt and implement new regulations, and given that the 2022 ozone season begins less than 18 months from the date of Plan adoption, no new feasible measures were identified which could be adopted and implemented in time to provide additional reductions to further accelerate the attainment.

5. FUTURE AIR QUALITY

Ozone Modeling Approach

The Coachella Valley Planning Area is defined, for the purposes of this Plan, as the desert portion of Riverside County in the Salton Sea Air Basin (SSAB), and is part of the South Coast AQMD, 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. In February 2020, the U.S. EPA reclassified Coachella Valley to an extreme nonattainment area from a severe-15 nonattainment area for the 1997 8-hour ozone NAAQS. As a result, the new attainment deadline for the region is June 15, 2024, 20 years from the date of the original designation, which requires an attainment demonstration in 2023. In this attainment demonstration, ozone concentrations are simulated for the 2018 base year and the future attainment year of 2023 to demonstrate that the Coachella Valley will attain the 1997 8-hour ozone standard in 2023.

Design Values

While 3-year design values (DVs), defined as the 3-year averages of the fourth highest daily max 8-hour average ozone in each year, are used to determine attainment status of an air basin, the 5-year weighted design values are used in the modeled attainment demonstration per the U.S. EPA's guidance.[13] This is calculated based on the average of three 3-year design values. The U.S. EPA guidance[1] recommends the use of multiple year averages of design values, where appropriate, to dampen the effects of single year anomalies in the air quality trend due to factors such as adverse or favorable meteorology or radical changes in the local emissions profile. In the current attainment demonstration, three 3-year design values, 2015–2017, 2016–2018 and 2017–2019 were used. 2019 is the latest available measurement data for this Plan.

The trend of 3-year DV in Coachella Valley are presented in Figure 5-1. While the ozone air quality has improved substantially in the Coachella Valley over the past 30 years, the most recent 8-hour design value indicates that the area is still in nonattainment of the ozone NAAQSs. The design value for the 2017–2019 period is 89 parts per billion (ppb), which exceeds the 1997 8-hour ozone standard (84 ppb) by 6 percent.

Table 5-1 presents the 5-year weighted DVs used in the 2016 AQMP and updated values representing the 2015–2019 time period used for the current attainment demonstration. Compared to the 2016 AQMP DVs, the new values show progress in ozone air quality in the Coachella Valley.

[13] U.S. EPA (2018), Modeling guidance for demonstrating air quality goals for ozone, PM2.5, and regional haze. Available at: https://www3.epa.gov/ttn/scram/guidance/guide/O3-PM-RH-Modeling_Guidance-2018.pdf.

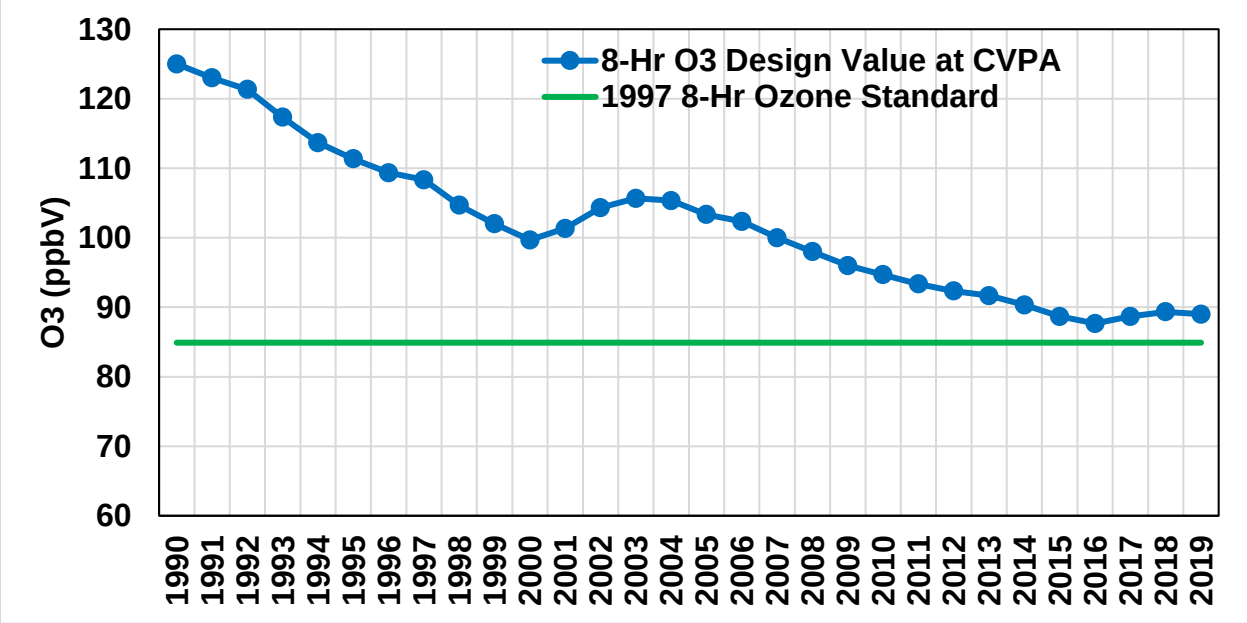

FIGURE 5-1
Eight-Hour Ozone 3-Year Design Values in Coachella Valley Planning Area During 1990–2019

TABLE 5-1
Five-Year Weighted 8-Hour Ozone Design Values (DV) (ppb)

Monitoring Site	2016 AQMP DV Weighted for the period of 2010-2014	Current DV Weighted for the period of 2015-2019
Palm Springs	92	89.3
Indio	85	84.3

Ozone Modeling

The ozone modeling employs a similar approach as described in the 2016 AQMP attainment demonstrations[14] with updates in the modeling platform, input databases, and emissions inventory. The year 2018 was used as baseline year to develop meteorological conditions and an emissions inventory that are used as an anchor year to project future emissions and design values. While the U.S. EPA's guidance recommends to use the center year of the five years (2015 to 2019) for the weighted design value as the baseline year for the modeling and emissions inventory, the guidance states that any one of the five years can be used as the baseline year. Year 2018 was chosen to avoid unusual meteorological conditions, which occurred with the high frequency of stagnant

[14] South Coast AQMD (2017), 2016 Air Quality Management Plan, Appendix V, Modeling and Attainment Demonstration. Available at:http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/appendix-v.pdf?sfvrsn=10.

dispersion conditions observed during the ozone season in 2017. In addition, choosing 2018 as baseline modeling year takes advantage of the rich measurement dataset collected during the Multiple Air Toxics Exposure Study V (MATES V), which was conducted from May 2018 to April 2019.

The Community Multiscale Air Quality (CMAQ) model, version 5.0.2, was employed to simulate the ozone season that spanned from May 1 through September 30, 2018. The latest available CMAQ model, version 5.3.1 was used as weight of evidence and discussed in Weight of Evidence section of this Chapter. Meteorological inputs were generated using the Weather Research Forecast (WRF) model version 4.0.3, and biogenic VOC emissions were estimated using MEGANv3. The simulations included 3672 consecutive hours from which daily max 8-hour average ozone concentrations were calculated.

Model Performance Evaluation

Model performance was evaluated against the measured ozone concentrations. Figure 5-2 depicts the comparison of daily maximum 8-hour ozone for Palm Springs and Indio stations. In general, the model prediction shows good agreement with measurements, with a slight tendency to underestimate the peak ozone days but with overall insignificant positive bias during the May to September ozone season. Statistics for both sites are presented in Table 5-2. The U.S. EPA guidance[15] requires that the model predictions be applied in a relative rather than absolute sense using Relative Reduction Factor (RRF). With this approach, potential biases present in model prediction are less likely transferred to future design values.

[15] U.S. EPA (2018), Modeling guidance for demonstrating air quality goals for ozone, PM2.5, and regional haze. Available at: https://www3.epa.gov/ttn/scram/guidance/guide/O3-PM-RH-Modeling_Guidance-2018.pdf

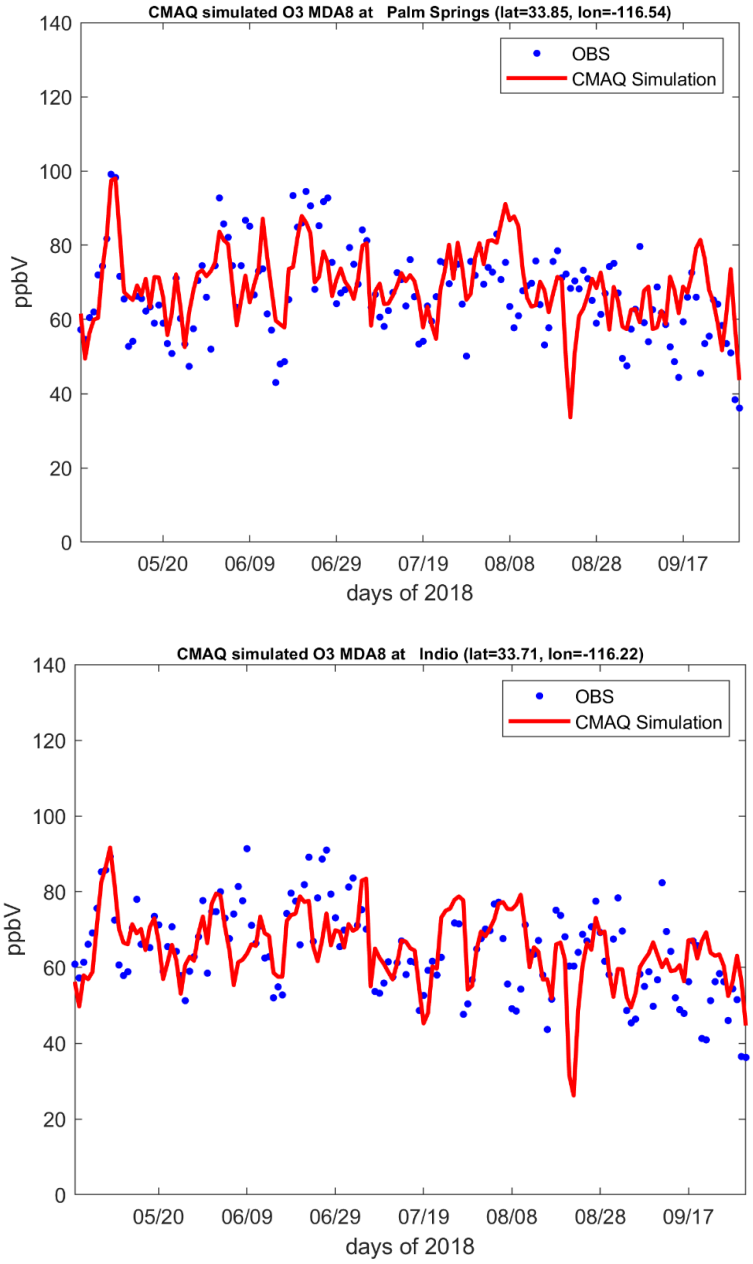

FIGURE 5-2

Time Series of Predicted vs Observed Daily Max 8-Hour Ozone at Palm Springs (Top) and Indio (Bottom)

TABLE 5-2
Statistical Performance Measures for Daily Max 8-Hour Ozone Prediction

Station	Observed Average (ppb)	Modeled Average (ppb)	R[1]	RMSE[2] (ppb)	MB[3] (ppb)	MAGE[4] (ppb)	NMB[5] (%)	NME[6] (%)
Palm Springs	66.9	69.0	0.53	10.9	2.1	8.4	3.1	12.5
Indio	64.5	65.0	0.50	10.6	0.4	7.7	0.6	11.9
Average	65.7	67.0	0.52	10.8	1.2	8.0	1.9	12.2

[1] Coefficient of correlation
[2] Root Mean Squared Error
[3] Mean Bias
[4] Mean Adjusted Gross Error
[5] Normalized Mean Bias
[6] Normalized Mean Error

Future Ozone Air Quality

The CMAQ-WRF modeling system was used to predict future design values in the 2023 attainment year. The 2023 baseline emissions reflect the impact of adopted regulations. These include both South Coast AQMD and CARB's regulations as reflected in the 2016 AQMP and CARB's EMFAC 2017 model. The 2016 AQMP used EMFAC 2014 to develop the on-road mobile source emissions. Future year design values are determined using site-specific RRFs applied to the 5-year weighted ozone design values per the U.S. EPA guidance. A set of RRFs were generated using the average of the top 10 high days in the base year, taking corresponding future year concentrations of the 10 days, and calculating the ratio of the future top 10-day concentration to the base year top 10-day concentration. The resulting RRFs were applied to the current 5-year weighted ozone design values to calculate future design values. Results presented in Table 5-3 show that the Coachella Valley is projected to attain the 1997 federal 8-hour ozone standard in 2023 without any additional controls beyond the existing regulations reflected in the 2016 AQMP for stationary and off-road mobile sources and in the EMFAC 2017 for on-road mobile sources.

A sensitivity simulation was conducted for 2022 to test the possibility of early ozone attainment in Coachella Valley. The modeling results suggested that the Coachella Valley might achieve early attainment with the existing regulations – one year ahead of the 2023 attainment year deadline. However, the year 2023 is being retained as the attainment year given uncertainties in meteorology, the emission inventory and the modeling approach.

TABLE 5-3
Eight-Hour Average 5-Year Weighted Ozone Concentrations (ppb)

Station	2018	2023
Palm Springs	89.3	83.2
Indio	84.3	79.1

Unmonitored Area Analysis

The U.S. EPA modeling guidance recommends that the attainment demonstration include a formal analysis to confirm that all modeling grid cells within a nonattainment area meet the federal standard. This analysis uses both measured design values and modelled ozone concentrations throughout the modelling domain to estimate design values at unmonitored locations. Five-year weighted design values are calculated for all monitoring stations within the modelling domain for the 2015 to 2019 period. These measured design values are then interpolated spatially using a natural-neighbor algorithm based on Voronoi tessellation. Only stations that meet the U.S. EPA's data completeness requirement for each of the 5 years are included in the analysis. The unmonitored area analysis followed the same procedure of calculating RRFs as in the attainment demonstration, except that all grid cells within the Coachella Valley were considered. The RRFs were then applied to the interpolated measurement field to calculate future year design values.

When all valid ozone design values were interpolated, they were too sparsely populated near the boundary of Coachella Valley to reasonably guide design value contours in the areas furthest from the Palm Springs and Indio stations. If only the monitors with valid design values are used in the spatial interpolation, the unmonitored area analysis produces unreasonably high ozone design concentrations in the northwestern portion of Coachella Valley. This was primarily due to higher ozone design values observed in the South Coast Air Basin (Basin), which unduly influenced the interpolated concentrations in the Coachella Valley. In light of this, a couple of modifications were implemented to minimize the impact of Basin monitors and place greater weight on monitors within or near the Coachella Valley. First, the Morongo monitor was excluded in favor of the monitor located at Banning Airport, which is operated and maintained by South Coast AQMD. Second, a pseudo-monitor was placed halfway between Banning and Big Bear, and its design value was set equal to that of the Joshua Tree – Black Rock monitor. This pseudo-monitor, marked with black dot and orange circle in Figures 5-3 and 5-4 is an arbitrary location added in the spatial interpolation with the intention to capture the expected ozone concentration in the mountains north of Banning, where no monitoring data is available. Two additional pseudo-monitors, with design values equal to that of Joshua Tree – Pinto Wells, were located east of Coachella Valley in order to guide the interpolation. Figures 5-3 and 5-4 provide the resulting 8-hour ozone design concentrations in the base and future years for all grid cells within the Coachella Valley.

High ozone levels are anticipated to persist in 2023 in the area northwest of Palm Springs, while the eastern portion of the Coachella Valley will see design concentrations drop significantly below the 0.08 ppm standard. Nevertheless, while recognizing significant uncertainty embedded in the unmonitored area analysis, the entire Coachella Valley is expected to attain the 1997 8-hour ozone standard in 2023.

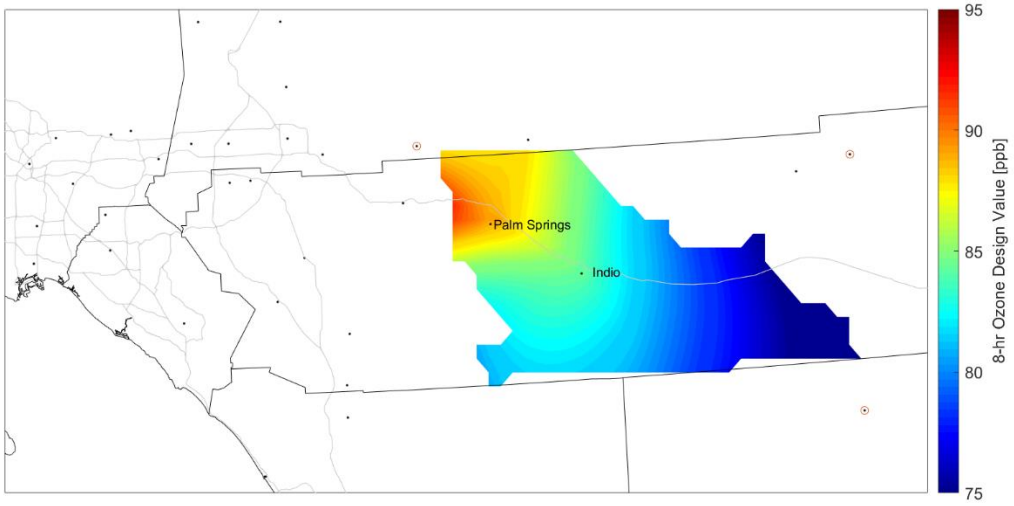

FIGURE 5-3
2018 Baseline 8-Hour Ozone Design Concentrations (ppb). Monitoring Stations with Valid Design Values and Pseudo-Stations are Denoted by Black Dots and Orange Circles, Respectively

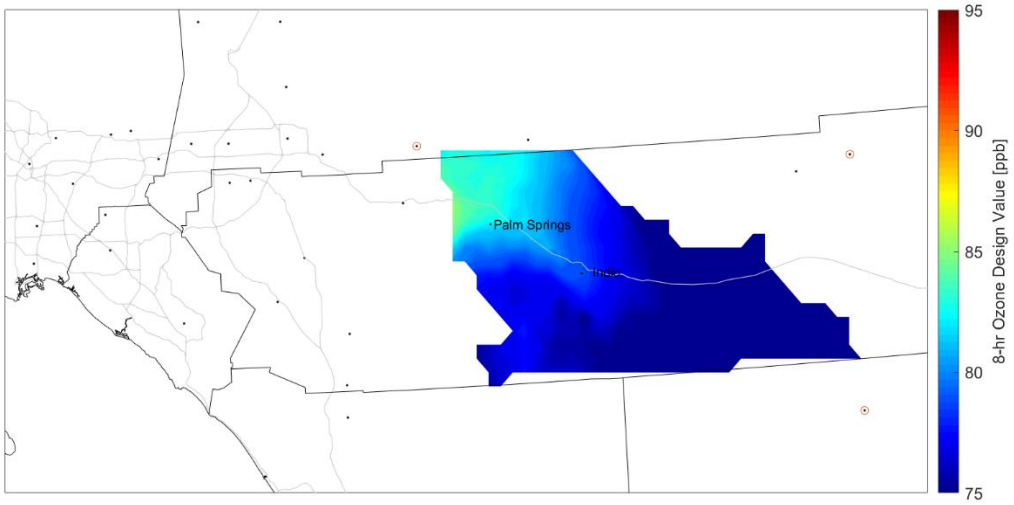

FIGURE 5-4
2023 8-Hour Ozone Design Concentrations (ppb). Monitoring Stations with Valid Design Values and Pseudo-Stations are Denoted by Black Dots and Orange Circles, Respectively

Ozone Sensitivity to NOx and VOC Emission Reductions

Ozone sensitivity to NOx and VOC emissions is analyzed using ozone isopleth plots. Isopleth plots show ozone concentrations resulting from parametrically changing NOx and VOC emissions in regular increments across the Basin. Each point in the isopleth plot shows the ozone design value as a result to setting the total basin-wide emissions denoted by NOx and VOC emissions. Namely, each point is the result of simulating the entire ozone season with specific NOx and VOC emissions, requiring large computational resources. Figure 5-5 shows the isopleth plot for the Palm Springs monitoring station, which is the design value station for the Coachella Valley. The isopleth was generated running a total of 36 simulations, spanning emissions perturbations in the 2023 baseline emissions from 0 percent to 100 percent in increments of 20 percent of both NOx and VOC emissions. Figure 5-5 was presented in Appendix V of the 2016 AQMP,[16] and while baseline emissions in this Plan differ from the ones presented in the 2016 AQMP due to emission updates, the fundamental chemistry of ozone sensitivity has not changed. Hence, the overall ozone sensitivity should remain similar to Figure 5-5. The ozone isopleth for the Indio monitoring station, which can be found in Appendix V of the 2016 AQMP, shows a similar shape indicating similar sensitivity of ozone to changes in precursor emissions. As shown in Figure 5-5, ozone concentration in Palm Springs is much more sensitive to changes in NOx emissions than to changes in VOC emissions, and indicates that NOx emission reduction is key for ozone attainment in the Coachella Valley.

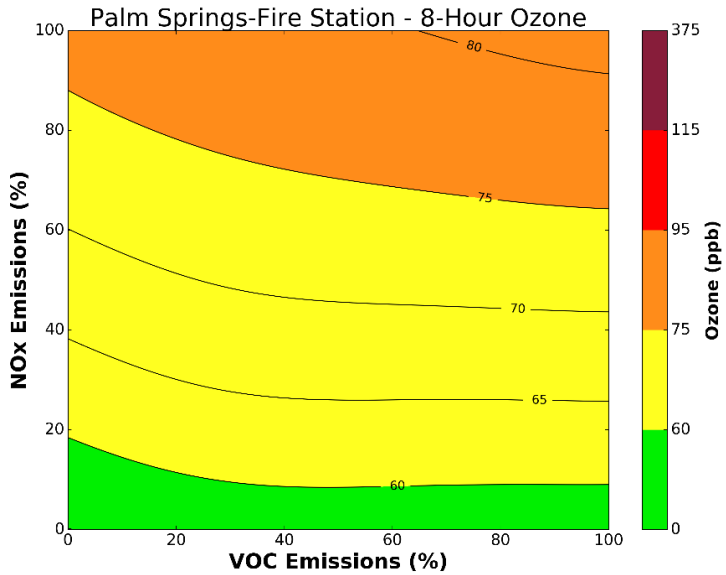

FIGURE 5-5
2023 8-Hour Ozone Isopleth for Palm Springs

[16] South Coast AQMD (2017), 2016 Air Quality Management Plan, Appendix V, Modeling and Attainment Demonstration. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/appendix-v.pdf?sfvrsn=10.

Weight of Evidence

The ozone concentrations in the Coachella Valley have significantly decreased as shown by trends of the fourth highest 8-hr ozone concentrations at the monitoring stations in the area (Figure 5-1). Even though there was an increase in 2017 and 2018, ozone concentrations have experienced an overall downward trend over the last three decades, and there is confidence that this downward trend will continue, and the area will attain the ozone standard by the 2023 deadline. In fact, a sensitivity simulation using 2022 baseline emissions shows earlier ozone attainment in Coachella Valley in 2022. However, considering the potential uncertainties in meteorology, emission inventory and modeling approach, the year 2023 is retained as the attainment year. Moreover, additional emission controls in the South Coast Air Basin that result from the implementation of the recently adopted regulations since the 2016 AQMP will further ensure the attainment of the Coachella Valley.[17]

Because emission projections in this Plan are consistent with the modeling set-up of the 2016 AQMP, the attainment demonstration presented here is also based on the same CMAQ version (version 5.0.2). The latest version of CMAQ (version 5.3.1, released in December 2019) includes several improvements with respect to version 5.0.2. Sensitivity runs using the latest version of CMAQ were conducted to determine the effect of model versions on attainment demonstration results. CMAQ 5.3.1 produced very similar results compared with the ones obtained using CMAQ 5.0.2. Model performance with the latest version is comparable to the one presented in this report, and future design values have a minor difference, which does not change the results in the attainment demonstration. With the latest version, the Coachella Valley is also expected to attain the 8-hour ozone standard which provides additional weight of evidence for the modeling of the attainment demonstration.

Conclusion

Recent air quality trends and the updated modeling analysis in this Plan indicate that the Coachella Valley is on track to attain the ozone air quality standard by the new attainment year of 2023 based on the ongoing implementation of already adopted regulations for stationary and on-road/off-road mobile sources in the South Coast Air Basin and the Coachella Valley. The Coachella Valley located downwind of the South Coast Air Basin will continue to benefit from the rigorous control programs and associated emission reductions in the South Coast Air Basin. Regional modeling results indicate that reducing NOx emissions in the Basin is the most effective way to improve ozone air quality in Coachella Valley. The continued implementation of the 2016 AQMP control measures to attain the 1997 and 2008 ozone NAAQS in the South Coast air basin (including recently adopted regulations since the 2016 AQMP) will continue to bring substantial ozone air quality benefits to the Coachella Valley.

[17] South Coast AQMD (2017), 2016 Air Quality Management Plan, Appendix III, Base and future year emission inventory. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/appendix-iii.pdf?sfvrsn=6.

6. OTHER FEDERAL CLEAN AIR ACT REQUIREMENTS

Additional Clean Air Act (CAA) requirements were triggered by the Coachella Valley's recent reclassification from Severe to Extreme nonattainment area for the 1997 8-hour ozone standard. The earlier chapters (Chapters 3–5) fulfill the requirements related to emissions inventory, control strategy, and attainment demonstration. This chapter addresses the other CAA requirements for Coachella Valley as an Extreme nonattainment area.

Reasonable Further Progress

The CAA requires that SIPs for most nonattainment areas demonstrate reasonable further progress (RFP) towards attainment through emission reductions phased in from the time of the SIP submission until the attainment date. The RFP requirements in the CAA are intended to ensure that there are sufficient emission reductions in each nonattainment area to attain the NAAQS by the applicable attainment date. 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, the U.S. EPA guidance states that the plan should rely only on emission reductions achieved from sources within the nonattainment area. Section 172(c)(2) of the CAA requires that nonattainment area plans show ongoing annual incremental emissions reductions toward attainment, which is commonly expressed in terms of benchmark emissions levels or air quality targets to be achieved by certain interim milestone years.

Clean Air Act Subpart 2 Sections 182 (b)(1) and 182(c)(2)(B) contain specific emission reduction targets to ensure that each ozone nonattainment area provides for sufficient precursor emission reductions to attain the ozone NAAQS. Section 182(b)(1)(A) requires that each Moderate or above area provide for VOC reductions of at least 15 percent from baseline emissions within six years after November 15, 1990. Furthermore, Section 182(c)(2)(B) requires that Serious and above areas provide VOC and/or NOx reductions of an additional 3 percent per year starting at the end of the baseline year and out to their attainment year. The 2007 AQMP, the initial SIP designed to address the 1997 8-hour ozone standard, included the RFP demonstration for the Coachella Valley. It showed that from 2002 to 2008, a 15 percent VOC-only reduction was achieved through reductions in baseline emissions. It also provided for VOC and/or NOx reductions of 3 percent per year from the 2002 baseline year averaged over each consecutive three-year period beginning in 2008 until the Coachella Valley's then attainment year of 2018.

Given Coachella Valley's new attainment date of June 2024 as an Extreme nonattainment area, the RFP analysis continues from the last RFP milestone year of 2017 to the new attainment year of 2023. The baseline year used to evaluate the RFP emissions reduction requirement was 2002, which was the baseline year used in the 2007 AQMP. For this plan, the 2002 emissions were estimated (backcasted) with the methodology described in Chapter 3. The 2002 summer planning emissions for Coachella Valley are 22.85 and 54.24 tpd for VOC and NOx, respectively. As such, the 3 percent annual reduction required is 0.686 tpd. Since the 2007 AQMP already addressed the RFP requirements up to 2017, this RFP demonstration will include the RFP analysis for the milestone year of 2020 and the attainment year of 2023.

Tables 6-1 and 6-2 summarize the RFP calculations for VOC and NOx, respectively. For each of the milestone year, the baseline emission levels are compared to the CAA target levels. The required progress (3 percent reduction per year) is met based on reductions from existing regulatory programs (baseline emissions) using a combination of VOC and NOx reductions. For the milestone years 2020 and the attainment year 2023, the baseline VOC emissions are higher than the target (Figure 6-1), and NOx baseline reductions are used to compensate the VOC shortfall (Table 6-2). CAA Section 182(c)(2)(C) allows NOx reductions to substitute VOC shortfall for RFP target. This RFP demonstration shows compliance with RFP requirements by combining VOC and NOx reductions. A more detailed breakdown of the emission inventory by major source category can be found in Appendix I of this Plan.

TABLE 6-1

Summary of Reasonable Further Progress Calculation – VOC

ROW	CALCULATION STEP [a]	2002[b]	2020	2023[c]
1	Baseline VOC Emissions (tpd)	22.85	14.30	14.44
2	Required Percent Reduction from Base Year (%)		51	60
3	Target VOC Level (tpd)		11.2	9.1
4	Cumulative Milestone Year Shortfall (tpd)		3.1	5.3
5	Cumulative Shortfall in VOC (%)		13.6	37.1
6	Incremental Milestone Year Shortfall (%)		13.6	23.5

[a] Units are in tons per day (summer planning) unless otherwise noted
[b] Base Year (2002)
[c] Attainment Year

Row Description
Row 1: Baseline emissions taking into account existing rules and projected growth
Row 2: Required 15% VOC reduction six years after base year; and 3% per year thereafter (total VOC reductions from 2002 baseline year)
Row 3: [(1 – Row 2/100) × (Row 1 Base Year)]
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) / (Row 1 Base Year) × 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

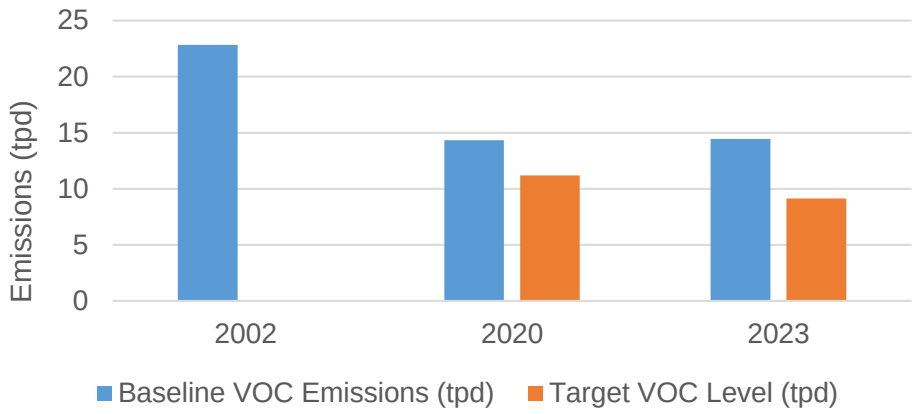

FIGURE 6-1
Reasonable Further Progress – VOC

TABLE 6-2
Summary of Reasonable Further Progress Calculation – NOx

Row	CALCULATION STEP [a]	2002[b]	2020	2023[c]
1	Baseline NOx Emissions (tpd)	54.24	15.77	12.33
2	Reductions in NOx Emissions since Base Year (tpd)		38.47	41.91
3	Percent Reductions in NOx Emissions since Base Year (%)		70.9	77.3
4	Contingency plus Previous NOx Substitution (%)		3	16.6
5	Percent Available for NOx Substitution (%)		67.9	60.7
6	Incremental Milestone Year VOC Shortfall (%)		13.6	23.5
7	Percent Surplus Reduction (%)		54.3	37.2
8	RFP Compliance		Yes	Yes
9	Contingency Compliance		Yes	Yes

[a] Units are in tons per day (summer planning) unless otherwise noted
[b] Base Year (2002)
[c] Attainment Year

Row Description

Row 1: Baseline emissions taking into account existing rules and projected growth

Row 2: Reductions achieved in Baseline: [(Row 1 Base Year) – (Row 1 Milestone Year)]

Row 3: % Reductions achieved since Base Year: [(Row 2) / (Row 1 Base Year)] × 100

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 6-1

Row 5: [(Row 3) – (Row 4)]

Row 6: Incremental milestone year VOC shortfall from Table 6-1

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

Milestones for South Coast AQMD Stationary Source Regulations

Baseline emissions, as shown in Tables 6-1 and 6-2, incorporate emission reductions achieved from control measures that are already adopted as regulations. For example, the 2020 baseline emission is the projection from 2018 and it incorporates population and economic growth as well as all adopted control measures that will be implemented (partially or fully) by December 31, 2020. Table 6-3 provides a list of the South Coast AQMD's adopted rules and regulations for stationary sources that are scheduled to be implemented beyond 2018, accounting for the reductions in the baseline emissions of the future milestone/attainment years.

TABLE 6-3

Implementation Schedule of South Coast AQMD Adopted Rules and Regulations for Reasonable Further Progress per Milestone/Attainment Year

	2020 Milestone Year	2023 Attainment Year
NOx	Rule 1146.2 [a]	
	Rule 1147 [b]	Rule 1147 [b]
	RECLAIM Rule 2002 [c]	RECLAIM Rule 2002 [c]
	Rule 1111 [d]	Rule 1111[d]

[a] Full implementation achieved in 2020
[b] Full implementation achieved in 2023
[c] Full implementation achieved in 2022
[d] Reductions achieved annually with full implementation in 2035

Milestones for State Mobile Source Regulations

The RFP demonstration in the Coachella Valley Extreme Area Plan relies, in part, on NOx reductions from California mobile source regulations. Specifically, the following two mobile source regulations are key for reducing emissions in future milestone years.

- Milestone 1. Implementation of the On-Road Heavy-Duty Diesel Vehicles Regulation in 2020 through 2023
- Milestone 2. Implementation of the In-Use Off-Road Diesel-Fueled Fleets Regulation in 2020 through 2023

RFP Demonstration for Milestone Year 2020

This section describes the progress of meeting the 2020 milestone and verifies that the emissions reductions needed to demonstrate RFP for 2020 have been achieved, and that ongoing progress is being made to meet the 1997 8-hour ozone standard by 2023.

Milestones for South Coast AQMD Stationary Source Regulations

As demonstrated in Tables 6-1 and 6-2, baseline inventory (existing regulatory programs) is used to meet the RFP requirement. The 2020 baseline inventory is 14.3 and 15.8 tpd for VOC and NOx respectively. Four South Coast AQMD rules, namely Rule 1146.2, Rule 1147, RECLAIM (Reg

XX), and Rule 1111 impact NOx baseline emissions in 2020 (Table 6-3). Two of these four rules (Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters and RECLAIM) have been implemented as anticipated, and the emission reductions associated with Rule 1146.2 and RECLAIM have been achieved for the milestone year of 2020. It should be noted that Rule 1146.2 was amended in December 2018 as part of the RECLAIM transition. However, under this amendment, the NOx emission limit remains unchanged, and the amendment has no impacts on the 2020 baseline emissions. A technology assessment will be conducted to evaluate the feasibility of lowering the NOx concentration limit for units regulated under Rule 1146.2 no later than January 1, 2022.

The other two rules (Rule 1111 and Rule 1147) were amended after the submittal of the 2016 AQMP, resulting in minor changes to the baseline emissions that have not yet been reflected in the current emission inventory. They are discussed below.

- Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces

Rule 1111 was amended three times after the 2016 AQMP submittal. The amendment on March 2, 2018 increases and extends the mitigation fee compliance option until 2021; provides an exemption from the mitigation fee increase for units already committed in a contractual agreement; and prevents the installation of propane furnaces in the South Coast AQMD that are capable of being operated on natural gas, without proper certification. The March 2018 amendment results in an emission reduction delay of up to 0.29 tpd in 2023. Rule 1111 was amended again in July 2018 to add a Consumer Notification Requirement on distributed or published informative materials. There are no NOx emission impacts related to this amendment. In December 2019, Rule 1111 was amended to provide a limited exemption to manufacture, distribute, sell, and install low NOx furnaces (40 ng/J) in higher altitudes until October 1, 2020. It is estimated that this amendment will result in a minimal emission reduction delay (< 0.001 tpd).

- Rule 1147 – NOx Reductions from Miscellaneous Sources

Rule 1147 was amended after the 2016 AQMP submittal and resulted in minor changes to the baseline emissions that were not reflected in the current emission inventory. Rule 1147 was amended in July 2017 to reflect the recommendations made in the Final Rule 1147 Technology Assessment and also to allow in-use equipment with NOx emissions less than one pound per day to defer compliance. The 2017 amendment also increased the NOx emission limit for certain equipment categories and exempted new and existing equipment rated at less than 325,000 Btu per hour. The 2017 amendment is expected to result in a NOx emissions reduction delay of up to 0.9 tpd. However, the emission reductions began to be recaptured in 2017 as the existing units are

regularly replaced and upgraded over time, leaving less than 0.03 tpd of forgone NOx emissions reductions associated with the exemption for equipment less than 325,000 Btu per hour.

Overall, the amendments of Rule 1111 and 1147 resulted in small amounts of delayed/forgone emission reductions (up to 1.2 tpd of NOx). However, given that the 2020 baseline emissions are significantly below the RFP targets for NOx (Table 6-2, surplus NOx reduction is 58.5 percent), the impacts of the amendments will not interfere with the RFP demonstration in 2020 and the attainment of the standard by 2023.

Milestones for CARB's Mobile Source Regulations

CARB is reporting on the implementation of the *On-Road Heavy-Duty Diesel Vehicles Regulation* (Truck and Bus Regulation) and implementation of *In-Use Off-Road Diesel-Fueled Fleets Regulation* (Off-Road Regulation).

Milestone 1. Implementation of the On-Road Heavy-Duty Diesel Vehicles Regulation through 2020

CARB implementation of the Truck and Bus Regulation provided NOx emission benefits in 2020. The 2010 model-year engine requirement in the Truck and Bus Regulation provides NOx reductions beginning in 2015 and continuing through 2020 (Table 6-4).

TABLE 6-4

Truck and Bus Regulation Implementation through 2020[18]

2010 Engine Deadline	**Vehicle Weight**	**Required Engine Turnover**
January 1, 2015	Heavier Trucks and Buses	Pre-1994
	Light-Duty Trucks and Buses	1995 and older
January 1, 2016	Heavier Trucks and Buses	1994-1995
	Light-Duty Trucks and Buses	1996
January 1, 2017	Heavier Trucks and Buses	1997
	Light-Duty Trucks and Buses	1997
January 1, 2018	Light-Duty Trucks and Buses	1998
January 1, 2019	Light-Duty Trucks and Buses	1999
January 1, 2020	Heavier Trucks and Buses	2000 & older
	Light-Duty Trucks and Buses	2003 & older

[18] Truck and Bus Regulation: https://www.arb.ca.gov/regact/2014/truckbus14/tb14appa.pdf.

Milestone 2. Implementation of the In-Use Off-Road Diesel-Fueled Fleets Regulation through 2020

The Off-Road Regulation requires owners to modernize their fleets by replacing older engines or vehicles with newer, cleaner models; retiring older vehicles or using them less often; or by applying retrofit exhaust controls. Beginning on July 1, 2014 the Off-Road Regulation[19] required Off-Road diesel-fueled fleets to meet increasingly stringent fleet average emission target rates based on the size of the fleet's horsepower (hp) (Table 6-5).

TABLE 6-5
Off-Road Regulation Implemented through 2020

Implementation Deadline	Fleet Size (total fleet hp)	Implementation Requirement
2014–2020	Large (> 5000)	Met Annual Fleet Average Target
2017–2020	Medium (> 2500)	Met Annual Fleet Average Target
2019–2020	Small (< 2500)	Met Annual Fleet Average Target

CARB met the 2020 quantitative milestones. CARB's mobile source program will continue to provide emission reductions beyond 2020, ultimately contributing to attainment of the standard in 2023.

Conclusion

Overall, for the 2020 milestone year, RFP is achieved based on baseline emissions, which incorporate emission reductions achieved from control measures that are already adopted, as well as growth factors projected for each sector. South Coast AQMD and CARB have verified that the emissions reductions needed to demonstrate RFP for 2020 milestone year have been achieved, and that ongoing progress is being made to meet the 1997 8-hour ozone standard by 2023.

Supplemental RACT Demonstration

The CAA requires that areas classified as moderate nonattainment and higher must develop and submit a demonstration that their current air pollution regulations and emissions sources fulfill the Reasonably Available Control Technology (RACT) requirements. The threshold for defining stationary sources as major sources differs between the Severe and Extreme nonattainment areas. The major source threshold for Severe nonattainment areas is 25 tons per year (tpy) of VOC or NOx, whereas the threshold is 10 tpy for Extreme nonattainment areas. With reclassification of the Coachella Valley to an Extreme nonattainment area, the major stationary source threshold is lowered from 25 tpy to 10 tpy of VOC and NOx emissions. Pursuant to the requirements of CAA Section 182(e), the South Coast AQMD staff conducted an evaluation to demonstrate that all major

[19] Regulation for In-Use Off-Road Diesel-Fueled Fleets. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/msprog/ordiesel/documents/finalregorder-dec2011.pdf.

stationary sources emitting 10 or more tpy of VOC or NOx emissions meet RACT in Coachella Valley.

South Coast AQMD staff has developed RACT demonstrations with respect to the 1997 8-hour ozone standard in 2006, and subsequently in 2014 with respect to the 2008 8-hour ozone standard for both South Coast Air Basin and Coachella Valley. The 2014 RACT Demonstration provided a comprehensive assessment of the South Coast AQMD's rules and regulations as part of the 2016 AQMP RACM analysis and control measure development. In 2017, the U.S. EPA fully approved the 2014 RACT Demonstration.[20] In 2020, a RACT Demonstration was conducted for Coachella Valley based on its Severe nonattainment classification of the 2015 8-hour ozone standard (herein refers as 2020 RACT[21]). The 2020 RACT Demonstration addressed both Control Techniques Guidelines (CTG) and non-CTG major[22] sources in the Coachella Valley emitting the 25 or more tpy of VOC and NOx. The 2020 RACT Demonstration evaluated over 48 of the U.S. EPA's CTG sources as well as 70 rules, regulations or guidelines adopted from March 2014 to February 2020 by other air districts, state air agencies, and the U.S. EPA. These rules and regulations were compared with the corresponding South Coast AQMD rules and regulations. The 2020 RACT Demonstration concluded that, with the exception of Rule 1115 (Motor Vehicle Assembly Line Coating Operations), South Coast AQMD's current rules for the applicable sources of VOC and NOx meet or exceed the federal RACT requirements. South Coast AQMD Rule 1115 is currently not as stringent as the U.S. EPA's CTG (Automobile and Light-Duty Truck Assembly Coatings) for several coatings and products for facilities emitting greater than 15 pounds per day. In addition, the VOC emission limits in Rule 1115 for several coating types are less stringent than those in the corresponding Antelope Valley Air Quality Management District and San Joaquin Valley Air Pollution Control District's rules. Therefore, South Coast AQMD has committed to amend Rule 1115 to address these deficiencies. It should be noted that all facilities subject to Rule 1115 and the corresponding CTG are located in the South Coast Air Basin and none are within Coachella Valley. Thus, all the applicable sources in Coachella Valley were determined to be subject to RACT level of control in the 2020 RACT analysis. The 2020 RACT Demonstration was submitted to the U.S. EPA for inclusion into SIP in August 2020.

Since the 2020 RACT Demonstration covered facilities emitting 25 or more tpy of VOC and NOx emissions and it included an evaluation of rules and regulations up to February 2020, a supplemental RACT analysis is conducted here to address the 1997 8-hour ozone NAAQS Extreme nonattainment area requirement for Coachella Valley building upon the 2020 RACT Demonstration. The supplemental RACT Demonstration provides updates for (1) RACT analysis

[20] 82 FR 43850 (October 20, 2017).
[21] Draft Final Staff Report for 2015 8-Hour Ozone Standard Reasonably Available Control Technology (RACT) Demonstration, South Coast AQMD, May 2020. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/ract-draft-final-staff-report.pdf?sfvrsn=23.
[22] Major sources that are not covered by the U.S. EPA CTGs are called non-CTG major sources.

for facilities with Potential to Emit (PTE) emissions between 10 and 25 tpy of VOC or NOx and (2) rules and regulations adopted in other air agencies from March 2020 to June 2020.

To identify the major stationary source facilities of VOC and NOx, a search was conducted of the South Coast AQMD's permit database. Two facilities, namely Armtec Defense Production Co. and Eisenhower Medical Center, were found to have PTE emissions between 10 and 25 tpy of NOx or VOC. Armtec Defense Production Co. is subject to and compliant with the VOC and NOx emission limits of South Coast AQMD Rules 442 – Usage of Solvents (amended December 15, 2000), 1171 – Solvent Cleaning Operations (amended May 1, 2009), and 1147 – NOx Reductions from Miscellaneous Sources (amended July 7, 2017). Eisenhower Medical Center is subject to and compliant with NOx emissions requirements in South Coast AQMD Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines (amended November 1, 2019) and Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters (amended December 7, 2018). Based on the 2014 and 2020 RACT analyses, these rules represent RACT level of controls for VOC and NOx. Thus, these two major source facilities are subject to RACT level of control.

Building upon the 2020 RACT analysis which covers updates up to February 2020, a detailed evaluation was conducted between newly adopted or amended rules by other ozone nonattainment air districts from March 2020 to June 2020 and the applicable South Coast AQMD's VOC and NOx rules. Table 6-6 lists the five VOC rules adopted by other air districts between March and June 2020. Table 6-7 summarizes the evaluation of South Coast AQMD rules for RACT. Overall, the applicable South Coast AQMD VOC rules meet RACT and are as stringent as or more stringent than other districts' rules. No NOx rules were adopted or amended by other air districts and agencies from March 2020 to June 2020 and thus, no further evaluation was conducted against South Coast AQMD's NOx rules beyond those already incorporated in the 2014 and 2020 RACT Demonstrations.

TABLE 6-6
Recently Adopted (March 2020 to June 2020) Rules and Regulations Evaluated for Supplemental RACT Demonstration

AGENCY	RULE NUMBER (TITLE)
Antelope Valley Air Quality Management District	Rule 1107 (Coating of Metal Parts and Products)
Mojave Desert Air Quality Management District	Rule 1115 (Metal Parts & Products Coating Operations); Rule 1118 (Aerospace Assembly, Rework and Component Manufacturing Operations); Rule 1168 (Adhesive and Sealant Applications)
San Joaquin Valley Air Pollution Control District	Rule 4601 (Architectural Coatings)

TABLE 6-7
Evaluation of Applicable South Coast AQMD Rules and Regulations

RULE NO	RULE TITLE	CURRENT RULE REQUIREMENTS	OTHER AGENCIES' RULES AND FEDERAL GUIDANCE THAT ARE MORE STRINGENT	RACT EVALUATION
1107	Coating of Metal Parts and Products (Amended 2/7/20)	Coating-specific emission limits from 2.3–3.5 lbs/gal. In lieu of complying with specific emission limits, operators can use air pollution control system with at least 95% control efficiency (or 5 ppmv outlet) and 90% capture efficiency. Solvent cleaning operations must comply with Rule 1171.1	Antelope Valley Rule 1107 (Amended 4/21/20) generally has the similar coating-specific VOC limits and requirements as in South Coast Rule 1107, except for the following category: At least 95% reduction efficiency (or 50 ppmv outlet from air pollution control device) and 90% collection efficiency are required. Mojave Desert Rule 1115 (Amended 6/8/20) generally has similar coating-specific limits as in South Coast Rule 1107 such as coating limits (2.3–4.2 lbs/gal) for other new categories such as Drum and Chemical Agent Resistance. At least a 90% combined capture and control system efficiency is required.	Rule 1107 meets or exceeds EPA CTG requirements. For almost all categories, South Coast Rule 1107 is as stringent as or more stringent requirements than the other Districts' rules and provides RACT level of control for this source category.
1113	Architectural Coatings (Amended 2/5/16)	The VOC content for Industrial Maintenance Coatings for color indicating safety coatings limit of 480 g/L, which is created to address hydrogen fluoride indicating paint use at refineries.	San Joaquin Valley Rule 4601 (Amended 4/16/20) limits the VOC contents for Industrial Maintenance Coating to 250 g/L. Sacramento Metro Reg 4 Rule 442 limits the VOC contents for Industrial Maintenance Coating to 250 g/L.	Rule 1113 allows refineries that use hydrofluoric acid to use the higher VOC coatings on color indicating safety coatings provided that they are in one-liter containers or smaller. For San Joaquin Valley APCD and Sacramento Metro AQMD, there is no such refinery source. Overall, Rule 1113 requirements are as stringent as or more stringent than those in other districts for the applicable sources, and Rule 1113 meets RACT.

TABLE 6-7 (Concluded)
Evaluation of Applicable South Coast AQMD Rules and Regulations

RULE NO	RULE TITLE	CURRENT RULE REQUIREMENTS	OTHER AGENCIES' RULES AND FEDERAL GUIDANCE THAT ARE MORE STRINGENT	RACT EVALUATION
1124	Aerospace Assembly and Component Manufacturing Operations (Amended 9/21/01)	Coating-specific emission limits from 160–1,000 g/L. Specific high transfer coating applications (e.g., HVLP spray). In lieu of complying with specific emission limits, operator can use air pollution control system with at least 95% control efficiency for 50 ppm outlet and 90% capture efficiency. Solvent cleaning operations must comply with Rule 1171.	Mojave Desert Rule 1118 (Amended 6/8/20) has the following limits that are more stringent than those in Rule 1124: • Clear Topcoat (520 vs 420 g/L) • Other Topcoat (420 vs 340 g/L) • High-Temperature Coating (850 vs 720 g/L) • Rain Erosion-Resistant Coating (800 vs 600 g/L) • Non-Autoclavable Structural Adhesive (850 vs 700 g/L)	Rule 1124 meets or exceeds the CTG requirements. The categories with lower limits in Mojave Desert are low usage categories. South Coast AQMD Rule 1124 varies in stringency when compared to the other District's requirements. For almost all categories, Rule 1124 is as stringent as the other District's rule, and provides RACT level of control for this source category.
1168	Adhesive and Sealant Application (Amended 10/6/17)	VOC content limits for • Select Architectural Adhesives: 50–250 g/L with future limits of 20–50 g/L in 2023. • Plastic Welding Cements: 490–510 g/L with future limits of 400–425 g/L in 2023. • Select Roofing Sealants: 300–450 g/L with future limits of 250 g/L in 2023.	n/a*	Meets RACT.

* There are no analogous requirements in other air agencies that are more stringent than the South Coast AQMD rule being evaluated.

RACM Demonstration

As an Extreme nonattainment area, a Reasonably Available Control Measures (RACM) Demonstration is required as part of the attainment plan. The CAA, Section 172(c)(1), sets the overall framework for the RACM analysis. The CAA requires the nonattainment air districts to:

> *"provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology) and shall provide for attainment of the national primary ambient air quality standards."*

RACM is applicable to a wide range of sources (stationary, area, and mobile), and should include measures that are technologically and economically feasible. RACM should also include RACT, which applies to stationary sources and represents the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economical feasibility. [23] The U.S. EPA's long-standing interpretation of the RACM provision is that the nonattainment air districts should consider all available control measures, including those being implemented in other areas, and that a state must adopt measures for an area only if those measures are economically and technologically feasible and will advance the attainment date or are necessary for reasonable further progress (RFP).

The purpose of the RACM analysis is to determine whether any feasible measures are available for inclusion in the 1997 8-hour ozone NAAQS Extreme Area Plan for Coachella Valley. As a component of the 2016 AQMP, South Coast AQMD conducted a comprehensive RACM/RACT analysis for the 2008 8-hour ozone standard. A 7-step analysis was conducted to identify potential control measures from various sources including an Air Quality Technology Symposium, preceding RACT/Best Available Control Technology (BACT) analysis, the U.S. EPA Technical Support Documents, other air districts' control measures, control measures beyond RACM in the 2012 AQMP, the U.S. EPA Menu of Control Measures, and the U.S. EPA guidance documents. The potential control measures are then evaluated in the Control Measure Assessment section for feasibility. The RACM/RACT analysis provides a comparison of the South Coast AQMD rules and regulations governing precursor emission limits to those established by the U.S. EPA guidance and representative agencies within California and elsewhere throughout the U.S. The 2016 AQMP RACM Demonstration was approved by the U.S. EPA in 2017.[24] In addition to the 2016 AQMP RACM/RACT analysis, as mentioned earlier, a RACT Demonstration was recently conducted for the 2015 8-hour ozone NAAQS. The 2020 RACT Demonstration was submitted to the U.S. EPA for inclusion into the SIP in August 2020. Additional RACT analysis for the 1997 8-hour ozone NAAQS for Extreme nonattainment area has also been conducted, presented earlier in this chapter.

[23] 44 FR 53762 (September 17, 1979).
[24] 82 FR 26854 (June 12, 2017).

This Coachella Valley Extreme Area Plan RACM analysis builds upon the 2016 AQMP RACM Demonstration and the 2020 RACT Demonstration to review and where applicable update the South Coast AQMD control measures to advance emissions controls to meet the current state of the science.

The RACM evaluation is broken down into the following emission source categories:

I. South Coast AQMD Stationary and Area Sources
II. CARB Mobile and Area sources
III. Transportation Control Strategies and Transportation Control Measures

I. South Coast AQMD Stationary and Area Sources

As part of the 2020 RACT Demonstration for the 2015 8-hour ozone NAAQS, as well as the Supplemental RACT Demonstration section presented earlier in this chapter, the evaluation of feasible measures has already been conducted for stationary sources. As such, this section focuses on the area sources. To identify emission sources with significant VOC or NOx emissions, the 2018 baseline planning emission inventory, segregated by the 3-digit Equipment Identification Code (EIC), was used. As presented in Table 6-8, the area sources account for 43 percent of VOC emissions and 3 percent of NOx emissions in the Coachella Valley. South Coast AQMD rules and regulations applicable to these area sources are also listed in Table 6-3. These rules and regulations had been evaluated as part of the 2012 AQMP RACM, 2016 AQMP RACM, and 2020 RACT Demonstrations. To capture all potential emission reduction opportunities for area sources, a supplemental RACM evaluation has also been conducted for this Plan by evaluating the rules and regulations adopted from February 2016 to August 2020 in other air quality agencies in ozone nonattainment areas. These air districts and state agencies are selected based on the severity of the ozone pollution, and they are listed below:

- Sacramento Metropolitan Air Quality Management District (Sacramento Metro AQMD)
- San Joaquin Valley Air Pollution Control District (San Joaquin Valley APCD)
- Ventura County Air Pollution Control District (Ventura County APCD)
- Antelope Valley Air Quality Management District (Antelope Valley AQMD)
- Mojave Desert Air Quality Management District (Mojave Desert AQMD)
- Delaware Natural Resources and Environmental Control
- Texas Commission on Environmental Quality

The recently adopted rules and regulations in other air agencies, listed in Table 6-9, represent control measures that are technologically feasible and cost effective which have been implemented in other ozone nonattainment areas.

TABLE 6-8

2018 Area Source Emissions Inventory, Tons per Day

EIC	Description	VOC	NOx	South Coast AQMD Rules and Regulations
060	Service and Commercial	0.12	0.3	Rule 1110.2 (Emissions from Gaseous - and Liquid-Fueled Engines); Rule 1146 (Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters); Rule 1146.1 (Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters); Rule 1146.2 (Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters)
199	Waste Disposal	0.96	0.00	Rule 1133.3 (Emission Reductions from Greenwaste Composting Operations)
220	Degreasing	0.26	0.00	Rule 1122 (Solvent Degreasers)
230	Coatings and Related Process Solvents	1.28	0.00	Rule 442 (Usage of Solvents); Rule 1104 (Wood Flat Stock Coating Operations); Rule 1106 (Marine and Pleasure Craft Coatings); Rule 1106.1 (Pleasure Craft Coating Operations); Rule 1107 (Coating of Metal Parts and Products); Rule 1125 (Metal Container, Closure, and Coil Coating Operations); Rule 1126 (Magnet Wire Coating Operations); Rule 1128 (Paper, Fabric, and Film Coating Operations); Rule 1145 (Plastic, Rubber, Leather, and Glass Coatings); Rule 1151 (Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations); Rule 1171 (Solvent Cleaning Operations)
250	Sealants and Adhesives	0.23	0.00	Rule 1168 (Adhesive and Sealant Applications)
330	Petroleum Marketing	0.34	0.00	Rule 461 (Gasoline Transfer and Dispensing); Rule 462 (Organic Liquid Loading); Rule 463 (Organic Liquid Storage); Rule 1173 (Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants); Rule 1177 (Liquefied Petroleum Gas Transfer and Dispensing); Rule 1178 (Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities)
510	Consumer Products	2.58	0.00	Rule 1129 (Aerosol Coatings); Rule 1143 (Consumer Paint Thinners and Multi-Purpose Solvents)
520	Architectural Coatings and Related Solvent	0.36	0.00	Rule 1113 (Architectural Coatings)
610	Residential Fuel Combustion	0.09	0.26	Rule 445 (Wood-Burning Devices); Rule 1111 (Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces); Rule 1121 (Control of Nitrogen Oxides from Residential Type, Natural-Gas-Fired Water Heaters)
	Total Sources	**14.38**	**18.33**	

TABLE 6-9

Rules and Regulations Adopted from February 2016 to August 2020 for VOC and NOx Area Sources in Selected Air Agencies

AGENCY	RULE NUMBER (TITLE)
Sacramento Metro AQMD	Rule 414 (Water Heaters, Boilers and Process Heaters Rated Less Than 1,000,000 Btu Per Hour); Rule 468 (Surface Coating of Plastic Parts and Products)
San Joaquin Valley APCD	Rule 4307 (Boilers, Steam Generators, and Process Heaters); Rule 4601 (Architectural Coatings); Rule 4692 (Commercial Charbroiling); Rule 4905 (Natural Gas-Fired, Fan-Type Central Furnaces)
Ventura County APCD	Rule 7420 (Adhesives and Sealants)
Antelope Valley AQMD	Rule 1107 (Coating of Metal Parts and Products); Rule 1171 (Solvent Cleaning Operations)
Mojave Desert AQMD	Rule 461 (Gasoline Transfer and Dispensing); Rule 462 (Organic Liquid Loading); Rule 463 (Storage of Organic Liquids); Rule 1104 (Organic Solvent Degreasing Operations); Rule 1106 (Marine Coating Operations); Rule 1114 (Wood Products Coating Operations); Rule 1115 (Metal Parts & Products Coating Operations); Rule 1117 (Graphic Arts and Paper, Film, Foil and Fabric Coatings); Rule 1162 (Polyester Resin Operations); Rule 1168 (Adhesive and Sealant Applications)
Texas Commission on Environmental Quality	30 TAC Chapter 115 (Control of Air Pollution from Volatile Organic Compounds (VOCs)); 30 TAC Chapter 334 (Underground and Aboveground Storage Tanks)
Delaware Natural Resources and Environmental Control	7 DE Admin. Code 1124 (Control of Volatile Organic Compound Emissions, Sections 26.0 – Gasoline Dispensing Facility Stage I Vapor Recovery and 36.0 – Vapor Emission Control at Gasoline Dispensing Facilities); 7 DE Admin. Code 1141 (Limited Emissions of Volatile Organic Compounds from Consumer and Commercial Products, Section 1.0 – Architectural and Industrial Maintenance Coatings)

Tables 6-10 and 6-11 include a detailed evaluation of the applicable South Coast AQMD VOC and NOx rules that correspond to the rules in other air districts/agencies adopted from February 2016 to August 2020 listed in Table 6-9. For example, for the Antelope Valley AQMD's recently amended Rule 1107 in April 2020, an evaluation of the corresponding South Coast AQMD rule (i.e., Rule 1107) was performed and included in Table 6-10. As demonstrated in the 2016 AQMP RACM and this supplemental RACM evaluation, the requirements in South Coast AQMD rules and regulations are generally as stringent as, or more stringent than, the requirements in other air districts/agencies.

TABLE 6-10
Evaluation of Applicable South Coast AQMD Rules and Regulations for RACM Demonstration – VOC Rules

RULE NO	RULE TITLE	CURRENT RULE REQUIREMENTS	OTHER AGENCIES' RULES THAT ARE MORE STRINGENT[#]	RACM EVALUATION
461^	Gasoline Transfer and Dispensing (Amended 4/6/12)	For Phase I, underground storage tanks: an enhanced vapor recovery system having 98% control efficiency and emission factor not exceeding 0.15 lbs/1,000 gallons; aboveground storage tanks: a vapor recovery system having 95% control efficiency. For Phase II, a vapor recovery system having 95% efficiency and emission factor not exceeding 0.38 lbs/1,000 gallons.	n/a*	Meets RACM.
462^	Organic Liquid Loading (Amended 5/14/99)	Class B facilities loading organic liquids with a true vapor pressure of 1.5 psi or greater: a CARB certified vapor recovery system with 90% recovery efficiency.	Mojave Desert Rule 462 (Amended 1/22/18) requires a CARB certified vapor recovery and/or disposal system with 95% recovery efficiency for Class B facilities.	For a subcategory of applicable sources (Class B facilities), South Coast AQMD rule is not as stringent as Mojave Desert AQMD Rule 462 (90 vs. 95% of minimum vapor recovery efficiency required to obtain a CARB certification). However, compliance records indicate that the actual control efficiency exceeds 95%. Together with other requirements in Rule 462, Rule 462 meets the RACM requirements.
463^	Organic Liquid Storage (Amended 11/4/11)	Aboveground organic liquids storage tanks with 9,630 gallons or greater, a minimum true vapor pressure is 0.5 psia; tanks with 19,815 gallons or greater, a minimum true vapor pressure is 1.5 psia. The minimum control efficiency of a vapor recovery system is at 95%.	Texas Rule Chapter 115 (Amended 1/5/17) requires 95% control efficiency for aboveground or underground storage tanks storing VOC with a true vapor pressure of 1.5 psia. Exempted tank capacity varies by region ranging from 1,000 to 210,000 gallons. Mojave Desert Rule 463 (Amended 1/22/18) applies to aboveground and underground storage tanks with a capacity of 39,630 gallons or greater storing organic liquids with a true vapor pressure of 0.5 psia or greater.	Based on staff's evaluation, there are seven underground storage tanks storing organic liquids other than gasoline in South Coast AQMD. These storage tanks are either below the tank capacity threshold or store organic liquids that are below the vapor pressure threshold in other districts or agencies' rules. Therefore, the applicable sources in South Coast AQMD meet RACM level of control.
1106^	Marine and Pleasure Craft Coatings (Amended 5/3/19)	VOC contents of marine coating categories range 340–730 g/L and VOC contents of pleasure craft coating categories range 330–780 g/L. For pleasure craft coatings, clear wood coatings-sealers emission limit 550 g/L.	Mojave Desert Rule 1106 (Amended 10/24/16) generally has the same limits as South Coast Rule 1106, except it has lower limit for clear wood finishes – sealers at 340 g/L (550 g/L in Rule 1106).	Rule 1106 varies in stringency when compared to other agencies' requirements. For almost all categories, Rule 1106 is as stringent as or more stringent than the other Agencies' rules and provides RACM level of control for this source category.

[#] Rules and regulations amended/adopted between February 2016 and August 2020 are included in this supplemental evaluation.

^ This evaluation was conducted as part of the 2020 RACT (Draft Final Staff Report for 2015 8-Hour Ozone Standard Reasonably Available Control Technology (RACT) Demonstration, May 2020. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/ract-draft-final-staff-report.pdf?sfvrsn=23), and is included here for completeness.

* There are no analogous requirements in other air agencies that are more stringent than the South Coast AQMD rule being evaluated.

Table 6-10 (Continued)
Evaluation of Applicable South Coast AQMD Rules and Regulations for RACM Demonstration – VOC Rules

RULE NO	RULE TITLE	CURRENT RULE REQUIREMENTS	OTHER AGENCIES' RULES THAT ARE MORE STRINGENT[#]	RACM EVALUATION
1107	Coating of Metal Parts and Products (Amended 2/7/20)	Coating-specific emission limits of 2.3–3.5 lbs/gal. Air pollution control system is required at least 95% control efficiency (or 5 ppmv outlet of emission control system). At least 90% emission collection efficiency is required from the sources of VOC emissions. Solvent cleaning operations must comply with Rule 1171.	Antelope Valley Rule 1107 (Amended 4/21/20) and Mojave Desert Rule 1115 (Amended 6/8/20) generally have the similar coating-specific limits as South Coast Rule 1107. Overall minimum control efficiency is 90%.	Rule 1107 meets or exceeds RACM requirements. For example, Prefabricated Architectural Component VOC limits are 2.3–2.8 lbs/gal for Air-Dried coating, whereas similar rules at Antelope Valley and Mojave Desert have VOC limits of 3.5 lbs/gal for the same category. For almost all coating-specific categories, Rule 1107 is as stringent as or more stringent than the other districts' rules, and provides RACM level of control for this source category.
1113^	Architectural Coatings (Amended 2/5/16)	Coating-specific VOC emission limits of 50–730 g/L. VOC limits for Colorants range from 50–600 g/L of colorant.	n/a*	Meets RACM.
1122^	Solvent Degreasers (Amended 5/1/09)	Contain various work practice and design requirements.	n/a*	Meets RACM.
1128^	Paper, Fabric and Film Coating Operations (Amended 3/8/96)	For Paper, fabric, and film coating and wash primers, VOC emission limit is less than 265 g/L. For plastisol, VOC emission limit is less than 20 g/L. Control system with at least 95% control efficiency (or 50 ppmv outlet) and 90% capture efficiency.	n/a*	Meets RACM.
1136	Wood Products Coatings (Amended 6/14/96)	VOC limit for wood products coatings is in the range of 120–750 g/L. A VOC limit for high-solid stains is 350 g/L.	Mojave Desert Rule 1114 (Amended 8/24/20) has the similar VOC limits for wood products coatings and a VOC limit for high-solid stains is 240 g/L.	Rule 1136 varies in stringent when compared to other agencies' requirements. For almost all categories, Rule 1136 is as stringent as the other agency's rule and provides RACM level of control for this source category.
1138^	Control of Emissions from Restaurant Operations (Adopted 11/14/97)	Pursuant to the Protocol Determination of PM and VOC Emissions from Restaurant Operations of Rule 1138, 83% reduction of VOC emissions from chain-driven charbroilers are required.	San Joaquin Valley Rule 4692 (Amended 6/21/18) requires 86% reduction of VOC emissions from chain-driven charbroilers.	Rule 1138 is primarily intended to reduce PM emissions. However, existing controls are expected to achieve similar level of VOC reductions because San Joaquin Valley requires chain-driven charbroilers/catalytic oxidizers combinations be certified by South Coast AQMD test protocol that are deemed compliant with their Rule 4692. South Coast AQMD Rule 1138 VOC control requirements are similar to San Joaquin Valley Rule 4692 and meet RACM.

[#] Rules and regulations amended/adopted between February 2016 and August 2020 are included in this supplemental evaluation.

^ This evaluation was conducted as part of the 2020 RACT (Draft Final Staff Report for 2015 8-Hour Ozone Standard Reasonably Available Control Technology (RACT) Demonstration, May 2020. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/ract-draft-final-staff-report.pdf?sfvrsn=23), and is included here for completeness.

* There are no analogous requirements in other air agencies that are more stringent than the South Coast AQMD rule being evaluated.

Table 6-10 (Concluded)
Evaluation of Applicable South Coast AQMD Rules and Regulations for RACM Demonstration – VOC Rules

RULE NO	RULE TITLE	CURRENT RULE REQUIREMENTS	OTHER AGENCIES' RULES THAT ARE MORE STRINGENT[#]	RACM EVALUATION
1143^	Consumer Paint Thinners and Multi-purpose Solvents (Amended 12/3/10)	Set VOC content of 25 g/l for consumer paint thinner and multi-purpose solvent beginning 1/1/2011	n/a*	Meets RACM.
1145^	Plastic, Rubber, Leather and Glass Coatings (Amended 12/4/2009)	VOC limits: 50–800 g/L (0.4–6.7 lbs/gal). Average provisions and add-on control at 95% control efficiency (50 ppmv outlet), 90% capture efficiency. High transfer coating equipment (e.g. HVLP). Solvent cleaning operations must comply with Rule 1171.	n/a*	Meets RACM.
1162^	Polyester Resin Operations (Amended 7/8/05)	VOC limits (monomer content) from 10-48% by weight or alternatively 90% control efficiency for add-on control.	Mojave Desert Rule 1162 (Amended 4/23/18) VOC limit: • Tooling Resin Atomized (spray) is 30% weight average monomer (South Coast AQMD Rule 1162's limit for Other Polyester Resin Materials is 35% monomer by weight as applied) • Mojave Desert limits the weighted average monomer VOC content for fiberglass boat manufacturing operations (South Coast AQMD has no limits specifically for boat manufacturing operations).	Rule 1162 varies in stringency when compared to other agencies' requirements. For almost all categories, Rule 1162 is as stringent as the other agency's rule, and provides RACM level of control for this source category.
1168^	Adhesive and Sealant Applications (Amended 10/6/17)	VOC content limit for Foam Insulation Sealants is 250 g/L with a future VOC limit of 50 g/L in 2023.	n/a*	Meets RACM.
1171^	Solvent Cleaning Operations (Amended 5/1/09)	VOC content limit in a solvent for general solvent cleaning operations is 25 g/L.	n/a*	Meets RACM.

[#] Rules and regulations amended/adopted between February 2016 and August 2020 are included in this supplemental evaluation.

^ This evaluation was conducted as part of the 2020 RACT (Draft Final Staff Report for 2015 8-Hour Ozone Standard Reasonably Available Control Technology (RACT) Demonstration, May 2020. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/ract-draft-final-staff-report.pdf?sfvrsn=23), and is included here for completeness.

* There are no analogous requirements in other air agencies that are more stringent than the South Coast AQMD rule being evaluated.

TABLE 6-11
Evaluation of Applicable South Coast AQMD Rules and Regulations for RACM Demonstration – NOx Rules

RULE NO	RULE TITLE	CURRENT RULE REQUIREMENTS	OTHER AGENCIES' RULES THAT ARE MORE STRINGENT[#]	RACM EVALUATION
1111	Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces (Amended 9/4/20)	For mobile home furnaces, NOx emission limits: 14 ng/J For condensing, non-condensing, and weatherized home furnaces, NOx limits: 14 ng/J	n/a*	Meets RACM.
1121	Control of Nitrogen Oxides fron Residential Type, Natural Gas-Fired Water Heaters (Amended 9/3/04)	For natural gas-fired water heaters rated < 75,000 Btu/hr, NOx emission limits: • 55 ppmv for mobile home • 30 ppmv for residential home • 15 ppmv for water heaters ≤ 50 gallons	n/a*	Meets RACM.
1146^ 1146.1^ 1146.2^	Rule 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (Amended 12/7/18) Rule 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (Amended 12/7/18) Rule 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters (Amended 12/7/18)	Rule 1146 - For industrial and commercial boilers, steam generators, and process heaters > 5 MMBtu/hr: • Gaseous fuel: 30 ppm • Non-gaseous fuel: 40 ppm • Landfill gas: 25 ppm • Digester gas: 15 ppm • Atmospheric units: 12 ppm • Group I units, natural gas ≥ 75 MMBtu/hr: 5 ppm • Group II units, gaseous fuels ≥ 20 and < 70 MMBtu/hr: 5–9 ppm • Group III units, gaseous fuels ≥ 5 and < 20 MMBtu/hr: 7–9 ppm • Thermal fluid heaters: 12 ppm Rule 1146.1 - For industrial and commercial boilers, steam generators, and process heaters between 2 and 5 MMBtu/hr using the following fuels: • Landfill gas: 25 ppm • Digester gas: 15 ppm • Natural gas using non-fire-tube boilers: 9 ppm • Natural using fire-tube boilers: 7 ppm • Thermal fluid heaters: 12 ppm • All other units: 30 ppm Rule 1146.2 - For water heaters, small boilers, and process heaters < 2 MMBtu/hr using natural gas: NOx emission limit 20 ppm.	n/a*	Meets RACM.

[#] Rules and regulations amended/adopted between February 2016 and August 2020 are included in this supplemental evaluation.

^ This evaluation was conducted as part of the 2020 RACT (Draft Final Staff Report for 2015 8-Hour Ozone Standard Reasonably Available Control Technology (RACT) Demonstration, May 2020. Available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/ract-draft-final-staff-report.pdf?sfvrsn=23), and is included here for completeness.

* There are no analogous requirements in other air agencies that are more stringent than the South Coast AQMD rule being evaluated.

In addition to the supplemental RACM evaluation, an evaluation was also conducted for the following area source categories to identify potential control measures. Since the adoption of the 2016 AQMP, several air districts have revised their wood-burning rules to incorporate more stringent requirements. In addition, California has passed a suite of bills that seek to reduce greenhouse gas emissions from various sectors including electricity generation, as well as residential and commercial buildings. Hence, a further evaluation of feasible measures is warranted for these source categories. The following section provides an update of these regulations and policies, and an assessment of whether they could be considered RACM for theses source categories for Coachella Valley.

i. Residential and Commercial Buildings

The South Coast Air Basin and the Coachella Valley are home to more than 17 million residents, representing approximately 44 percent of the population in California, who reside in about 6 million housing units and utilize commercial space for shopping, entertainment, and places of employment. The energy consumption in the residential and commercial buildings is a direct and indirect source of criteria pollutants and greenhouse gas emissions. In 2018, residential and commercial fuel combustion accounted for 21.4 tpd of NOx in the South Coast Air Basin and 0.51 tpd of NOx in Coachella Valley. The majority of NOx emissions within the residential and commercial buildings are from water heating and space heating. In South Coast AQMD, Rule 1111 reduces NOx emissions from residential and commercial gas-fired fan-type residential space heating furnaces. The rule applies to manufacturers, distributors, sellers, and installers of such furnaces. Rule 1111 was amended in 2009 to require Ultra-Low NOx furnaces (14 ng/J) by 2014, and was subsequently amended to extend the compliance date with a mitigation fee option. The current NOx emission limit is set at 14 ng/J, which is the most stringent emission limit in California. NOx emissions from residential natural-gas fired water heaters are regulated by Rule 1121. The rule was amended in December 1999 to lower the emission limit from 40 ng/J to 20 ng/J on July 1, 2002 and 10 ng/J on January 1, 2005. In 2004, the implementation date of the final rule limit of 10 ng/J was delayed to 2006-2008 as more time was needed because a number of national safety, energy and environmental standards were delayed and needed to be met concurrently with the Rule 1121 final limit. The existing NOx limit of 10 ng/J is still the most stringent emission limit for natural gas fired water heaters in California.

For the residential and commercial buildings, there are opportunities to require and accelerate the replacement of existing equipment with cleaner zero- or near-zero emissions alternatives. The 2016 AQMP includes control measures for the applications of zero or near-zero NOx emissions appliances in the residential and commercial sectors (CMB-02), additional enhancement in reducing energy use in existing residential buildings (ECC-03), and co-benefits from existing residential and commercial building energy efficiency mandates (ECC-02). These three control measures combined are anticipated to achieve 2.6 tpd of NOx reductions by 2023. A key element of the 2016 AQMP is to use private and public funding to help further the development and

deployment of the advanced cleaner technologies such as zero emission and near-zero emission technologies, and also identify co-benefits from existing programs (e.g., climate and energy efficiency). In January 2019, the South Coast AQMD Governing Board awarded 26 emission reduction incentive projects, totaling over $47 million from several South Coast AQMD mitigation and penalty funds, to support the 2016 AQMP's goals. Of the 26 projects, 15 were selected to implement commercially available zero or near-zero control technologies as well as to support infrastructure for implementation of cleaner fuels. These projects are anticipated to result in approximately 88 tpy of NOx and 2 tpy of PM2.5 emissions reductions, with the majority of the projects implemented in environmental justice communities. Additionally, 11 stationary and mobile source technology demonstration projects were funded. Upon successful demonstration and deployment, these projects have the potential to provide additional long-term NOx and VOC emission reductions. The awarded projects are consistent with the commitments in various 2016 AQMP control measures including MOB-14, CMB-02, CMB-04, and ECC-03.

Since the adoption of the 2016 AQMP, California Legislature passed a suite of bills that seek to reduce greenhouse gas emissions from various sectors including electricity generation as well as residential and commercial buildings. In 2018, California passed SB 100 (California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases), which sets new standards to California's renewable portfolio by requiring the state to use 50 percent renewable electricity by 2026, 60 percent renewable electricity by 2030, and 100 percent carbon-free electricity by 2045. In addition, two new laws directed towards the state's building sector, AB 3232 (Zero-emissions Buildings and Sources of Heat Energy) and SB 1477 (Low-emissions Buildings and Sources of Heat Energy), were signed in 2018. AB 3232 requires the California Energy Commission (CEC) to assess, by January 1, 2021, the potential for reducing GHG emissions from California's residential and commercial buildings to 40 percent below 1990 levels by 2030. The assessment will identify key options and policies for increasing heating efficiency while reducing carbon emissions from the state's commercial and residential buildings. SB 1477 helps promote and implement clean heating technology in the state by providing $50 million per year through 2023 to encourage market-based development and adoption of low-emission, clean heating technologies for buildings. In 2018, Governor Brown also signed Executive Order B-55-18, committing California to total, economy-wide carbon neutrality by 2045.

Overall, California sets ambitious goals to promote clean technologies and decrease energy use in California's existing and new building stock. Reducing, managing, and changing the way energy is used in the commercial and residential sectors can provide additional emission reductions, reduce energy costs, and provide multiple environmental benefits. These state climate policies will result in NOx reduction co-benefits in the mid to long term time frame. An evaluation of the benefits of these existing and emerging energy programs to NOx reduction will be included in the 2022 AQMP. South Coast AQMD will continue to evaluate opportunities for additional feasible

NOx reductions in existing and new residential and commercial buildings through regulatory or incentive-based programs.

Based on the above analysis, we conclude that for this source category, no other feasible measures would result in additional emission reductions for the 1997 ozone standard.

ii. Residentials Fuel Combustion – Wood Combustion

Residential wood combustion is an area source category with significant PM2.5 emissions and considerable VOC emissions. Most wood-burning devices in the South Coast AQMD are fireplaces or wood stoves (or wood-burning heaters). Since the 2016 AQMP, other California air districts and another state agency have revised their wood-burning rules to incorporate more stringent requirements. Hence, a further evaluation of feasible measures is warranted for this source category.

South Coast AQMD Rule 445 (Wood-Burning Devices) was adopted in March 2008 to implement the PM2.5 Control Measure BCM-03 of the 2007 AQMP to reduce PM2.5 emissions from wood-burning devices. Rule provisions apply to manufacturers, vendors, commercial firewood sellers, and persons owning or operating a wood-burning device. The rule prohibits burning of products not intended for use as fuel, the sale of unseasoned wood (currently from July 1 through the end of February), and mandates curtailment of wood-burning on "No-Burn" days. Wood-burning curtailment is mandatory on No-Burn days when ambient PM2.5 concentration is forecast to exceed a threshold limit. Exemptions are included for low income households, where the device is the sole source of heating or no natural gas service is available within 150 feet of the property line, geographic elevations 3,000 feet or higher above mean sea level, and ceremonial fires. The rule was amended in May 2013 to implement Control Measure BCM-01 in the 2012 AQMP. The 2013 amendments expanded the wood-burning curtailment or No-Burn day restrictions by lowering the curtailment threshold from 35 to 30 micrograms per cubic meter ($\mu g/m^3$), establishing criteria for Basin-wide curtailment, and also setting standards for commercially sold solid-fuel labeling. In June 2020, Rule 445 was amended to implement the backstop Contingency Control Measure BCM-09 in the 2016 AQMP and to address the CAA contingency measure requirements for the PM2.5 standards. The 2020 amendments extended the No-Burn day requirement Basin-wide when the daily PM2.5 air quality is forecast to exceed 30 $\mu g/m^3$ in any source receptor area and would also automatically lower the No-Burn day thresholds subject to specific contingency measure triggers as set forth in 40 CFR Section 51.1014(a).

The following section provides an evaluation of recently adopted rules and regulations by other agencies for residential wood burning.

San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) Rule 4901 (Wood Burning Fireplaces and Wood Burning Heaters, Amended 6/20/2019)

SJVUAPCD Rule 4901 includes a tiered mandatory curtailment program that establishes different curtailment thresholds for each county based on the type of devices. During a level one episodic woodburning curtailment, operation of wood burning fireplaces and unregistered wood burning heaters is prohibited, but properly operated, registered wood burning devices may be used. During a level two episodic woodburning curtailment, operation of any wood burning device is prohibited. In the ''hot spot'' counties of Madera, Fresno, and Kern, the level one PM2.5 threshold is 12 $\mu g/m^3$, and the level two PM2.5 threshold is 35 $\mu g/m^3$. In the remaining counties in the District (San Joaquin, Stanislaus, Merced, Kings, and Tulare), the level one PM2.5 threshold is 20 $\mu g/m^3$, and the level two PM2.5 threshold is 65 $\mu g/m^3$. In addition, Rule 4901 prohibits the sale or transfer any real property which contains a wood burning heater without first assuring that each wood burning heater included in the real property is EPA Phase II Certified or has a more stringent certification for wood-burning devices under the New Source Performance Standards (NSPS) at the time of purchase or installation, as well as removal or installation of an EPA certified wood-burning heater that meets the requirements of NSPS at the time of installation during a major fireplace remodel which also requires a building permit. South Coast AQMD Rule 445 prohibits remodeling of fireplaces. Existing fireplaces constructed prior the effective date of the rule may be repaired within the existing footprint where there is a health/safety issue.

Bay Area Air Quality Management District (BAAQMD) Regulation 6 Rule 3 (Wood-Burning Devices, Amended 11/20/2019)

Under BAAQMD Rule 6-3, the Air District can issue a Winter Spare the Air Alert and require a Mandatory Burn Ban when air quality is forecast to be unhealthy due to elevated levels of fine particulate matter with some exemptions that allow wood burning. The rule provides for limited exemptions in the following areas: (i) sole source of heat, (ii) non-functional, permanently installed heater, and (iii) loss of natural gas and/or electric power. In 2019, BAAQMD revised its wood-burning rule to provide for curtailments year-round. When the air quality is forecasted to be unhealthy due to ambient levels of particulate matter exceeding 35 $\mu g/m^3$, burning wood or any solid fuels is prohibited in the Bay Area.

Utah Administrative Code R307-302-3 (No-Burn Periods for Particulates, Effective 2/1/2017)

Under Utah Administrative Code R307-302-3, when the ambient concentration of PM2.5 measured by monitors in Box Elder, Cache, Davis, Salt Lake, Tooele, Utah or Weber counties are forecasted to reach or exceed 25 $\mu g/m^3$, a mandatory no-burn period for solid fuel burning devices goes into effect. The mandatory no-burn periods will only apply to those counties identified by the director. A person within the geographical boundaries is prohibited from using a solid fuel burning device unless it is the sole source of heat for an entire residence and registered with the director.

Analysis of Feasible Measures for Residential Fuel Combustion (South Coast AQMD Rule 445)

Currently, South Coast AQMD Rule 445 applies to the South Coast Air Basin only. South Coast Air Basin is in Serious nonattainment with respect to both the 2006 24-hour PM2.5 standard and 2012 annual PM2.5 standard. In contrast, Coachella Valley is in attainment of both PM2.5 standards. Since Rule 445 primarily targets to reduce PM2.5 emissions, the existing curtailment program is implemented during cooler months (November 1 to end of February) when PM2.5 levels are high and "No-Burn" days are called based on a PM2.5 threshold. Given high ozone days occur during warmer months and the PM2.5 levels in Coachella Valley are typically low, extending the existing Rule 445 requirements for the cooler months to Coachella Valley would not result in "No-Burn" days in Coachella Valley nor quantifiable emission reduction benefits for the 1997 ozone standard. The requirements in Rule 445 – Wood-Burning Device will be further evaluated during the rule amendment process currently underway to address the CAA requirements for contingency measures in the event of failure to attain an ozone standard or meet a significant milestone demonstrating progress towards attainment.

II. CARB Mobile and Area Sources

The CAA requires ozone SIPs to include a RACM demonstration. This section demonstrates that California's mobile source and consumer products measures meet RACM.

RACM Requirements

Section 172(c)(1) of the CAA requires SIPs to provide for the implementation of RACM as expeditiously as practicable. The U.S. EPA has interpreted RACM to be those emission control measures that are technologically and economically feasible and when considered in aggregate, would advance the attainment date by at least one year.

Given the severity of California's air quality challenges, CARB has implemented the most stringent mobile source emissions control program in the nation. CARB's comprehensive strategy to reduce emissions from mobile sources includes stringent emissions standards for new vehicles, in-use programs to reduce emissions from existing vehicle and equipment fleets, cleaner fuels that minimize emissions, and incentive programs to accelerate the penetration of the cleanest vehicles beyond that achieved by regulations alone. Taken together, California's mobile source program meets RACM requirements in the context of ozone nonattainment.

To meet RACM requirements and achieve its emissions reductions goals, California continues to develop new programs to strengthen its overall mobile source program and to achieve new emissions reductions from mobile sources. CARB developed its *2016 State Strategy for the State Implementation Plan*[25] (State SIP Strategy) through a multi-step measure development process, including extensive public consultation, to develop and evaluate potential strategies for mobile

[25] CARB State SIP Strategy.

source categories under CARB's regulatory authority that could contribute to expeditious attainment of the standard.

First, CARB developed a series of technology assessments for heavy-duty mobile source applications and the fuels necessary to power them[26] along with ongoing review of advanced vehicle technologies for the light-duty sector in collaboration with U.S. EPA and the National Highway Traffic Safety Administration (NHTSA). CARB staff then used a scenario planning tool to examine the magnitude of technology penetration necessary, as well as how quickly technologies need to be introduced to meet attainment of the standard.

CARB staff released a discussion draft Mobile Source Strategy[27] for public comment in October 2015. This strategy specifically outlined a coordinated suite of proposed actions to not only meet federal air quality standards, but also achieve greenhouse gas emission reduction targets, reduce petroleum consumption, and decrease health risk from transportation emissions over the next 15 years. CARB staff held a public workshop on October 16, 2015 in Sacramento, and on October 22, 2015, CARB held a public Board meeting to update the Board and solicit public comment on the Mobile Source Strategy in Diamond Bar.

Staff continued to work with stakeholders to refine the measure concepts for incorporation into related planning efforts including the 75 ppb 8-hour ozone SIPs. On May 16, 2016, CARB released an updated Mobile Source Strategy and on May 17, 2016 CARB released the proposed State SIP strategy for a 45-day public comment period. The mobile source emissions reductions commitments included in the Coachella Valley ozone SIP represent the emissions reductions achieved through the measures in the State SIP Strategy that are relevant in Coachella Valley.

The current mobile source program and proposed measures included in the State SIP Strategy provide attainment of the 75 ppb and 70 ppb 8-hour ozone standards as expeditiously as practicable and meet RFP requirements. Moving forward, CARB staff is working to evaluate further potential emission reduction strategies. On March 25, 2020, CARB held a public webinar to discuss the development of the 2020 Mobile Source Strategy which takes an integrated planning approach to identify the regulatory and programmatic strategies needed to achieve all of California's targets.

RACM For Mobile Sources

Waiver Approvals

While the Act preempts most states from adopting emission standards and other emission-related requirements for new motor vehicles and engines, it allows California to seek a waiver or

[26] CARB Technology and Fuel Assessments webpage (http://www.arb.ca.gov/msprog/tech/tech.htm).

[27] CARB 2016 Mobile Source Strategy webpage (https://ww2.arb.ca.gov/resources/documents/2016-mobile-source-strategy).

authorization from the federal preemption to enact emission standards and other emission-related requirements for new motor vehicles and engines and new and in-use off-road vehicles and engines that are at least as protective as applicable federal standards, except for locomotives and engines used in farm and construction equipment which are less than 175 hp.

Over the years, California has received waivers and authorizations for over 100 regulations. The most recent California standards and regulations that have received waivers and authorizations are Advanced Clean Cars (including ZEV and LEV III) for Light-Duty vehicles, and On-Board Diagnostics, Heavy-Duty Idling, Malfunction and Diagnostics System, In-Use Off-Road Diesel Fleets, Large Spark Ignition Fleet, Mobile Cargo Handling Equipment for Heavy-Duty engines. Other Authorizations include Off-Highway Recreational Vehicles and the Portable Equipment Registration Program.

Finally, CARB obtained an authorization from U.S. EPA to enforce adopted emission standards for off-road engines used in yard trucks and two-engine sweepers. CARB adopted the off-road emission standards as part of its "Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles" (Truck and Bus Regulation). The bulk of the regulation applies to in-use heavy-duty diesel on-road motor vehicles with a gross vehicle weight rating in excess of 14,000 pounds, which are not subject to preemption under Section 209(a) of the Act and do not require a waiver under Section 209(b).

The waiver and authorizations California has received are integral to this successful mobile source program. However, recent U.S. EPA action threatens this success and California's ability to achieve emissions reductions needs to meet the NAAQs. In September 2019, the U.S. Department of Transportation's NHTSA and U.S. EPA took action to provide nationwide uniform fuel economy and greenhouse gas emission standards for automobile and light duty trucks and withdrew the waiver granted to California in January 2013 as it relates to California's GHG and ZEV programs.[28]

Light- and Medium-Duty Vehicles

Light- and medium-duty vehicles are currently regulated under California's ACC program including the Low-Emission Vehicle III (LEV III) and ZEV programs. Other California programs such as the 2012 Governor's Executive Order to put 1.5 million zero-emission vehicles on the road by 2025,[29] and California's Reformulated Gasoline program (CaRFG) will produce substantial and cost-effective emission reductions from gasoline-powered vehicles. CARB is also active in implementing programs for owners of older dirtier vehicles to retire them early. The "car scrap"

[28] U.S. EPA One National Program Rule webpage (https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-one-national-program-federal-preemption-state).

[29] Executive Order B-16-2012.

programs, like the Enhanced Fleet Modernization Program, and Clean Vehicle Rebate Project provide monetary incentives to replace old vehicles with zero-emission vehicles. The Air Quality Improvement Program (AQIP), is a voluntary incentive program to fund clean vehicle.

Taken together, California's emission standards, fuel specifications, and incentive programs for on-road light- and medium-duty vehicles represent all measures that are technologically and economically feasible within California.

Heavy-Duty Vehicles

California's heavy-duty vehicle emissions control program includes requirements for increasingly tighter new engine standards and address vehicle idling, certification procedures, on-board diagnostics, emissions control device verification, and in-use vehicles. This program is designed to achieve an on-road heavy-duty diesel fleet with 2010 engines emitting 98 percent less NOx and PM2.5 than trucks sold in 1986. Most recently in the ongoing efforts to go beyond federal standards and achieve further reductions, CARB adopted the Optional Reduced Emissions Standards for Heavy-Duty Engines regulation in 2014 that establishes the new generation of optional NOx emission standards for heavy-duty engines.

The recent in-use control measures include On-Road Heavy-Duty Diesel Vehicle (In-Use) Regulation, Drayage (Port or Rail Yard) Regulation, Public Agency and Utilities Regulation, Solid Waste Collection Vehicle Regulation, Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation, ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, Heavy-Duty Diesel Vehicle Inspection Program, Periodic Smoke Inspection Program, Fleet Rule for Transit Agencies, Lower-Emission School Bus Program, and Heavy-Duty Truck Idling Requirements. In addition, CARB's significant investment in incentive programs provides an additional mechanism to achieve maximum emission reductions from this source sector.

Taken together, California's emission standards, fuel specifications, and incentive programs for heavy-duty vehicles represent all measures that are technologically and economically feasible within California.

Off-Road Vehicles and Engines

California regulations for off-road equipment include not only increasingly stringent standards for new off-road diesel engines, but also in-use requirements and idling restrictions. The Off-Road Regulation is an extensive program designed to accelerate the penetration of the cleanest equipment into California's fleets, and impose idling limits on off-road diesel vehicles. The program goes beyond emission standards for new engines through comprehensive in-use requirements for legacy fleets. Engines and equipment used in agricultural processes are unique to each process and are often re-designed and tailored to their particular use. Fleet turnover to cleaner engines is the focus for these engines.

Taken together, California's comprehensive suite of emission standards, fuel specifications, and incentive programs for off-road vehicles and engines represent all measures that are technologically and economically feasible within California and when considered in aggregate, would advance the attainment date by at least one year.

Other Sources and Fuels

The emission limits established for other mobile source categories, coupled with U.S. EPA waivers and authorization of preemption establish that California's programs for motorcycles, recreational boats, off-road recreational vehicles, cargo handling equipment, and commercial harbor craft sources meet the requirements for RACM. Cleaner burning fuels also play an important role in reducing emissions from motor vehicles and engines as CARB has adopted a number of more stringent standards for fuels sold in California, including the Reformulated Gasoline program, low sulfur diesel requirements, and the Low Carbon Fuel Standard. These fuel standards, in combination with engine technology requirements, ensure that California's transportation system achieves the most effective emission reductions possible.

Taken together, California's emission standards, fuel specifications, and incentive programs for other mobile sources and fuels represent all measures that are technologically and economically feasible within California.

Mobile Source Summary for RACM

California's long history of comprehensive and innovative emissions control has resulted in the most stringent mobile source control program in the nation. U.S. EPA has previously acknowledged the strength of the program in their approval of CARB's regulations and through the waiver process. In its 2019 approval[30] of the South Coast's 8-hour ozone plan which included the State's current program and new measure commitments, U.S. EPA found that there were no further reasonably available control measures that would advance attainment of the standard in South Coast. Since then, CARB has continued to substantially enhance and accelerate reductions from our mobile source control programs through the implementation of more stringent engine emissions standards, in-use requirements, incentive funding, and other policies and initiatives as described in the preceding sections.

The CARB process for developing the proposed State measures included an extensive public process and is consistent with the U.S. EPA RACM guidance. Through this process CARB found that with the current mobile source control program and proposed measures, there are no additional reasonable available control measures that would advance attainment of the 2008 8-hour ozone standard in Coachella Valley. There are no reasonable regulatory control measures excluded from use in this plan; therefore, there are no emissions reductions associated with unused regulatory

[30] 84 FR 52005 (October 1, 2019).

control measures. As a result, California's mobile source control programs fully meet the requirements for RACM.

RACM for Consumer Products

Consumer products are defined as chemically formulated products used by household and institutional consumers. For 30 years, CARB has taken actions pertaining to the regulation of consumer products. Three regulations have set VOC limits for 129 consumer product categories. These regulations, referred to as the Consumer Product Program, have been amended frequently, and progressively stringent VOC limits and reactivity limits have been established. These are Regulation for Reducing VOC Emissions from Antiperspirants and Deodorants; Regulation for Reducing Emissions from Consumer Products; and Regulation for Reducing the Ozone Formed from Aerosol Coating Product Emissions, and the Tables of Maximum Incremental Reactivity Values. Additionally, a voluntary regulation, the Alternative Control Plan has been adopted to provide compliance flexibility to companies. The program's most recent rulemaking occurred in 2018 with amends to Consumer Products Regulation and Method 310 to include an alternate compliance option and updated dates of test procedures.

U.S. EPA also regulates consumer products. U.S. EPA's consumer products regulation was promulgated in 1998, however, federal consumer products VOC limits have not been revised since their adoption. U.S. EPA also promulgated reactivity limits for aerosol coatings. As with the general consumer products, California's requirements for aerosol coatings are more stringent than the U.S. EPA's requirements. Other jurisdictions, such as the Ozone Transport Commission states, have established VOC limits for consumer products which are modeled after the California program. However, the VOC limits in those states typically lag those applicable in California.

In summary, California's Consumer Products Program, with the most stringent VOC requirements applicable to consumer products, meets RACM.

III. Transportation Control Strategies and Transportation Control Measures

By listing them separately, the CAA Section 182(d)(1)(A) differentiates between Transportation Control Strategies (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 VMT growth.

CARB'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).

SCAG is responsible for developing and implementing TCMs. However, there are no TCMs in the ozone SIP for the Coachella Valley because upwind emissions from the South Coast Air Basin largely influence air quality in the Coachella Valley. It is important to note that all reasonably

available TCMs have been implemented by SCAG in the South Coast Air Basin as documented and approved by U.S. EPA in the 2016 AQMP Appendix IV-C Regional Transportation Strategy and Control Measures.

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.

Contingency Measures

Clean Air Act Sections 172(c)(9) and 182(c)(9) require contingency measures if an ozone nonattainment area fails to meet the RFP milestones or attain the national primary ambient air quality standard by the attainment date. A rule amendment to Rule 445, Wood-burning Devices, is underway to include potential contingency provisions for Coachella Valley as an Extreme nonattainment area.

VMT Offset

For areas designated as Severe or Extreme, the CAA requires states to submit enforceable transportation control strategies (TCSs) and transportation control measures (TCMs) to offset any growth in emissions from growth in vehicle miles travelled (VMT) or numbers of vehicle trips.

For Coachella Valley, in its Severe nonattainment plan for the 1997 ozone standard, a VMT offset demonstration was conducted for the attainment year of 2018. This demonstration was part of the 2007 AQMP, which was approved by the U.S. EPA in 2017.[31] The U. S. EPA has also proposed approval of the VMT offset demonstration for the 2008 ozone NAAQS for Coachella Valley, which has an attainment year of 2026.

As an Extreme nonattainment area for the 1997 ozone standard, a new VMT offset demonstration is required for the attainment year of 2023. ~~A VMT offset demonstration is currently being developed and will be included in the Draft Final Extreme Area Plan.~~ The VMT offset demonstration will be addressed through a separate public process through CARB.

Revised Major Stationary Source Definition

Under the Severe nonattainment designation, the definition of major stationary sources (also referred to as major polluting facility in South Coast AQMD rules) includes facilities with a PTE of 25 tons per year or higher of VOC or NOx. Following reclassification to an Extreme nonattainment area, the threshold for major stationary sources in Coachella Valley will be lowered

[31] 82 FR 26854.

to include facilities with a PTE of 10 tons per year or higher of VOC or NOx since VOC and NOx are precursors for ozone. This change makes the definition stricter and will potentially cause two existing and any new facilities to be subject to more stringent permitting requirements. Amendments to Regulations XIII – New Source Review, XX – Regional Clean Air Incentives Market, and XXX - Title V are currently underway to address the major polluting threshold and the major modification threshold for New Source Review and RECLAIM New Source Review, and the applicability threshold for Title V permits. Proposed amendments for these three regulations and are tentatively scheduled to be considered at the Governing Board Hearing in December 2020.

Offset Requirement

Clean Air Act Section 182(e)(1) requires a modified offset ratio of 1.5 to 1 of total emission reductions of VOCs to total increased VOC emissions of each air pollutant (due to permit modifications), unless federal best available control technology (BACT) is required for all new or modified existing major sources. The Federal NSR requirements are reflected in South Coast AQMD Regulation XIII – New Source Review. South Coast AQMD's regulations implement best available control technology (BACT) which is the equivalent of federal Lowest Achievable Emission Reduction (LAER) for major and non-major sources, and therefore an offset ratio of 1.2 to 1 is used for NSR offset requirements for all nonattainment criteria air contaminants (Rule 1303). South Coast AQMD's New Source Review Regulations already include these requirements for VOC and NOx sources, however, amendments are proposed to existing Regulation XIII provisions to change the offset ratio for CO from 1 to 1 in Coachella Valley to 1.2 to 1, making it consistent with the South Coast Air Basin.

Modifications at Major Stationary Sources

Clean Air Act Section 182(e)(2) requires any increase of emissions at a major stationary source to be considered as a modification and subject to NSR requirements. South Coast AQMD Regulation XIII requires any new or modified source that results in an emissions increase of any nonattainment air contaminant to be subject to NSR. Therefore, the modification requirement is already addressed in existing NSR rules. Regulation XIII major polluting facility and major modification threshold definitions for Coachella Valley are, however, proposed to be revised to be consistent with requirements for Extreme ozone nonattainment areas and federal NSR requirements.

Use of Clean Fuels or Advanced Control Technology for Boilers

Clean Air Act Section 182(e)(3) requires each new, modified, and existing electric utility and industrial and commercial boiler that emits more than 25 tpy of NOx to burn a low polluting fuel or use advanced NOx control technology. Existing boilers are already subject to South Coast AQMD Rule 1146 (Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters) and Rule 1135 (Emissions of Oxides of Nitrogen from Electricity Generating Facilities), which reflects BARCT for existing equipment. Any new

or modified sources with emission increases are also subject to California BACT (federal lowest achievable emission rate (LAER) for the case of major sources) requirements. As such, the implementation of existing California BARCT and BACT already require new, modified, and existing electric utility and industrial and commercial boilers to use advanced NOx control technology, and therefore, no additional action is needed upon reclassification.

Traffic Control Measures during Heavy Traffic Hours

Clean Air Act Section 182(e)(4) allows for control measure programs to reduce use of high polluting or heavy-duty vehicles during heavy traffic hours. These are not required measures and no additional actions are required upon reclassification.

New Technologies

Clean Air Act Section 182(e)(5) allows for Extreme nonattainment area attainment demonstrations to be based on the anticipated development of new technologies or improvement of existing control technologies. These long-term control measures are often referred to as "black box" measures and go beyond the short-term control measures that are based on known and demonstrated technologies. For Extreme nonattainment areas, the "black box" measures may be used as part of the attainment strategy. The ability to use 182(e)(5), however, ceases three years prior to the attainment date. As presented in Chapter 4 and 5 of this Plan, existing rules and regulations provide the needed reductions for attainment in 2023, and the use of these long-term measures is not needed for attainment demonstration.

NOx Requirements

Pursuant to CAA Section 182(f), all provisions required for major stationary sources of VOC shall also apply to major stationary sources of NOx as defined in 182(e)(1), including the modified offset ratio. Since the offset requirement for an Extreme nonattainment area has already been incorporated into South Coast AQMD's existing NSR rules, there will not be any additional offset requirements due to reclassification of Coachella Valley to Extreme nonattainment.

7. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the Coachella Valley Extreme Area Plan for 1997 8-Hour Ozone Standard is exempt from CEQA pursuant to CEQA Guidelines Sections 15061(b)(3) and 15308. Further, there is no substantial evidence indicating that any of the exceptions in CEQA Guidelines Section 15300.2 apply to the proposed project. A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062. If the proposed project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties. In addition, the Notice of Exemption will be electronically filed with the State Clearinghouse to be posted on their CEQAnet Web Portal, which may be accessed via the following weblink: https://ceqanet.opr.ca.gov/search/recent.

8. PUBLIC PROCESS

The ~~Draft~~ Coachella Valley Extreme Area Plan was developed through a public process. The Draft Plan was presented to the AB 617 East Coachella Valley Community Steering Committee on August 26, 2020, ~~and~~ the AQMP Advisory Group on September 3, 2020, ~~and. It will be presented to~~ the South Coast AQMD's Mobile Source Committee on September 18, 2020, and the Local Government and Small Business Assistance Advisory Group on October 9, 2020. The updated emissions inventory and modeling was also discussed and presented at the Scientific, Technical, and Modeling Peer Review Group on August 20, 2020. The Draft Plan was released on September 11, 2020 for public review. South Coast AQMD staff ~~will hold~~held a Public Consultation Meeting on September 25, 2020 to solicit information, comments, and suggestions from the public, affected businesses and stakeholders. Key comments made at the Public Consultation Meeting included the applicability and impacts on tribal lands, pollution around the Salton Sea area, and the impacts of lowering the major source threshold on local businesses. Two comment letters were also received as of October 13, 2020. Key comments included projected locomotive emissions impact on attainment demonstration, impact of climate change on local ozone levels, control strategies to reduce local emissions, need for additional air monitoring stations, and additional incentive funding for the Coachella Valley. Responses to these comments are provided in Chapter 9 of this Plan. A Public ~~hearing~~ Hearing is scheduled at the South Coast AQMD Governing Board Meeting on December 4, 2020. Following approval by the South Coast AQMD Governing Board, the Plan will be submitted for approval by the CARB Board at their Board meeting to be held on December 10–11, 2020, which will then be submitted to the U.S. EPA for inclusion into the SIP.

9. PUBLIC COMMENTS AND RESPONSES TO COMMENTS

Two comments letters were received during the comment period for the Draft Coachella Valley Extreme Area Ozone Plan. The comment letters and responses to comments are listed in this section.

Comment Letter #1
Anita Lee, U.S. EPA
October 13, 2020

From: Lee, Anita <Lee.Anita@epa.gov>
Sent: Tuesday, October 13, 2020 2:59 PM
To: Kalam Cheung <kcheung@aqmd.gov>
Cc: Zorik Pirveysian <ZPirveysian@aqmd.gov>; Sylvia.Vanderspek (Sylvia.Vanderspek@arb.ca.gov) <Sylvia.Vanderspek@arb.ca.gov>; Kelly, ThomasP <Kelly.ThomasP@epa.gov>
Subject: Coachella Valley Attainment Plan for 1997 Ozone NAAQS

Hi Kalam,

I think you may have already received this . . .

Thank you for the opportunity to comment on the Draft Coachella Valley Extreme Area Plan for the 1997 8-hour Ozone Standard (Draft Extreme Area Plan). The Draft Extreme Area Plan shows that NO_X emissions from trains will be cut from 2.4 tons per day (tpd) in 2018 to 1.7 tpd in 2023 (see Figures 3-8 and 3-9). The California Air Resources Board (CARB) has recently revised its estimates for locomotive emissions, particularly those associated with freight. (These revisions were discussed in CARB's Public Workshop for 2020 Locomotive Emission Inventory on September 3, 2020.) If the emissions estimates in the Draft Extreme Area Plan are not consistent with CARB's recent revisions for locomotive emissions, the final plan should include a revised estimate and a discussion of the significance of any change in projected emissions for the attainment demonstration. 1-1

Please let me know if you have any questions or concerns.

Thank you!
Anita

Anita Lee, PhD
Manager | Planning Office (ARD-2) | Air and Radiation Division | US EPA - Region 9
Desk: (415) 972-3958 | Work Cell: (415) 231-4710
Pronouns (she/hers)

Response to Comment 1-1
CARB is in the process of revising the emission estimates for locomotives. Draft estimates were presented at the September 3, 2020 workshop. CARB staff are still in the process of updating this information. Once the emission estimates are finalized, CARB staff will document the update and include the information in subsequent SIPs. The difference in the total locomotive NOx emissions between the CARB's draft estimates and the emissions included in this Plan is approximately 2.3 tons per day in 2023. Even if these increased emissions were considered, it will not affect the attainment of the 1997 8-hour ozone standard by 2023.

Comment Letter #2

Rebecca Zaragoza, Leadership Counsel for Justice and Accountability

October 13, 2020

October 13, 2020

Kalam Cheung, Program Supervisor
Planning, Rule Development, and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Submitted Via Email

RE: Draft Coachella Valley Extreme Area Plan for the 1997 8-Hour Ozone National Ambient Air Quality Standard

Dear Program Supervisor Cheung:

On behalf of Leadership Counsel for Justice and Accountability (Leadership Counsel), we thank you for the opportunity to provide comments on the Draft Coachella Valley Extreme Area Plan for the 1997 8-Hour Ozone National Ambient Air Quality Standard (draft Plan). Leadership Counsel has engaged in the Eastern Coachella Valley (ECV) on several environmental justice and public health issues for over seven years. Since 2017, we have been extremely active within the AB 617 implementation process both at the state and local levels. Below we outline the concerns and recommendations that we have regarding the draft Plan. 2-1

Climate Change

According to the draft Plan, one of the primary causes of unusually high ozone levels in the Coachella Valley were due to "higher temperatures and stagnant weather conditions" (ES-1). This is an ongoing concern for the Coachella Valley, especially due to the increasingly hotter summer months, but also because of how rising temperatures are connected to climate change. We understand that the growing number of extreme heat days and hotter temperatures in recent years has contributed to the Coachella Valley's inability to meet attainment. However, the draft Plan does not outline steps to address the impacts of climate change on local ozone levels. It is crucial for the air district to expand its mitigation and adaptation efforts within the Coachella Valley, particularly in the communities of Coachella, Thermal, Oasis, Mecca, and North Shore. 2-2

Control Strategy

Since the reclassification was presented to the community in 2019, Leadership Counsel has continuously expressed our concerns with the draft Plan's Control Strategy of focusing the implementation of emission reduction strategies primarily in the South Coast Air Basin in order to reduce ozone levels in the Coachella Valley. While we understand the amount of emissions originating in the South Coast Air Basin contributes to non-attainment in the Coachella Valley, South Coast AQMD must take action within the Coachella Valley to improve air quality and public health.

In previous comments and through our participation in the public Consultation meetings, we have elevated the need for South Coast AQMD to enhance its mitigation and adaptation strategies that will simultaneously help reduce emissions locally and reduce the impacts that residents in the Coachella Valley will feel until attainment is reached. Developing and implementing diverse mitigation and adaptation strategies will help create healthier living conditions for residents in the Coachella Valley. These strategies, as have been discussed in AB 617 meetings, include air filtration in homes, schools, and workplaces; enhanced greening near sensitive receptors; and other protective measures that can block emissions from reaching residents. 2-3

The draft Plan also identifies that CARB and the U.S. EPA have primary jurisdiction over sources that contribute to 92% of the NOx emissions in the Coachella Valley. Given overlapping jurisdiction considerations, South Coast AQMD should also include coordination and collaboration strategies in the draft Plan to ensure emission sources are reduced. 2-4

In addition, we urge South Coast AQMD to strengthen its enforcement and regulatory actions on emission sources that are contributing to high ozone levels in the Coachella Valley. These actions should be implemented in the South Coast Air Basin, but also locally in the Coachella Valley. The draft Plan should include these actions and detail how South Coast AQMD plans on strengthening those even after attainment is reached. One strategy includes limiting indirect emissions from development sources and strengthening South Coast AQMD's Indirect Source Rule. This can be addressed by promoting more effective and enforceable emission reduction measures, as well as implementing a fee mechanism for pollution not mitigated on-site. 2-5

In terms of the Eastern Coachella Valley, the draft Plan must also make the distinction between Thermal, Oasis, Mecca, and North Shore. Although the communities share zip codes, it's important to identify them by name as they also have varying differences and experiences to air pollution exposure. 2-6

AB 617 and Air Monitoring

Another deficiency that affects our knowledge and understanding of ozone pollution and other air quality concerns in the Coachella Valley is the limited air monitoring. South Coast AQMD's ozone monitoring is done in Palm Springs and Indio. As a result, the draft Plan identifies these two areas as having the highest concentration of ozone levels in the region. As part of the AB 617 program implementation in the ECV, we recommend that the Community Air Monitoring Plan expand the district's ozone monitors to reach this region, especially the unincorporated communities.

2-6 (continued)

Incentive Funding

The draft Plan also outlines the opportunities of incentive funding as a way to reduce emissions. Recently, South Coast AQMD staff also announced that they would be receiving $70 million in AB 617 incentive funding that can be used throughout the different AB 617 communities within their jurisdiction. In conjunction with CARB's other incentive funding, South Coast AQMD should enhance its partnership efforts with local businesses and residents to encourage and ensure that these incentive funding programs are being used. In the past, we have not seen these programs used and South Coast AQMD should develop a tracking and evaluation system for how these funds are being used and what benefits they bring after implementation.

South Coast AQMD has a great opportunity to be proactive in its mission to protect our air quality and public health in all its jurisdiction, but particularly to increase its presence and efficacy in efforts within the Coachella Valley. Whether emissions are higher in urban areas, South Coast AQMD must also be providing mitigation and adaptation support to the region that's being equally exposed to these emissions. Climate change is already having a strong impact on vulnerable populations and South Coast AQMD's planning towards emission reduction should include ways of addressing the impacts of climate change.

2-7

Sincerely,

Rebecca Zaragoza
Senior Policy Advocate
Leadership Counsel for Justice and Accountability

Response to Comment 2-1
Thank you for your active participation and for providing comments on the Draft Coachella Valley Extreme Area Ozone Plan (Plan).

Response to Comment 2-2
As noted in the Plan, the unusually high ozone levels in 2017 and 2018, which were attributed to meteorological factors such as higher temperatures and stagnant weather conditions, were observed not only in the Coachella Valley, but also in the South Coast Air Basin, across California, and the Western United States. These conditions were conducive to the increased ozone concentrations because of higher rate of photochemical reactions in the atmosphere and/or changes in emissions (e.g., biogenic VOC emissions) associated with higher temperatures. The year-to-year variability in ozone is not uncommon in the historical record and a temporary increase in ozone is not necessarily reflective of a long-term trend. In fact, in 2019, the ozone concentrations were lower compared to 2017 and 2018. Also, despite the high temperatures observed in the Coachella Valley this year, the preliminary three-year averaged design value[32] in 2020 is at 88 ppb, slightly lower than the 2019 design value (89 ppb), indicating that the Coachella Valley is on a downward trend toward attaining the 1997 8-hour ozone standard.

In order to evaluate the impact of meteorological factors and trends contributing to poor air quality, the South Coast AQMD initiated a study in 2019, which is currently underway and will hopefully advance our understanding of recent weather trends and their impact on air quality.

Response to Comment 2-3
Regional air quality modeling confirms that the high ozone levels observed in Coachella Valley are primarily attributed to the direct transport of ozone and its precursors (VOC and NOx) from the South Coast Air Basin (Basin) to the Coachella Valley and that the impact of local emission sources are not significant. Our recent modeling sensitivity analysis has also demonstrated that the Coachella Valley would not meet the 1997 8-hour ozone standard even if all local anthropogenic emissions were completely eliminated. Therefore, measures reducing local emissions would have very limited impact on ozone levels in the Coachella Valley.

The anticipated emission reductions from the existing (and recently adopted) rules and regulations adopted by South Coast AQMD and CARB with future effective dates will ensure that the Coachella Valley will meet the 1997 8-hour ozone standard in or before 2023.

With respect to local air quality issues associated with other pollutants, South Coast AQMD has been working to reduce exposure to harmful air pollutants in the Coachella Valley area. The local air quality improvement efforts will be further evaluated as part of the AB 617 Community Emission Reduction Plans (CERPs). South Coast AQMD staff will continue to consider and implement feasible mitigation measures and control strategies to help reduce local emissions and to minimize impact to the residents.

Response to Comment 2-4
The Plan reflects already adopted mobile and stationary source programs and regulations to meet the 8-hour ozone standard in Coachella Valley by 2023. Existing rules and regulations adopted by

[32] Design value is defined as the 3-year average of the fourth highest daily max 8-hour average ozone in each year.

South Coast AQMD and CARB, as well as recently adopted regulations, will continue to reduce emissions in both the South Coast Air Basin and the Coachella Valley until and beyond the attainment year of 2023. Examples of existing mobile source regulations include CARB's On-Road Heavy-Duty Diesel Vehicles Regulation (also known as the Truck and Bus regulation) and Off-Road Diesel-Fueled Fleets Regulation which will result in significant reduction of NOx and PM2.5 emissions in both the Basin and the Coachella Valley. Refer to Chapter 4 of this Plan for more details on the existing and recently adopted rules and regulations. On-going additional emission reductions from mobile sources will be critical for meeting the 2008 8-hour ozone standards in the Basin and the Coachella Valley. As part of the development of 2022 AQMP, South Coast AQMD staff will continue to work with state and federal agencies to identify and implement new mobile source strategies.

Response to Comment 2-5

South Coast AQMD develops regional air quality management plans (AQMPs) that provide the blueprint to achieve the federal ambient air quality standards. The 2016 AQMP is the most recently adopted plan developed to provide a pathway to attain the 2008 ozone standard in the Coachella Valley by 2026 and in the South Coast Air Basin by 2031. The emission reduction strategies included in the 2016 AQMP go beyond the attainment year of 2023 and continue to 2031 and beyond, providing continued emission reductions in Coachella Valley. With respect to indirect mobile sources, the 2016 AQMP included five facility-based mobile source control measures targeting warehouse distribution centers, commercial airports, new or redevelopment projects, commercial marine ports, and railyard and intermodal facilities. The Proposed Rule 2305 (Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program), currently under development, will benefit both the South Coast Air Basin and the Coachella Valley. Mitigation fees are among the strategies that are being considered in the proposed rule.

Response to Comment 2-6

As discussed previously and also in this Plan, ozone is a regional pollutant and the high ozone levels observed in Coachella Valley are primarily attributed to regional transport. The Palm Springs and Indio air monitoring stations are strategically situated predominantly downwind of the densely populated Basin and predominantly downwind of the populated areas of the Coachella Valley, respectively, to represent the Coachella Valley's ozone air quality. Due to meteorology and close proximity to South Coast Air Basin, peak ozone levels occur in the northern and western Coachella Valley with concentrations lower further south and east. Palm Springs, located further west in the Coachella Valley, consistently shows higher levels of ozone than Indio, which is located southeast of Palm Springs, consistent with the results from air quality modeling. Locations even further east are expected to experience lower ozone levels than Indio. Therefore, the two existing monitors capture the highest ozone levels in Coachella Valley. However, additional air monitoring efforts are being considered as part of the AB 617 Eastern Coachella Valley CERPs.

Response to Comment 2-7

Incentive funding programs are extremely effective in accelerating the implementation of cleaner technologies and achieving emission reductions faster than regulations can achieve. The air quality benefits resulting from major incentive programs, such as the Carl Moyer program, the lawnmower and leaf blower exchange programs, and the Surplus Off-Road Opt-in (SOON) program, have been

quantified and described in the 2016 AQMP. As part of the Community Air Protection Program (CAPP), incentives program projects have been implemented in the Eastern Coachella Valley. AB 617 funding used for incentive projects for the Eastern Coachella Valley in 2018 and 2019 have been quantified and tracked, resulting in the emission reductions in the table below.

	Estimated Annual Emission Reduction (tpy)			Total CAPP Year 1 & Year 2 Funds
	NOx	Diesel PM	VOC	
Eastern Coachella Valley	63.1	5.3	7.5	$ 13,696,476.03

A list of projects selected through the CAPP Incentives Program are available at http://www.aqmd.gov/home/programs/business/community-air-protection-incentives#. As incentive projects continue to be implemented, they will continue to be tracked as part of the AB 617 program. Additionally, new CAPP incentive funds will be available (i.e., Year 3 CAPP incentives). The AB 617 Eastern Coachella Valley CERP is still under development and will likely include incentive strategies as part of the CERP.

In addition, the South Coast AQMD has designated $966,667 in Governing Board approved mitigation funding, along with additional co-funding from contractor obtained partnerships, to provide energy efficiency enhancement upgrades for residential homes within designated Environmental Justice areas in Indio and in the Coachella Valley. These upgrades will result in less energy required to cool and heat homes and less emissions from fuel combustion.

South Coast AQMD currently offers several financial incentives and programs for implementing new clean air technologies. For details of these programs, please visit our website at: http://www.aqmd.gov/home/programs. South Coast AQMD will continue to enhance its partnership efforts with local businesses and residents to encourage and ensure that the incentive funding programs are being used. In terms of climate change, as described in Response to Comment 2-2, a comprehensive meteorological study is currently underway to evaluate the impact of meteorological factors and trends conducive to poor air quality.

Appendix I

Emissions Inventory by Major Source Category

- 2002
- 2018
- 2020
- 2023

Baseline Planning Inventory for 2002 (Tons/Day)

		Source Category	VOC	NOx
Fuel Combustion				
	10	Electric Utilities	0.00	0.06
	50	Manufacturing and Industrial	0.06	0.15
	52	Food and Agricultural Processing	0.00	0.01
	60	Service and Commercial	0.15	0.51
	99	Other (Fuel Combustion)	0.01	0.14
Total Fuel Combustion			**0.23**	**0.87**
Waste Disposal				
	110	Sewage Treatment	0.00	0.00
	130	Incineration	0.00	0.01
	199	Other (Waste Disposal)	0.53	0.00
Total Waste Disposal			**0.53**	**0.01**
Cleaning and Surface Coatings				
	210	Laundering	0.00	0.00
	220	Degreasing	0.22	0.00
	230	Coatings and Related Processes	0.81	0.00
	240	Printing	0.04	0.00
	250	Adhesives and Sealants	0.10	0.00
	299	Other (Cleaning and Surface Coatings)	0.03	0.00
Total		**Cleaning and Surface Coatings**	**1.19**	**0.00**
Petroleum Production and Marketing				
	330	Petroleum Marketing	0.50	0.00
		Other (Petroleum Production and Marketing)	0.00	0.00
Total Petroleum Production and Marketing			**0.50**	**0.00**
Industrial Processes				
	410	Chemical	0.01	0.00
	420	Food and Agriculture	0.01	0.00
	430	Mineral Processes	0.01	0.00
	450	Wood and Paper	0.00	0.00
		Electronics	0.01	0.00
	499	Other (Industrial Processes)	0.11	0.00
Total Industrial Processes			**0.15**	**0.00**
Solvent Evaporation				
	510	Consumer Products	2.48	0.00
	520	Architectural Coatings and Related Solvent	1.39	0.00
	530	Pesticides/Fertilizers	0.92	0.00
	540	Asphalt Paving/Roofing	0.02	0.00
Total Solvent Evaporation			**4.82**	**0.00**

(Continued)
Baseline Planning Inventory for 2002 (Tons/Day)

		Source Category	VOC	NOx
Miscellaneous Processes				
	610	Residential Fuel Combustion	0.09	0.50
	620	Farming Operations	0.07	0.00
	630	Construction and Demolition	0.00	0.00
	640	Paved Road Dust	0.00	0.00
	645	Unpaved Road Dust	0.00	0.00
	650	Fugitive Windblown Dust	0.00	0.00
	660	Fires	0.01	0.00
	670	Waste Burning and Disposal	0.02	0.02
	690	Cooking	0.02	0.00
	699	Other (Miscellaneous Processes	0.00	0.00
Total Miscellaneous Processes			**0.22**	**0.52**
On-Road Motor Vehicles				
	710	Light Duty Passenger	4.56	3.86
	722	Light Duty Trucks-1 (up to 3750 lb.)	1.04	0.98
	723	Light Duty Trucks-2 (3751 to 5750 lb.)	1.32	2.13
	724	Medium Duty Trucks (5751-8500 lb.)	0.95	1.62
	732	Light Heavy Duty Gas Trucks-1 (8501-10000 lb.)	0.23	0.27
	733	Light Heavy Duty Gas Trucks-2 (10001-14000 lb.)	0.03	0.04
	734	Medium Heavy Duty Gas Trucks (14001-33000 lb.)	0.33	0.02
	736	Heavy Heavy Duty Gas Trucks (>33000 lb.)	0.03	0.10
	742	Light Heavy Duty Diesel Trucks-1 (8501-10000 lb.)	0.01	0.79
	743	Light Heavy Duty Diesel Trucks-2 (10001-14000 lb.)	0.00	0.26
	744	Medium Heavy Duty Diesel Trucks (14001-33000 lb.)	0.12	2.43
	746	Heavy Heavy Duty Diesel Trucks (>33001 lb.)	1.52	28.07
	750	Motorcycles	0.26	0.05
	760	Heavy Duty Diesel Urban Buses	0.01	0.14
	762	Heavy Duty Gas Urban Buses	0.00	0.00
	771	School Buses - Gas	0.01	0.01
	772	School Buses - Diesel	0.01	0.10
	777	Other Buses - Gas	0.00	0.02
	778	Other Buses - Motor Coach - Diesel	0.00	0.04
	779	All Other Buses - Diesel	0.00	0.04
	780	Motor Homes	0.02	0.09
Total On-Road Motor Vehicles			**10.47**	**41.07**
Other Mobile Sources				
	810	Aircraft	0.06	0.16
	820	Trains	0.35	6.27
	840	Recreational Boats	1.14	0.16
	850	Off-Road Recreational Vehicles	0.37	0.00
	860	Off-Road Equipment	2.14	4.53
	870	Farm Equipment	0.15	0.66
	890	Fuel Storage and Handling	0.54	0.00
Total Other Mobile Sources			**4.76**	**11.77**
Entrained Road Dust				
		Paved Road Dust	0.00	0.00
		Unpaved Road and Travel Dust	0.00	0.00
Total Entrained Road Dust			**0.00**	**0.00**
Total		Stationary and Area Sources	7.63	1.40
Total		On-Road Vehicles	10.47	41.07
Total		Other Mobile	4.76	11.77
Total		Entrained Road Dust	0.00	0.00
Total - All Sources			**22.85**	**54.24**

Baseline Planning Inventory for 2018 (Tons/Day)

		Source Category	VOC	NOx
Fuel Combustion				
	10	Electric Utilities	0.01	0.11
	50	Manufacturing and Industrial	0.16	0.29
	52	Food and Agricultural Processing	0.00	0.00
	60	Service and Commercial	0.12	0.30
	99	Other (Fuel Combustion)	0.01	0.63
Total Fuel Combustion			**0.31**	**1.33**
Waste Disposal				
	110	Sewage Treatment	0.01	0.00
	130	Incineration	0.00	0.00
	199	Other (Waste Disposal)	0.96	0.00
Total Waste Disposal			**0.97**	**0.00**
Cleaning and Surface Coatings				
	210	Laundering	0.00	0.00
	220	Degreasing	0.26	0.00
	230	Coatings and Related Processes	1.28	0.00
	240	Printing	0.02	0.00
	250	Adhesives and Sealants	0.23	0.00
	299	Other (Cleaning and Surface Coatings)	0.02	0.00
Total Cleaning and Surface Coatings			**1.82**	**0.00**
Petroleum Production and Marketing				
	330	Petroleum Marketing	0.34	0.00
Total Petroleum Production and Marketing			**0.34**	**0.00**
Industrial Processes				
	410	Chemical	0.08	0.00
	420	Food and Agriculture	0.03	0.00
	430	Mineral Processes	0.02	0.00
	440	Metal Processes	0.00	0.00
	450	Wood and Paper	0.00	0.00
	499	Other (Industrial Processes)	0.07	0.00
Total Industrial Processes			**0.21**	**0.00**
Solvent Evaporation				
	510	Consumer Products	2.58	0.00
	520	Architectural Coatings and Related Solvent	0.36	0.00
	530	Pesticides/Fertilizers	0.31	0.00
	540	Asphalt Paving/Roofing	0.06	0.00
Total Solvent Evaporation			**3.32**	**0.00**

(Continued)
Baseline Planning Inventory for 2018 (Tons/Day)

Source Category			VOC	NOx
Miscellaneous Processes				
	610	Residential Fuel Combustion	0.09	0.26
	620	Farming Operations	0.07	0.00
	630	Construction and Demolition	0.00	0.00
	640	Paved Road Dust	0.00	0.00
	645	Unpaved Road Dust	0.00	0.00
	650	Fugitive Windblown Dust	0.00	0.00
	660	Fires	0.01	0.00
	670	Waste Burning and Disposal	0.01	0.00
	690	Cooking	0.05	0.00
	699	Other (Miscellaneous Processes	0.00	0.00
Total Miscellaneous Processes			**0.22**	**0.26**
On-Road Motor Vehicles				
	710	Light Duty Passenger	1.24	0.65
	722	Light Duty Trucks-1 (up to 3750 lb.)	0.41	0.24
	723	Light Duty Trucks-2 (3751 to 5750 lb.)	0.67	0.56
	724	Medium Duty Trucks (5751-8500 lb.)	0.65	0.57
	732	Light Heavy Duty Gas Trucks-1 (8501-10000 lb.)	0.10	0.08
	733	Light Heavy Duty Gas Trucks-2 (10001-14000 lb.)	0.02	0.02
	734	Medium Heavy Duty Gas Trucks (14001-33000 lb.)	0.03	0.06
	736	Heavy Heavy Duty Gas Trucks (>33000 lb.)	0.00	0.00
	742	Light Heavy Duty Diesel Trucks-1 (8501-10000 lb.)	0.01	0.39
	743	Light Heavy Duty Diesel Trucks-2 (10001-14000 lb.)	0.00	0.15
	744	Medium Heavy Duty Diesel Trucks (14001-33000 lb.)	0.05	1.09
	746	Heavy Heavy Duty Diesel Trucks (>33001 lb.)	0.28	7.08
	750	Motorcycles	0.41	0.09
	760	Heavy Duty Diesel Urban Buses	0.01	0.04
	762	Heavy Duty Gas Urban Buses	0.00	0.00
	771	School Buses - Gas	0.00	0.00
	772	School Buses - Diesel	0.00	0.08
	777	Other Buses - Gas	0.00	0.01
	778	Other Buses - Motor Coach - Diesel	0.00	0.02
	779	All Other Buses - Diesel	0.00	0.02
	780	Motor Homes	0.00	0.03
Total On-Road Motor Vehicles			**3.89**	**11.18**
Other Mobile Sources				
	810	Aircraft	0.08	0.24
	820	Trains	0.10	2.36
	840	Recreational Boats	0.60	0.13
	850	Off-Road Recreational Vehicles	0.40	0.01
	860	Off-Road Equipment	1.78	2.46
	870	Farm Equipment	0.08	0.37
	890	Fuel Storage and Handling	0.25	0.00
Total Other Mobile Sources			**3.30**	**5.56**
Entrained Road Dust				
		Paved Road Dust	0.00	0.00
		Unpaved Road and Travel Dust	0.00	0.00
Total Entrained Road Dust			**0.00**	**0.00**
Total		Stationary and Area Sources	**7.19**	**1.59**
Total		On-Road Vehicles	**3.89**	**11.18**
Total		Other Mobile	**3.30**	**5.56**
Total		Entrained Road Dust	**0.00**	**0.00**
Total - All Sources			**14.38**	**18.33**

Baseline Planning Inventory for 2020 (Tons/Day)

		Source Category	VOC	NOx
Fuel Combustion				
	10	Electric Utilities	0.00	0.05
	50	Manufacturing and Industrial	0.18	0.34
	52	Food and Agricultural Processing	0.00	0.00
	60	Service and Commercial	0.14	0.37
	99	Other (Fuel Combustion)	0.00	0.08
Total Fuel Combustion			**0.33**	**0.84**
Waste Disposal				
	110	Sewage Treatment	0.00	0.00
	130	Incineration	0.00	0.03
	199	Other (Waste Disposal)	1.03	0.00
Total Waste Disposal			**1.04**	**0.03**
Cleaning and Surface Coatings				
	210	Laundering	0.01	0.00
	220	Degreasing	0.31	0.00
	230	Coatings and Related Processes	1.43	0.00
	240	Printing	0.03	0.00
	250	Adhesives and Sealants	0.27	0.00
	299	Other (Cleaning and Surface Coatings)	0.03	0.00
Total Cleaning and Surface Coatings			**2.07**	**0.00**
Petroleum Production and Marketing				
	330	Petroleum Marketing	0.43	0.00
Total Petroleum Production and Marketing			**0.43**	**0.00**
Industrial Processes				
	410	Chemical	0.10	0.00
	420	Food and Agriculture	0.03	0.00
	430	Mineral Processes	0.02	0.00
	440	Metal Processes	0.00	0.00
	450	Wood and Paper	0.00	0.00
	499	Other (Industrial Processes)	0.08	0.01
Total Industrial Processes			**0.23**	**0.01**
Solvent Evaporation				
	510	Consumer Products	2.66	0.00
	520	Architectural Coatings and Related Solvent	0.38	0.00
	530	Pesticides/Fertilizers	0.30	0.00
	540	Asphalt Paving/Roofing	0.08	0.00
Total Solvent Evaporation			**3.42**	**0.00**

(Continued)
Baseline Planning Inventory for 2020 (Tons/Day)

Source Category			VOC	NOx
Miscellaneous Processes				
	610	Residential Fuel Combustion	0.09	0.26
	620	Farming Operations	0.07	0.00
	630	Construction and Demolition	0.00	0.00
	640	Paved Road Dust	0.00	0.00
	645	Unpaved Road Dust	0.00	0.00
	650	Fugitive Windblown Dust	0.00	0.00
	660	Fires	0.01	0.00
	670	Waste Burning and Disposal	0.01	0.00
	690	Cooking	0.05	0.00
	699	Other (Miscellaneous Processes	0.00	0.00
Total Miscellaneous Processes			**0.22**	**0.26**
On-Road Motor Vehicles				
	710	Light Duty Passenger	1.03	0.51
	722	Light Duty Trucks-1 (up to 3750 lb.)	0.33	0.18
	723	Light Duty Trucks-2 (3751 to 5750 lb.)	0.58	0.43
	724	Medium Duty Trucks (5751-8500 lb.)	0.57	0.43
	732	Light Heavy Duty Gas Trucks-1 (8501-10000 lb.)	0.08	0.06
	733	Light Heavy Duty Gas Trucks-2 (10001-14000 lb.)	0.02	0.01
	734	Medium Heavy Duty Gas Trucks (14001-33000 lb.)	0.02	0.05
	736	Heavy Heavy Duty Gas Trucks (>33000 lb.)	0.00	0.00
	742	Light Heavy Duty Diesel Trucks-1 (8501-10000 lb.)	0.01	0.30
	743	Light Heavy Duty Diesel Trucks-2 (10001-14000 lb.)	0.00	0.12
	744	Medium Heavy Duty Diesel Trucks (14001-33000 lb.)	0.04	0.92
	746	Heavy Heavy Duty Diesel Trucks (>33001 lb.)	0.22	6.27
	750	Motorcycles	0.41	0.09
	760	Heavy Duty Diesel Urban Buses	0.00	0.01
	762	Heavy Duty Gas Urban Buses	0.00	0.00
	771	School Buses - Gas	0.00	0.00
	772	School Buses - Diesel	0.00	0.08
	777	Other Buses - Gas	0.00	0.00
	778	Other Buses - Motor Coach - Diesel	0.00	0.01
	779	All Other Buses - Diesel	0.00	0.02
	780	Motor Homes	0.00	0.03
Total On-Road Motor Vehicles			**3.33**	**9.53**
Other Mobile Sources				
	810	Aircraft	0.08	0.26
	820	Trains	0.07	2.08
	840	Recreational Boats	0.54	0.12
	850	Off-Road Recreational Vehicles	0.40	0.01
	860	Off-Road Equipment	1.82	2.31
	870	Farm Equipment	0.07	0.33
	890	Fuel Storage and Handling	0.24	0.00
Total Other Mobile Sources			**3.23**	**5.10**
Entrained Road Dust				
		Paved Road Dust	0.00	0.00
		Unpaved Road and Travel Dust	0.00	0.00
Total Entrained Road Dust			**0.00**	**0.00**
Total		Stationary and Area Sources	**7.74**	**1.14**
Total		On-Road Vehicles	**3.33**	**9.53**
Total		Other Mobile	**3.23**	**5.10**
Total		Entrained Road Dust	**0.00**	**0.00**
Total - All Sources			**14.30**	**15.77**

Baseline Planning Inventory for 2023 (Tons/Day)

	Source Category	VOC	NOx
Fuel Combustion			
10	Electric Utilities	0.00	0.05
50	Manufacturing and Industrial	0.20	0.38
60	Service and Commercial	0.14	0.37
99	Other (Fuel Combustion)	0.00	0.08
Total Fuel Combustion		**0.35**	**0.89**
Waste Disposal			
110	Sewage Treatment	0.00	0.00
130	Incinerators	0.00	0.03
199	Other (Waste Disposal)	1.23	0.00
Total Waste Disposal		**1.23**	**0.03**
Cleaning and Surface Coatings			
210	Laundering	0.01	0.00
220	Degreasing	0.35	0.00
230	Coatings and Related Process Solvents	1.55	0.00
240	Printing	0.03	0.00
250	Sealants & Adhesives	0.30	0.00
299	Other (Cleaning and Surface Coatings)	0.03	0.00
Total Cleaning and Surface Coatings		**2.27**	**0.00**
Petroleum Production and Marketing			
330	Petroleum Marketing	0.42	0.00
Total Petroleum Production and Marketing		**0.42**	**0.00**
Industrial Processes			
410	Chemical	0.11	0.00
420	Food and Agriculture	0.03	0.00
430	Mineral Processes	0.03	0.00
440	Metal Processes	0.00	0.00
450	Wood and Paper	0.00	0.00
499	Other (Industrial Processes)	0.08	0.01
Total Industrial Processes		**0.25**	**0.01**
Solvent Evaporation			
510	Consumer Products	2.80	0.00
520	Architectural Coatings and Related Solvents	0.40	0.00
530	Pesticides/Fertilizers	0.29	0.00
540	Asphalt Paving/Roofing	0.08	0.00
Total Solvent Evaporation		**3.57**	**0.00**

(Continued)
Baseline Planning Inventory for 2023 (Tons/Day)

		Source Category	VOC	NOx
Miscellaneous Processes				
	610	Residential Fuel Combustion	0.09	0.25
	620	Farming Operations	0.07	0.00
	630	Construction and Demolition	0.00	0.00
	650	Fugitive Windblown Dust	0.00	0.00
	660	Fires	0.01	0.00
	670	Waste Burning and Disposal	0.01	0.00
	690	Cooking	0.05	0.00
	699	Other (Miscellaneous Processes)	0.00	0.00
Total Miscellaneous Processes			**0.23**	**0.25**
On-Road Motor Vehicles				
	710	Light Duty Passenger	0.88	0.40
	722	Light Duty Trucks-1 (up to 3750 lb.)	0.28	0.14
	723	Light Duty Trucks-2 (3751 to 5750 lb.)	0.54	0.32
	724	Medium Duty Trucks (5751-8500 lb.)	0.50	0.30
	732	Light Heavy Duty Gas Trucks-1 (8501-10000 lb.)	0.06	0.05
	733	Light Heavy Duty Gas Trucks-2 (10001-14000 lb.)	0.01	0.01
	734	Medium Heavy Duty Gas Trucks (14001-33000 lb.)	0.02	0.04
	736	Heavy Heavy Duty Gas Trucks (>33000 lb.)	0.00	0.00
	742	Light Heavy Duty Diesel Trucks-1 (8501-10000 lb.)	0.01	0.20
	743	Light Heavy Duty Diesel Trucks-2 (10001-14000 lb.)	0.00	0.08
	744	Medium Heavy Duty Diesel Trucks (14001-33000 lb.)	0.00	0.43
	746	Heavy Heavy Duty Diesel Trucks (>33001 lb.)	0.14	4.65
	750	Motorcycles	0.44	0.10
	760	Heavy Duty Diesel Urban Buses	0.00	0.01
	762	Heavy Duty Gas Urban Buses	0.00	0.00
	771	School Buses - Gas	0.00	0.00
	772	School Buses - Diesel	0.00	0.08
	777	Other Buses - Gas	0.00	0.00
	778	Other Buses - Motor Coach - Diesel	0.00	0.01
	779	All Other Buses - Diesel	0.00	0.01
	780	Motor Homes	0.00	0.02
Total On-Road Motor Vehicles			**2.90**	**6.85**
Other Mobile Sources				
	810	Aircraft	0.08	0.28
	820	Trains	0.06	1.74
	840	Recreational Boats	0.46	0.11
	850	Off-Road Recreational Vehicles	0.37	0.01
	860	Commercial/Industrial Mobile Equipment	1.95	1.88
	870	Farm Equipment	0.06	0.28
	890	Fuel Storage and Handling	0.23	0.00
Total Other Mobile Sources			**3.22**	**4.30**
Entrained Road Dust				
		Paved Road Dust	0.00	0.00
		Unpaved Road and Travel Dust	0.00	0.00
Total Entrained Road Dust			**0.00**	**0.00**
Total		Stationary and Area Sources	**8.32**	**1.18**
Total		On-Road Vehicles	**2.90**	**6.85**
Total		Other Mobile	**3.22**	**4.30**
Total		Entrained Road Dust	**0.00**	**0.00**
Total - All Sources			**14.44**	**12.33**

Appendix II

South Coast AQMD Existing Rules and Regulations

TABLE II-1

South Coast AQMD Regulation IV (Prohibitions) Rules

Rule Number	Rule Title	Adoption Date
Rule 429	Start-Up and Shutdown Exemption Provisions for Oxides of Nitrogen	12/20/90
Rule 442	Usage of Solvents	12/15/20
Rule 443.1	Labeling of Materials Containing Organic Solvents	12/05/86
Rule 461	Gasoline Transfer and Dispensing	04/06/12
Rule 462	Organic Liquid Loading	05/14/99
Rule 463	Organic Liquid Storage	11/04/11
Rule 464	Wastewater Separators	12/07/90
Rule 465	Refinery Vacuum-Producing Devices or Systems	08/13/99
Rule 474	Fuel Burning Equipment - Oxides of Nitrogen	12/04/81

TABLE II-2

South Coast AQMD Regulation XI (Source Specific Standards) Rules

Rule Number	Rule Title	Adoption Date
Rule 1100	Implementation Schedule for NOx Facilities	01/10/20
Rule 1103	Pharmaceutical and Cosmetics Manufacturing Operations	03/12/19
Rule 1104	Wood Flat Stock Coating Operations	08/13/99
Rule 1106	Marine and Pleasure Craft Coatings	05/13/19
Rule 1107	Coating of Metal Parts and Products	02/07/20
Rule 1109	Emissions of Oxides of Nitrogen from Boilers and Process Heaters in Petroleum Refineries	08/05/88
Rule 1110.2	Emissions from Gaseous - and Liquid-Fueled Engines	11/01/19
Rule 1111	Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces	12/06/19
Rule 1112	Emissions of Oxides of Nitrogen from Cement Kilns	06/06/86
Rule 1113	Architectural Coatings	02/05/16
Rule 1115	Motor Vehicle Assembly Line Coating Operations	05/02/95
Rule 1117	Emissions of Oxides of Nitrogen from Glass Melting Furnaces	01/06/84
Rule 1118.1	Control of Emissions from Non-Refinery Flares	01/04/19
Rule 1121	Control of Nitrogen Oxides from Residential Type, Natural-Gas-Fired Water Heaters	09/03/04
Rule 1122	Solvent Degreasers	05/01/09
Rule 1124	Aerospace Assembly and Component Manufacturing Operations	09/21/01
Rule 1125	Metal Container, Closure, and Coil Coating Operations	03/07/08
Rule 1126	Magnet Wire Coating Operations	01/13/95
Rule 1127	Emission Reductions from Livestock Waste	08/06/04
Rule 1128	Paper, Fabric, and Film Coating Operations	03/08/96
Rule 1129	Aerosol Coatings	03/08/96
Rule 1130	Graphic Arts	05/02/14
Rule 1130.1	Screen Printing Operations	12/13/96
Rule 1131	Food Product Manufacturing and Processing Operations	06/06/03
Rule 1132	Further Control of VOC Emissions from High-Emitting Spray Booth Facilities	05/05/06
Rule 1133.3	Emission Reductions from Greenwaste Composting Operations	07/08/11
Rule 1135	Emissions of Oxides of Nitrogen from Electricity Generating Facilities	11/02/18
Rule 1135.1	Controlling of Emission of Oxides of Nitrogen from Electric Power Generating Equipment	03/10/82
Rule 1136	Wood Products Coatings	06/14/96
Rule 1138	Control of Emissions from Restaurant Operations	11/14/97
Rule 1143	Consumer Paint Thinners and Multi-Purpose Solvents	12/03/10
Rule 1144	Metalworking Fluids and Direct-Contact Lubricants	07/09/10
Rule 1145	Plastic, Rubber, Leather, and Glass Coatings	12/04/09
Rule 1146	Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters	12/07/18
Rule 1146.1	Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters	12/07/18
Rule 1146.2	Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters	12/07/18
Rue 1147	NOx Reductions from Miscellaneous Sources	07/07/17
Rule 1148.1	Oil and Gas Production Wells	09/04/15
Rule 1149	Storage Tank and Pipeline Cleaning and Degassing	05/02/08
Rule 1150.1	Control of Gaseous Emissions from Municipal Solid Waste Landfills	04/01/11
Rule 1151	Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations	09/05/14
Rule 1153	Commercial Bakery Ovens	01/13/95
Rule 1153.1	Emissions of Oxides of Nitrogen from Commercial Food Ovens	11/07/14
Rule 1159	Nitric Acid Units – Oxides of Nitrogen	11/06/85
Rule 1166	Volatile Organic Compound Emissions from Decontamination of Soil	05/11/01
Rule 1168	Adhesive and Sealant Applications	10/06/17
Rule 1171	Solvent Cleaning Operations	05/01/09
Rule 1173	Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants	02/06/09
Rule 1174	Control of Volatile Organic Compound Emissions from the Ignition of Barbecue Charcoal	10/05/90
Rule 1176	VOC Emissions from Wastewater Systems	09/13/96
Rule 1177	Liquefied Petroleum Gas Transfer and Dispensing	06/01/12
Rule 1178	Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities	04/06/18

TABLE II-3

South Coast AQMD Regulation XX (REgional CLean Air Incentives Market (RECLAIM)) Rules

Rule Number	Rule Title	Adoption Date
Rule 2000	General	05/06/05
Rule 2001	Applicability	07/12/19
Rule 2002	Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx)	10/05/18
Rule 2004	Requirements	04/06/07
Rule 2005	New Source Review for RECLAIM	12/04/15
Rule 2006	Permits	05/11/01
Rule 2007	Trading Requirements	04/06/07
Rule 2009	Compliance Plan for Power Producing Facilities	01/07/05
Rule 2009.1	Compliance Plan for Forecast Reports for Non Power Producing Facilities	05/11/01
Rule 2010	Administrative Remedies and Sanctions	04/06/07
Rule 2012	Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions	05/06/05
Rule 2015	Backstop Provisions	06/04/04
Rule 2020	RECLAIM Reserve	05/11/01

Appendix III

CARB Existing Regulations

Appendix III

CARB Existing Regulations

Board Action	Hearing Date
Procedures for the Exemption of Add-On and Modified Part(s) for On-Road Vehicles/Engines: The updated aftermarket part procedures incorporate language reflecting current vehicle and engine emissions related technologies and standards. It also clarifies the requirements to improve review, testing, and approval timing to get products to market sooner.	7/23/20
Advanced Clean Trucks Regulation: The requirements for truck manufacturers sell zero-emission trucks in California and a one time requirement for large entities to report about their facilities, types of truck services used, and fleet of vehicles.	6/25/20
Updates to the 2019 Architectural Coatings Suggested Control Measure: The amended 2019 Architectural Coatings Suggested Control Measure to add a new coating category for Photovoltaic Coatings and establish a limit on the volatile organic content of the coatings.	5/28/20
Amendments to the Regulation on the Commercialization of Alternative Diesel Fuels: The amendments to the ADF Regulation to reinforce the emissions certification testing requirements and require biodiesel additives and ADF formulations to be certified according to new certification procedures. The amendments reinforce the originally intended efficacy of additives or alternative diesel formulations certified to mitigate potential oxides of nitrogen (NOx) emissions increases from the use of biodiesel.	4/23/20
San Joaquin Valley Agricultural Equipment Incentive Measure: The San Joaquin Valley Agricultural Equipment Incentive Measure for submission to the United States Environmental Protection Agency as a revision to the California State Implementation Plan (SIP). The measure achieves SIP creditable emission reductions from agricultural equipment incentive projects.	12/13/19
Amendments to the Regulation for Limiting Ozone Emissions from Indoor Air Cleaning Devices: The amendments to the air cleaner regulation, which limits ozone emissions from air cleaning devices.	12/12/19
Control Measure for Ocean-Going Vessels At Berth: The Regulation would take effect in 2021 and is designed to achieve further emissions from vessels at berth to reduce adverse health impacts to communities surrounding ports and terminals throughout California. These benefits would be achieved by including new vessel categories (such as vehicle carriers and tanker vessels), new ports, and independent marine terminals.	12/5/19
Amendments to the Low Carbon Fuel Standard: The amendments to the Low Carbon Fuel Standard (LCFS) Regulation, focusing on strengthening the program's cost containment provisions and ensuring that LCFS residential charging credit revenue value benefits disadvantaged and low-income communities.	11/21/19
Zero-Emission Airport Shuttle Regulation: The regulation will transition combustion powered airport shuttles to zero-emission vehicles and will apply to private and public fixed destination shuttles that serve California's commercial airports.	6/27/19
Updates to the Architectural Coatings Suggested Control Measure: The updates to the SCM would reduce volatile organic compound (VOC) limits for several coating categories, create two new coatings categories, and set limits for colorants (tints) added to architectural coatings at the point of sale. The updated SCM would serve as a model rule and assist air districts in their efforts to further reduce VOC emissions to meet ambient air quality standards for ozone.	5/23/19
Amendments to the Regulation for the Certification of Vapor Recovery Systems for Cargo Tanks: The amendments to the Certification of Vapor Recovery Systems on Cargo Tanks Regulation that establish a regulatory mechanism to periodically evaluate program costs and subsequently adjust the certification fee to recover these costs, per the authority under the Health and Safety Code section 41962. In addition, the amendments will establish: (1) a requirement for a public meeting prior to adjusting fees, (2) an effective date of January 1 following a fee revision, (3) the cost of replacement decals, and (4) procedures to request a certification fee refund.	4/25/19
Amendments to the Red Sticker Program for Off-Highway Recreational Vehicles: The amendments to the Red Sticker Program for Off-Highway Recreation Vehicles (OHRV). OHRV are primarily used in public State parks and federally designated lands, as well as on private tracks. The goal of the amendments is to end the current red sticker program which allows for CARB certification of OHRV that do not meet emissions standards. The amendments include provisions that end the certification of new red sticker vehicles, end riding restrictions on public lands for existing red sticker vehicles, establish new OHRV emissions standards, and increase incentives for fleet emissions averaging and zero emission OHRV. The amendments are intended to cause emissions reductions from OHRV in California while ensuring availability for California dealers and riders.	4/25/19
Amendments to the On-Road Heavy-Duty Diesel-Fueled Residential and Commercial Solid Waste Collection Vehicles Regulation to Include Heavy Cranes: The amendments include two distinct changes to the regulation, (1) to ensure that compliant SWCVs do not experience registration delays at the California Department of Motor Vehicles due to recent changes in California law; (2) to provide a more cost-effective compliance option for specialized heavy cranes.	1/24/19

Board Action	Hearing Date
Innovative Clean Transit Regulation, a Replacement of the Fleet Rule for Transit Agencies: The Innovative Clean Transit (ICT) Regulation that requires California transit agencies to gradually transition their buses to zero-emission technologies. The ICT regulation is structured to allow transit agencies to take advantage of incentive programs by acting early and in a manner to implement plans that are best suited for their own situations.	12/14/18
California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation: The Cap-and-Trade Regulation amendments are intended to conform with the requirements in AB 398, respond to Board direction in Resolution 17-21, and enhance program implementation and oversight. The amendments include changes to provisions relating to free allocation for minimizing leakage and transition assistance, offsets usage limits and criteria related to direct environmental benefits in the State, and cost containment.	12/13/18
Amendments to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions: The Mandatory Reporting of Greenhouse Gas Emissions amendments are targeted revisions to clarify the existing regulation related to how entities report their greenhouse gas emissions to support the Cap-and-Trade Program, and to ensure the data that are collected for CARB's climate change programs are complete and accurate.	12/13/18
Revisions to On Board Diagnostic System Requirements, Including the Introduction of Real Emissions Assessment Logging, for Heavy Duty Engines, Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engine: The amendments to the heavy-duty (HD) On Board Diagnostic (OBD) and medium-duty OBD II requirements update the monitoring requirements for gasoline and diesel vehicles, to require more data parameters to be tracked and reported by the engine/vehicle, and to clarify and improve the regulation where necessary.	11/15/18
California Certification Procedures for Light-Duty Engine Packages for Use in New Light-Duty Specially-Produced Motor Vehicles for 2019 and Subsequent Model Years: The California Regulation and Certification Procedures for Light-Duty Engine Packages for Use In New Light-Duty Specially-Produced Motor Vehicles for 2019 And Subsequent Model Years.	10/25/18
Amendments to California Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks: The amendments to Vehicle Fill Pipe Specifications to help ensure new motor vehicle fill pipes are compatible and form a good seal with Phase II recovery nozzles that are certified for use at California gasoline stations as a means to reduce overpressure.	10/25/18
Amendments to Enhanced Vapor Recovery Regulations to Standardize Gas Station Nozzle Spout Dimensions to Help Address Storage Tank Overpressure: The amendments to Enhanced Vapor Recovery Regulations to standardize gas station nozzle spout dimensions to improve compatibility with newer motor vehicle fill pipes. This compatibility is necessary to reduce air ingestion at the nozzle, which will help reduce storage tank overpressure conditions.	10/25/18
Amendments to the Low-Emission Vehicle III Greenhouse Gas Emission Regulation: The amendments to the Low-Emission Vehicle III greenhouse gas emission regulation to clarify that the "deemed to comply" option for model years 2021 through 2025 is applicable only if the currently adopted federal regulations remain in effect.	9/27/18
Amendments to the Low Carbon Fuel Standard Regulation and to the Regulation on Commercialization of Alternative Diesel Fuels: The amendments designed to strengthen the Low Carbon Fuel Standard (LCFS) regulation through 2030 in line with the Senate Bill 32 greenhouse gas reduction goals. The amendments would enhance LCFS credit for zero-emission vehicle fueling infrastructure per Governor Brown's Executive Order B-48-18, a protocol to enable credit generation for carbon capture and sequestration projects, expand fuel types and vehicle applications to which the LCFS regulation applies (including adding alternative jet fuel), improve crediting for innovative actions at petroleum refineries, and establish an independent third-party verification and verifier accreditation system to ensure accuracy of LCFS reported data. The amendments also include a number of technical changes to improve, simplify, streamline, and clarify the regulation	9/27/18
Amendments to California Emission Control System Warranty Regulations and Maintenance Provisions for 2022 and Subsequent Model Year On-Road Heavy-Duty Diesel Vehicles with Gross Vehicle Weight Rating Greater Than 14,000 Pounds and Heavy-Duty Diesel Engines in Such Vehicles: The amendments to the California warranty and maintenance provisions for on-road heavy-duty (HD) diesel vehicles, and the engines used in such vehicles. Currently, because the warranty mileage period is disproportionate to the actual service lives of many modern HD vehicles and engines, vehicle owners have no incentive to pay for repairs of emissions-related problems that do not adversely affect fuel economy or performance, which results in additional emissions. The amendments lengthen both the existing warranty periods and minimum maintenance intervals so as to reduce emissions by incentivizing vehicle owners to perform required maintenance and to seek more timely repairs, and to encourage manufacturers to design and produce more durable parts.	6/28/18
Amendments to the Heavy-Duty Vehicle Inspection Program and Periodic Smoke Inspection Program: The amendments lower the allowable opacity limit for HD vehicles operating in California for both the HDVIP and PSIP, establish reporting requirements for the PSIP and smoke tester training requirements, and allow 2013 model year and newer engines to report on-board diagnostic data in lieu of performing the annual PSIP smoke test.	5/25/18
Amendments to the Consumer Products Regulation and Method 310: The amendments to the consumer products regulation established an alternate compliance option for multi-purpose lubricant (MPL) products.	5/25/18

Board Action	Hearing Date
Regulation for Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration and Foam End-Uses: The regulation provides prohibitions on the use of certain high-global warming potential hydrofluorocarbons (HFC) in stationary refrigeration and foam end-uses. The objective is to preserve HFC emissions reductions expected from the federal Significant New Alternatives Policy (SNAP) Rules for certain end-uses for which compliance dates have either already passed or are imminent.	3/23/18
Funding Agricultural Replacement Measures for Emission Reductions Program Guidelines: The Guidelines outline the California Air Resources Board's plans for expending these funds in a manner consistent with the legislative direction from two bills, existing statutes, and regulations. The Guidelines describe district funding allocations, eligible project categories and criteria, program implementation details, and the justification for these investments.	3/23/18
California Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles, and Proposed Amendments to the Tractor-Trailer Greenhouse Gas Regulation: The new, more stringent California Phase 2 GHG emission standards are largely harmonize with the federal Phase 2 standards, and proposed amendments to the Tractor-Trailer GHG regulation to harmonize California's Tractor-Trailer GHG regulation with the proposed Phase 2 trailer standards. The California Phase 2 GHG standards are needed to meet the mandates of both AB 32 and of SB 32, and the California HSC.	2/8/18
Amendments to the Airborne Toxic Control Measure For Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater – and to the Statewide Portable Equipment Registration Program Regulation: The amendments provide more time for cleaner engine replacement while preserving the expected emission reductions, and make other improvements to the ATCM. PERP will have corresponding amendments and make other improvements to the program.	11/16/17
Amendments to California's Evaluation Procedures for New Aftermarket Catalytic Converters: The amendments are for procedures used to evaluate and approve aftermarket catalytic converters designed for use on California passenger cars and trucks to allow them to be used for Low Emission Vehicle III emission standards.	9/28/17
Amendments to the Market-Based Compliance Mechanism Regulation (Cap-and-Trade Regulation): The amendments to the Cap-and-Trade Program extend major provisions of the Program beyond 2020, to broaden the Program through linkage with Ontario, Canada, to prevent emissions leakage in the most cost-effective manner through appropriate allocation to entities, to clarify compliance obligations for certain sectors, and to enhance ARB's ability to implement and oversee the Cap-and-Trade Program.	7/27/17
Amendments to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions: The amendments to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions are to ensure the reported GHG data are accurate and fully support the California Cap-and-Trade Regulation.	6/29/17
Revisions to the Carl Moyer Memorial Air Quality Standards Attainment Program Guidelines: The updated Carl Moyer Memorial Air Quality Standards Attainment Program 2017 Guidelines implement changes directed by Senate Bill 513 and redesign the Program to meet California's need to transition to the very low and zero-emission technologies of the future.	4/27/17
Amendments to the Evaporative Emission Requirements for Small Off-Road Engines: The amendments address to non-compliance of small off-road engines (SORE) with existing evaporative emission standards, as well as amendments to streamline the certification process by harmonizing where feasible with federal requirements.	11/17/16
Regulation to Provide Certification Flexibility for Innovative Heavy-Duty Engine and California Certification and Installation Procedures for Medium and Heavy-Duty Vehicle Hybrid Conversion Systems: This regulation's certification flexibility is tailored to encourage development and market launch of heavy-duty engines meeting California's optional low oxides of oxides of nitrogen emission standards, robust heavy-duty hybrid engines, and high-efficiency heavy-duty engines.	10/20/16
Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulations: The amendments would extend major provisions of the Regulation beyond 2020; link the Regulation with Ontario, Canada; continue cost-effective prevention of emission leakage through allowance allocations to entities; and enhance Program implementation and oversight.	9/22/16
Amendments to the Mandatory Reporting of Greenhouse Gas Emissions: The amendments are to ensure reported GHG data are accurate and fully support the California Cap on Greenhouse Gas Emissions and Market Based Compliance Mechanisms and comply with the U.S. EPA Clean Power Plan.	9/22/16
Amendments to the Large Spark-Ignition Engine Fleet Requirements Regulation: The amendment establish new reporting and labeling requirements and extend existing recordkeeping requirements. The regulatory amendments are expected to improve the reliability of the emission reductions projected for the existing LSI Fleet Regulation by increasing enforcement effectiveness and compliance rates.	7/21/16
Evaluation Procedure for New Aftermarket Diesel Particulate Filters Intended as Modified Parts for 2007 through 2009 Model Year On-Road Heavy-Duty Diesel Engines: The amendment would establish a path for exempting aftermarket modified part DPFs intended for 2007 through 2009 on-road heavy-duty diesel engines from the prohibitions of the current vehicle code. Also, incorporate a new procedure for the evaluation of such DPFs.	4/22/16

Board Action	Hearing Date
Amendments to the Regulation for Small Containers of Automotive Refrigerant: The amendments to the Regulation for Small Containers of Automotive Refrigerant clarify any existing requirement that retailers must transfer the unclaimed consumer deposits to the manufacturers, clarify how the manufacturers spend the money, set the refundable consumer deposit at $10, and require additional language on the container label.	4/22/16
Amendments to the Portable Fuel Container Regulation: Amendments to the Portable Fuel Container (PFC) regulation, which include requiring certification fuel to contain 10 percent ethanol, harmonizing aspects of the Board's PFC certification and test procedures with those of the U.S. EPA, revising the ARB's certification process, and streamlining, clarifying, and increasing the robustness of ARB's certification and test procedures.	2/18/16
Technical Status and Proposed Revisions to On-Board Diagnostic System Requirements and Associated Enforcement Provisions for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines (OBD II): Amendments to the OBD II regulations that update requirements to account for LEV III applications and monitoring requirements for gasoline and diesel vehicles, and clarify and improve the regulation; also, updates to the associated OBD II enforcement regulation to align it with the proposed amendments to the OBD II regulations and a minor amendment to the definition of "emissions-related part" in title 13, CCR section 1900.	9/25/15
2015 Low Carbon Fuel Standard (LCFS) Amendments (2 of 2): The Low Carbon Fuel Standard, which includes updates and revisions to the regulation now in effect. The regulation was first presented to the Board at its February 2015 public hearing, at which the Board directed staff to make modifications to the proposal.	9/24/15
Regulation on the Commercialization of Alternative Diesel Fuels (2 of 2): Regulation governing the introduction of alternative diesel fuels into the California commercial market, including special provisions for biodiesel.	9/24/15
CA Cap on GHG Emissions and Market-Based Compliance Mechanisms (2 of 2): Amendments to the Cap and Trade Regulation to include a new Rice Cultivation Compliance Offset Protocol and an update to the United States Forest Compliance Offset Protocol that would include project eligibility in parts of Alaska.	6/25/15
Intermediate Volume Manufacturer Amendments to the Zero Emission Vehicle Regulation (2 of 2): Amendments regarding intermediate volume manufacturer compliance obligations under the Zero Emission Vehicle regulation.	5/21/15
2015 Amendments to Certification Procedures for Vapor Recovery Systems at Gasoline Dispensing Facilities—Aboveground Storage Tanks and Enhanced Conventional Nozzles: Amendments would establish new performance standards and specifications for nozzles used at fleet facilities that exclusively refuel vehicles equipped with onboard vapor recovery systems, would provide regulatory relief for owners of certain existing aboveground storage tanks, and would ensure that mass-produced vapor recovery equipment matches the specifications of equipment evaluated during the ARB certification process.	4/23/15
Proposed Regulation for the Commercialization of Alternative Diesel Fuels (1 of 2): Regulation governing the introduction of alternative diesel fuels into the California commercial market, including special provisions for biodiesel. This is the first of two hearings on the item, and the Board will not take action to approve the proposed regulation.	2/19/15
Evaporative Emission Control Requirements for Spark-Ignition Marine Watercraft: Regulation for controlling evaporative emissions from spark-ignition marine watercraft. The proposed regulation will harmonize, to the extent feasible, with similar federal requirements, while adding specific provisions needed to support California's air quality needs.	2/19/15
2015 Low Carbon Fuel Standard (LCFS) Amendments (1 of 2): The amendments for the Low Carbon Fuel Standard includes a re-adoption of the existing Low Carbon Fuel Standard with updates and revisions. This is the first of two hearings on the item, and the Board will not take action to approve the proposed regulation.	2/19/15
CA Cap on GHG Emissions and Market-Based Compliance Mechanisms to Add the Rice Cultivation Projects and Updated U.S. Forest Projects Protocols (1 of 2): Updates to the Cap and Trade Regulation to include a new Rice Cultivation Compliance Offset Protocol and an update to the United States Forest Compliance Offset Protocol that would include project eligibility in parts of Alaska.	12/18/14
2014 Amendments to ZEV Regulation: Additional compliance flexibility to ZEV manufacturers working to bring advanced technologies to market.	10/23/14
LEV III Criteria Pollutant Requirements for Light- and Medium-Duty Vehicles the Hybrid Electric Vehicle Test Procedures, and the HD Otto-Cycle and HD Diesel Test Procedures: Applies to the 2017 and subsequent model years.	10/23/14
Amendments to Mandatory Reporting Regulation for Greenhouse Gases: Further align reporting methods with USEPA methods and factors, and modify reporting requirements to fully support implementation of California's Cap and Trade program.	9/19/14

Board Action	Hearing Date
Amendments to the California Cap on Greenhouse Gas Emissions and Market Based Compliance Mechanisms: Technical revisions to Mandatory Reporting of Greenhouse Gas Emissions Regulation to further align reporting methods with U.S.EPA update methods and factors, and modify reporting requirements to fully support implementation of California's Cap and Trade program.	9/18/14
Amendments to the AB 32 Cost of Implementation Fee Regulation: Amendments to the regulation to make it consistent with the revised mandatory reporting regulation, to add potential reporting requirements, and to incorporate requirements within the mandatory reporting regulation to streamline reporting.	9/18/14
Revisions to the Carl Moyer Memorial Air Quality Standards Attainment Program Guidelines for On-Road Heavy-Duty Trucks: Revisions to 1) reduce surplus emission reduction period, 2) reduce minimum CA usage requirement, 3) prioritize on-road funding to small fleets, 4) include light HD vehicles 14000-19500 libs, and 5) clarify program specifications.	7/24/14
Amendments to Enhanced Fleet Modernization (Car Scrap) Program: Amendments consistent with SB 459 which requires ARB to increase benefits for low-income California residents, promote cleaner replacement vehicles, and enhance emissions reductions.	6/26/14
Proposed Approval of Amendments to CA Cap on GHG Emissions and Market-Based Compliance Mechanisms : Second hearing of two, continued from October 2013.	4/24/14
Truck and Bus Rule Update: Amendments to the Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and Other Criteria Pollutants From In-Use On-Road Diesel-Fueled Vehicles: increasing low-use vehicle thresholds, allowing owners to newly opt-in to existing flexibility provisions, adjusting "NOx exempt" vehicle provisions, and granting additional time for fleets in certain areas to meet PM filter requirements.	4/24/14
Heavy-Duty GHG Phase I: On-Road Heavy-Duty GHG Emissions Rule, Tractor-Trailer Rule, Commercial Motor Vehicle Idling Rule, Optional Reduced Emission Standards, Heavy-Duty Hybrid-Electric Vehicles Certification Procedure: New GHG standards for MD and HD engines and vehicles identical to those adopted by the USEPA in 2011 for MYs 2014-18.	12/12/13
Agricultural equipment SIP credit rule: Incentive-funded projects must be implemented using Carl Moyer Program Guidelines; must be surplus, quantifiable, enforceable, and permanent, and result in emission reductions that are eligible for SIP credit.	10/25/13
Mandatory Report of Greenhouse Gas Emissions: Approved a regulation that establishes detailed specifications for emissions calculations, reporting, and verification of GHG emission estimates from significant sources.	10/25/13
CA Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms: Technical revisions to the Mandatory Reporting of Greenhouse Gas Emissions Regulation to further align reporting methods with U.S.EPA, update factors, and modify definitions to maintain consistency with the Cap and Trade program.	10/25/13
Zero emission vehicle test procedures: Existing certification test procedures for plug-in hybrid vehicles need to be updated to reflect technology developments. The ZEV regulation will require minor modifications to address clarity and implementation issues.	10/24/13
Consumer Products: Antiperspirants, Deodorants, Test Method 310, Aerosol Coatings, Proposed Repeal of Hairspray Credit): Amendments to require various consumer products to reformulate to reduce VOC or reactivity content to meet specified limits, and to clarify various regulatory provisions, improve enforcement, and add analytical procedures.	9/26/13
Alternative fuel certification procedures: Amendments to current alternative fuel conversion certification procedures for motor vehicles and engines that will allow small volume conversion manufacturers to reduce the upfront demonstration requirements and allow systems to be sold sooner with lower certification costs than with the current process, beginning with MY 2018.	9/26/13
Vapor Recovery for Gasoline Dispensing Facilities: Amendments to certification and test procedures for vapor recovery equipment used on cargo tanks and at gasoline dispensing facilities.	7/25/13
Off-highway recreational vehicle evaporative emission control: Set evaporative emission standards to control hydrocarbon emissions from Off-Highway Recreational Vehicles. The running loss, hot soak, and diurnal performance standards can be met by using proven automobile type control technology.	7/25/13
Gasoline and diesel fuel test standards: The amendments add test standards for the measurement of prohibited oxygenates at trace levels specified in existing regulations.	1/25/13
LEV III and ZEV Programs for Federal Compliance Option: The amendments deem compliance with national GHG new vehicle standards in 2017-2025 as compliance with California GHG standards for the same model years.	11/15/12 12/6/12 EO
Consumer products (automotive windshield washing fluid): The amendments add portions of 14 California counties to the list of areas with freezing temperatures where 25% VOC content windshield washing fluid could be sold.	10/18/2012 EO 03/15/13
GHG mandatory reporting, Fee Regulation, and Cap and Trade 2012: The amendments eliminate emission verification for facilities emitting less than 25,000 MTCO2e and make minor changes in definitions and requirements.	9/20/12 11/2/12 EO

Board Action	Hearing Date
Amendments to Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines: Approved amendments to the verification procedure used to evaluate diesel retrofits through emissions, durability, and field testing. Amendments will lower costs associated with required in-use compliance testing, streamline the in-use compliance process, and will extend time allowed to complete verifications.	8/23/2012 EO 07/02/13
Amendments to On-Board Diagnostics (OBD I and II) Regulations: Approved amendments to the light- and medium-duty vehicle and heavy-duty engine OBD regulations.	8/23/2012 EO 06/26/13
Cap and Trade: Amendments to CA Cap on GHG Emissions and Market-Based Compliance Mechanisms, and Amendments Allowing Use of Compliance Instruments Issued by Linked Jurisdictions: Amends Cap-and-Trade and compliance mechanisms to add security to the market system and to aid in implementation. Amendments include first auction rules, offset registry, market monitoring provisions, and information gathering necessary for the financial services operator.	6/28/12 7/31/12 EO
Vapor recovery defect list: The amendments add defects and verification procedures for equipment approved since 2004, and make minor changes to provide clarity	6/11/12 EO
Tractor-Trailer GHG Regulation: Emergency Amendment: The emergency amendment to correct a drafting error and delay the registration date for participation in the phased compliance option	2/29/2012 2/29/12 EO
Advanced Clean Cars (ACC) Regulation: Low-Emission Vehicles and GHG: The more stringent criteria emission standards for MY 2015-2025 light and medium duty vehicles (LEV III), amended GHG emission standards for model year 2017-2025 light and medium duty vehicles (LEV GHG), amended ZEV Regulation to ensure the successful market penetration of ZEVs in commercial volumes, amended hydrogen fueling infrastructure mandate of the Clean Fuels Outlet regulation, and amended cert fuel for light duty vehicles from an MTBE-containing fuel to an E10 certification fuel.	1/26/12
Zero Emission Vehicle (ZEV): The amendments increase compliance flexibility, add two new vehicle categori credits, increase credits for 300 mile FCVs, increase requirements for ZEVs and TZEVs, eliminate credit for PZ expand applicability to smaller manufacturers, base ZEV credits on range, and make other minor changes in cr	1/26/12
Amendments to Low Carbon Fuel Standard Regulation: The amendments address several aspects of the regulation, including: reporting requirements, credit trading, regulated parties, opt-in and opt-out provisions, definitions, and other clarifying language.	12/16/11 10/10/12 EO
Amendments to Small Off-Road Engine and Tier 4 Off-Road Compression-Ignition Engine Regulations And Test Procedures; also "Recreational Marine" Spark-Ignition Marine Engine Amendments (Recreational Boats): Aligns California test procedures with U.S. EPA test procedures and requires off-road CI engine manufacturers to conduct in-use testing of their entire product lines to confirm compliance with previously established Not-To-Exceed emission thresholds.	12/16/2011 10/25/12 EO
Regulations and Certification Procedures for Engine Packages used in Light-Duty Specially Constructed Vehicles (Kit Cars): Ensures that certified engine packages, when placed into any Kit Car, would meet new vehicle emission standards, and be able to meet Smog Check requirements.	11/17/11 9/21/12 EO
Amendments to the California Reformulated Gasoline Regulations: Corrects drafting errors in the predictive model, deletes outdated regulatory provisions, updates the notification requirements, and changes the restrictions on blending CARBOB with other liquids.	10/21/11 8/24/12 EO
Amendments to the In-Use Diesel Transport Refrigeration Units (TRU) ATCM: Mechanisms to improve compliance rates and enforceability.	10/21/11 8/31/12 EO
Amendments to the AB 32 Cost of Implementation Fee Regulation: Clarifies requirements and regulatory language, revises definitions.	10/20/11 8/21/12 EO
Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation, Including Compliance Offset Protocols: Greenhouse Gas Emissions Cap-and-Trade Program, including compliance offset protocols and multiple pathways for compliance.	10/21/11 8/21/12 EO
Amendments to the Regulation for Cargo Handling Equipment (CHE) at Ports and Intermodal Rail Yards (Port Yard Trucks Regulation): Provides additional compliance flexibility, and maintains anticipated emissions reductions. As applicable to yard trucks and two-engine sweepers.	9/22/11 8/2/12 EO
Amendments to the Enhanced Vapor Recovery Regulation for Gasoline Dispensing Facilities: New requirement for low permeation hoses at gasoline dispensing facilities.	9/22/11 7/26/12 EO
Amendments to Cleaner Main Ship Engines and Fuel for Ocean-Going Vessels: Adjusts the offshore regulatory boundary. Aligns very low sulfur fuel implementation deadlines with new federal requirements.	6/23/11 9/13/12 EO
Particulate Matter Emissions Measurement Allowance For Heavy-Duty Diesel In-Use Compliance Regulation: Emission measurement allowances provide for variability associated with the field testing required in the regulation.	6/23/11
Low Carbon Fuel Standard Carbon Intensity Lookup Table Amendments: Adds new pathways for vegetation-based fuels	2/24/11
Amendments to Cleaner In-Use Heavy-Duty On-Road Diesel Trucks and LSI Fleets Regulations: Amends five regulations to provide relief to fleets adversely affected by the economy, and take into account the fact that emissions are lower than previously predicted.	12/16/10 9/19/11 EO

Board Action	Hearing Date
Tractor-Trailer GHG Regulation Amendment: Enacts administrative changes to increase compliance flexibility and reduce costs	12/16/10
Amendments to Cleaner In-Use Off-Road Diesel-Fueled Fleets Regulation: Amendments provide relief to fleets adversely affected by the economy, and take into account the fact that emissions are lower than previously predicted.	12/16/10 10/28/11 EO
In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks at Ports and Rail Yard Facilities: Amendments add flexibility to fleets' compliance schedules, mitigate the use of noncompliant trucks outside port and rail properties, and provide transition to the Truck and Bus regulation.	12/16/10 9/19/11 EO
Amendments to the Regulation for Mandatory Reporting of Greenhouse Gas Emissions: Changes requirements to align with federal greenhouse gas reporting requirements adopted by US EPA.	12/16/10 10/28/11 EO
Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation: Establishes framework and requirements for Greenhouse Gas Emissions Cap-and-Trade Program, including compliance offset protocols.	12/16/10 10/26/11 EO
Amendments to the Consumer Products Regulation: The amendments set new or lower VOC limits for some categories, prohibit certain toxic air contaminants, high GWP compounds, and surfactants toxic to aquatic species. Also changes Method 310, used to determine aromatic content of certain products.	11/18/10 9/29/11 EO
Amendment of the ATCM for Diesel Transportation Refrigeration Units (TRU): Amendments expand the compliance options and clarify the operational life of various types of TRUs.	11/18/10 2/2/11 EO
Amendments to the ATCM for Stationary Compression Ignition Engines: The amendments closely align the emission limits for new emergency standby engines in the ATCM with the emission standards required by the federal Standards of Performance.	10/21/10 3/25/11 EO
Diesel Vehicle Periodic Smoke Inspection Program: The amendments exempt medium duty diesel vehicles from smoke inspection requirements if complying with Smog Check requirements.	10/21/10 8/23/11 EO
Renewable Electricity Standard Regulation: The regulation requires electricity providers to obtain at least 33% of their retail electricity sales from renewable energy resources by 2020.	9/23/10
Energy Efficiency at Industrial Facilities: The standards for the reporting of GHG emissions and the feasibility of emissions controls by the largest GHG-emitting stationary sources.	7/22/10 5/9/11 EO
Amendments to Commercial Harbor Craft Regulation: The amendments require the use of cleaner engines in diesel-fueled crew and supply, barge, and dredge vessels.	6/24/10 4/11/11 EO
Accelerated Introduction of Cleaner Line-Haul Locomotives: Agreement with railroads sets prescribed reductions in diesel risk and target years through 2020 at four major railyards.	6/24/10
Amendments to New Passenger Motor Vehicle Greenhouse Gas Emission Standards: The amendments deeming compliance with EPA's GHG standards as compliance with California's standards in 2012 through 2016 model years.	2/25/2010 03/29/10
Sulfur Hexafluoride (SF6) Regulation: The regulation reduces emissions of sulfur hexafluoride (SF6), a high-GWP GHG, from high-voltage gas-insulated electrical switchgear.	2/25/10 12/15/10 EO
Amendments to the Statewide Portable Equipment Registration Regulation and Portable Engine ATCM: The amendments extend the deadline for removal of certain uncertified portable engines for one year.	1/28/10 8/27/10 EO 12/8/10 EO
Diesel Engine Retrofit Control Verification, Warranty, and Compliance Regulation Amendments: The amendments require per-installation compatibility assessment, performance data collection, and reporting of additional information, and enhance enforceability.	1/28/10 12/6/10 EO
Stationary Equipment High-GWP Refrigerant Regulation: The regulation reduces emissions of high-GWP refrigerants from stationary non-residential equipment.	12/1/09 9/14/10 EO
Amendments to Limit Ozone Emissions from Indoor Air Cleaning Devices: The amendments delay the labeling compliance deadlines by one to two years and to make minor changes in testing protocols.	12/9/09
Emission Warranty Information Reporting Regulation Amendments: Repealed the 2007 regulation and readopted the 1988 regulation with amendments to implement adverse court decision.	11/19/09 9/27/10 EO
Amendments to Maximum Incremental Reactivity Tables: Added many new compounds and modified reactivity values for many existing compounds in the tables to reflect new research data.	11/3/09 7/23/10 EO
AB 32 Cost of Implementation Fee Regulation: AB 32 authorizes ARB to adopt by regulation a schedule of fees to be paid by sources of greenhouse gas emissions regulated pursuant to AB 32. Also, a fee regulation to support the administrative costs of AB 32 implementation.	9/24/2009 05/06/10 EO
Passenger Motor Vehicle Greenhouse Gas Limits Amendments: The amendments grant credits to manufacturers for compliant vehicles sold in other states that have adopted California regulations.	9/24/09 2/22/10 EO
Consumer Products Amendments: The amendments set new VOC limits for multi-purpose solvent and paint thinner products and lower the existing VOC limit for double phase aerosol air fresheners.	9/24/09 8/6/10 EO
Amendments to In-Use Off-Road Diesel-Fueled Fleets Regulation: The amendments implement legislatively directed changes and provide additional incentives for early action.	7/23/09 12/2/09 EO 6/3/10 EO

Board Action	Hearing Date
Methane Emissions from Municipal Solid Waste Landfills: The regulation requires smaller and other uncontrolled landfills to install gas collection and control systems, and also requires existing and newly installed systems to operate optimally.	6/25/09 5/5/10 EO
Cool Car Standards: The regulation requires the use of solar management window glass in vehicles up to 10,000 lb GVWR.	6/25/09
Enhanced Fleet Modernization (Car Scrap): The guidelines for a program to scrap up to 15,000 light duty vehicles statewide.	6/25/09 7/30/10 EO
Amendments to Heavy-Duty On-Board Diagnostics Regulations: The amendments to the light and medium-duty vehicle and heavy duty engine OBD regulations.	5/28/2009 4/6/10 EO
Smog Check Improvements: The amendments implement changes in state law and SIP commitments adopted by ARB between 1996 and 2007.	5/7/09 by BAR 6/9/09 EO
AB 118 Air Quality Improvement Program Guidelines: The Air Quality Improvement Program provides for up to $50 million per year for seven years beginning in 2009-10 for vehicle and equipment projects that reduce criteria pollutants, air quality research, and advanced technology workforce training. The AQIP Guidelines describe minimum administrative, reporting, and oversight requirements for the program, and provide general criteria for how the program shall be implemented.	04/23/09 08/28/09 EO
Pesticide Element: Reduce volatile organic compound (VOC) emissions from the application of agricultural field fumigants in the South Coast, Southeast Desert, Ventura County, San Joaquin Valley, and Sacramento Metro federal ozone nonattainment areas.	4/20/09 10/12/09 EO (2) 8/2/11 EO
Low Carbon Fuel Standard: Approved new standards to lower the carbon content of fuels.	4/20/09 11/25/09 EO
Pesticide Element for San Joaquin Valley: DPR Director approved pesticide ROG emission limit of 18.1 tpd and committed to implement restrictions on non-fumigant pesticide use by 2014 in the San Joaquin Valley.	4/7/09 DPR
Tire Pressure Inflation Regulation: The regulation requires automotive service providers to perform tire pressure checks as part of every service.	3/26/09 2/4/10 EO
Sulfur Hexafluoride from Non-Utility and Non-Semiconductor Applications: The regulation phases out use of Sulfur Hexafluoride over the next several years.	2/26/09 11/12/09 EO
Semiconductor Operations: The regulation to set standards to reduce fluorinated gas emissions from the semiconductor and related devices industry.	2/26/09 10/23/09 EO
Plug-In Hybrid Electric Vehicles Test Procedure Amendments: Amendments to test procedures to address plug-in-hybrid electric vehicles.	1/23/09 12/2/09 EO
In-Use Off-Road Diesel-Fueled Fleets Amendments: Makes administrative changes to recognize delays in the supply of retrofit control devices.	1/22/09
Small Containers of Automotive Refrigerant: The regulation reduces leakage from small containers, a container deposit and return program, and require additional container labeling and consumer education requirements.	1/22/09 1/5/10 EO
Aftermarket Critical Emission Parts on Highway Motorcycles: Allows for the sale of certified critical emission parts by aftermarket manufacturers.	1/22/09 6/19/09 EO
Heavy-Duty Tractor-Trailer Greenhouse Gas (GHG) Reduction: The regulation reduces greenhouse gas emissions by improving long haul tractor and trailer efficiency through use of aerodynamic fairings and low rolling resistance tires.	12/11/08 10/23/09 EO
Cleaner In-Use Heavy-Duty Diesel Trucks (Truck and Bus Regulation): The regulation reduces diesel particulate matter and oxides of nitrogen through fleet modernization and exhaust retrofits. Makes enforceability changes to public fleet, off-road equipment, and portable equipment regulations.	12/11/08 10/19/09 EO 10/23/09 EO
Large Spark-Ignition Engine Amendments: The amendments reduce evaporative, permeation, and exhaust emissions from large spark-ignition (LSI) engines equal to or below 1 liter in displacement.	11/1/08 3/12/09 EO
Small Off-Road Engine (SORE) Amendments: The amendments address the excessive accumulation of emission credits.	11/21/08 2/24/10 EO
Proposed AB 118 Air Quality Guidelines for the Air Quality Improvement Program and the Alternative and Renewable Fuel and Vehicle and Technology Program: The California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007 (AB 118) requires ARB to develop guidelines for both the Alternative and Renewable Fuel and Vehicle Technology Program and the Air Quality Improvement Program to ensure that both programs do not adversely impact air quality.	09/25/08 EO 05/20/09
Portable Outboard Marine Tanks and Components (part of Additional Evaporative Emission Standards): The regulation establishes permeation and emission standards for new portable outboard marine tanks and components.	9/25/08 7/20/09 EO
Cleaner Fuel in Ocean Going Vessels: The regulation requires use of low sulfur fuel in ocean-going ship main engines, and auxiliary engines and boilers.	7/24/08 4/16/09 EO

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Spark-Ignition Marine Engine and Boat Amendments: Provides optional compliance path for > 500 hp sterndrive/inboard marine engines.	7/24/08 6/5/09 EO
Consumer Products Amendments: The amendments add volatile organic compound (VOC) limits for seven additional categories and lower limits for twelve previously regulated categories.	6/26/08 5/5/09 EO
Zero emission vehicles: Updated California's ZEV requirements to provide greater flexibility with respect to fuels, technologies, and simplifying compliance pathways. Amendments give manufacturers increased flexibility to comply with ZEV requirements by giving credit to plug-in hybrid electric vehicles and establishing additional ZEV categories in recognition of new developments in fuel cell vehicles and battery electric vehicles.	3/27/08 12/17/08 EO
Amendments to the Verification Procedure, Warranty, and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines: Adds verification requirements for control technologies that only reduce NOx emissions, new reduction classifications for NOx reducing technologies, new testing requirements, and conditional extensions for verified technologies.	1/24/08 12/4/08 EO
Mandatory Report of Greenhouse Gas Emissions: The regulation establishes detailed specifications for emissions calculations, reporting, and verification of GHG emission estimates from significant sources.	12/6/07 10/12/08 EO
Gaseous Pollutant Measurement Allowances for In-Use Heavy-Duty Diesel Compliance: Measurement accuracy margins are to be determined through an ongoing comprehensive testing program performed by an independent contractor. Amendments include these measurement accuracy margins into the regulation.	12/6/07 10/14/08 EO
Ocean-Going Vessels While at Berth (aka Ship Hoteling) - Auxiliary Engine Cold Ironing and Clean Technology: The regulation reduces emissions from auxiliary engines on ocean-going ships while at-berth.	12/6/07 10/16/08 EO
In-Use On-Road Diesel-Fueled Heavy-Duty Drayage Trucks at Ports and Rail Yard Facilities: The regulation establishes emission standards for in-use, heavy-duty diesel-fueled vehicles that transport cargo to and from California's ports and intermodal rail facilities.	12/6/07 10/12/08 EO
Commercial Harbor Craft: The regulation establishes in-use and new engine emission limits for both auxiliary and propulsion diesel engines on ferries, excursion vessels, tugboats, and towboats.	11/15/07 9/2/08 EO
Suggested Control Measure for Architectural Coatings Amendments: The amendments reduce the recommended VOC content of 19 categories of architectural coatings.	10/26/07
Aftermarket Catalytic Converter Requirements: The amendments establish more stringent emission performance and durability requirements for used and new aftermarket catalytic converters offered for sale in California.	10/25/07 2/21/08 NOD
Limiting Ozone Emissions from Indoor Air Cleaning Devices: The ozone emission limit of 0.050 ppm for portable indoor air cleaning devices in response to requirements of AB 2276 (2006).	9/27/07 8/7/08 EO
Pesticide Commitment for Ventura County in 1994 SIP: The substitution of excess ROG emission reductions from state motor vehicle program for 1994 SIP reduction commitment from pesticide application in Ventura County.	9/27/07 11/30/07 EO
In-Use Off-Road Diesel Equipment: The regulation requires off-road diesel fleet owners to modernize their fleets and install exhaust retrofits.	7/26/07 4/4/08 EO
Emission Control and Environmental Performance Label Regulations: The amendments add a Global Index Label and modify the formal of the Smog Index Label on new cars.	6/21/07 5/2/08 EO
Vapor Recovery from Aboveground Storage Tanks: The regulation establish new performance standards and specifications for the vapor recovery systems and components used with aboveground storage tanks.	6/21/07 5/2/08 EO
CaRFG Phase 3 amendments: The amendments mitigate the increases in evaporative emissions from on-road motor vehicles resulting from the addition of ethanol to gasoline.	6/14/07 4/25/08 EO 8/7/08 EO
Formaldehyde from Composite Wood Products: The ATCM limit formaldehyde emissions from hardwood plywood, particleboard, and medium density fiberboard to the maximum amount feasible.	4/26/07 3/5/08 EO
Portable equipment registration program (PERP) and airborne toxic control measure for diesel-fueled portable engines: The amendment allow permitting of Tier 0 portable equipment engines used in emergency or low use duty and to extend permitting of certain Tier 1 and 2 "resident" engines to 1/1/10.	3/22/07 7/31/07 EO
Perchloroethylene Control Measure Amendments: The amendments to the Perchloroethylene ATCM to prohibit new Perc dry cleaning machines beginning 2008 and phase out all Perc machines by 2023.	1/25/07 11/7/07 EO
Amendments to Emission Warranty Information Reporting & Recall Regulations: The amendments tighten the provisions for recalling vehicles for emissions-related failures, helping ensure that corrective action is taken to vehicles with defective emission control devices or systems.	12/7/06 3/22/07 10/17/07 EO
Voluntary accelerated vehicle retirement regulations: The amendments authorize the use of remote sensing to identify light-duty high emitters and that establish protocols for quantifying emissions reductions from high emitters proposed for retirement.	12/7/06
Emergency regulation for portable equipment registration program (PERP), airborne toxic control measures for portable and stationary diesel-fueled engines	12/7/06
Amendments to the Hexavalent Chromium ATCM: The amendments require use of best available control technology on all chrome plating and anodizing facilities.	12/7/06

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Consumer Products Regulation Amendments: The amendments set lower emission limits in 15 product categories.	11/17/06 9/25/07 EO
Requirements for Stationary Diesel In-Use Agricultural Engines: The amendments to the stationary diesel engine ATCM which set emissions standards for in-use diesel agricultural engines.	11/16/06 7/3/07 NOD
Ships - Onboard Incineration: The amendments to cruise ship incineration ATCM to include all oceangoing ships of 300 gross registered tons or more.	11/16/06 9/11/07 EO
Zero Emission Bus: The amendments postpone the 15 percent purchase requirement three years for transit agencies in the diesel path and one to two years for transit agencies in the alternative fuel path, in order to keep pace with developments in zero emission bus technology, and adding an Advanced Demonstration requirement to offset emission losses.	10/19/06 8/27/07 EO
Distributed generation certification: The amendments improve the emissions durability and testing requirements, adding waste gas emission standards, and eliminating a redundant PM standard in the current 2007 emission standards.	10/19/06 5/17/07 NOD
Heavy-Duty Diesel In-Use Compliance Regulation: The amendments to the heavy-duty diesel engine regulations and test procedures create a new in-use compliance program conducted by engine manufacturers. The amendments would help ensure compliance with applicable certification standards throughout an engine's useful life.	9/28/06 7/19/07 NOD
Revisions to OBD II and the Emission Warranty Regulations: The amendments to the OBD II regulation provide for improved emission control monitoring including air-fuel cylinder imbalance monitoring, oxygen sensor monitoring, catalyst monitoring, permanent fault codes for gasoline vehicles and new thresholds for diesel vehicles.	9/28/06 8/9/07 EO
Off-Highway Recreational Vehicle Amendments: The amendments to the Off-Highway Recreational Vehicle Regulations including harmonizing evaporative emission standards with federal regulations, expanding the definition of ATVs, modifying labeling requirements, and adjusting riding seasons.	7/20/06 6/1/07 EO
Portable Equipment Registration Program (PERP) Amendments: The amendments to the Statewide Portable Equipment Registration program include installation of hour meters on equipment, and revisions to recordkeeping, reporting, and fees.	6/22/06 11/13/06 NOD
Heavy Duty Vehicle Service Information: The amendments to the Service Information Rule require manufacturers to make available diagnostic equipment and information for sale to the aftermarket.	6/22/06 5/3/07 EO
LEV II technical amendments: The amendments to evaporative emission test procedures, four-wheel drive dynamometer provisions, and vehicle label requirements.	6/22/06 9/27/06 NOD
Dry Cleaning ATCM Amendments: The amendments to the Dry Cleaning ATCM limit siting of new dry cleaners, phase out use of Perc at co-residential facilities, phase out higher emitting Perc sources at other facilities, and require enhanced ventilation at existing and new Perc facilities.	5/25/06
Forklifts and other Large Spark Ignition (LSI) Equipment: The regulation reduces emissions from forklifts and other off-road spark-ignition equipment by establishing more stringent standards for new equipment, and requiring retrofits or engine replacement on existing equipment. Aligns EPA's standards for 2007 and more stringent standards for 2010.	5/25/06 3/2/07 EO
Enhanced Vapor Recovery Amendments: The amendments to the vapor recovery system regulation and revised test procedures.	5/25/06
Diesel Retrofit Technology Verification Procedure: The amendments to the Diesel Emission In-use Control Strategy Verification Procedure to substitute a 30% increase limit in NOx concentration for an 80% reduction requirement from PM retrofit devices.	3/23/06 12/21/06 NOD
Heavy duty vehicle smoke inspection program amendments: The amendments impose a fine on trucks not displaying a current compliance certification sticker.	1/26/06 12/4/06 EO
Ocean-going Ship Auxiliary Engine Fuel: The regulation requires ships to use cleaner marine gas oil or diesel to power auxiliary engines within 24 nautical miles of the California coast.	12/8/05 10/20/06 EO
Diesel Cargo Handling Equipment: The regulation requires new and in-use cargo handling equipment at ports and intermodal rail yards to reduce emissions by utilizing best available control technology.	12/8/05 6/2/06 EO
Public and Utility Diesel Truck Fleets: The regulation reduces diesel particulate matter emissions from heavy duty diesel trucks in government and private utility fleets.	12/8/05 10/4/06 EO
Cruise ships – Onboard Incineration: The Air Toxic Control Measure prohibits cruise ships from conducting onboard incineration within three nautical miles of the California coast.	11/17/05 2/1/06 NOD
Inboard Marine Engine Rule Amendments: The amendments to the 2001 regulation include additional compliance options for manufacturers.	11/17/05 9/26/06 EO
Heavy-Duty Diesel Truck Idling Technology: The regulation limits sleeper truck idling to 5 minutes. Allows alternate technologies to provide cab heating/cooling and power.	10/20/05 9/1/06 EO
Automotive Coating Suggested Control Measure: The SCM for automotive coatings for adoption by air districts. The measure will reduce the VOC content of 11 categories of surface protective coatings.	10/20/05
2007-09 Model-year heavy duty urban bus engines and the fleet rule for transit agencies: The amendments to align urban bus emission limits with on-road heavy duty truck emission limits and allow for the purchase of non- complying buses under the condition that bus turnover increase to offset NOx increases.	10/20/05 10/27/05 7/28/06 EO

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Portable fuel containers (part 2 of 2): The amendments revise spout and automatic shutoff design.	9/15/05 7/28/06 EO
Portable Fuel Containers (part 1 of 2): The amendments include kerosene containers in the definition of portable fuel containers.	9/15/05 11/9/05 NOD
2007-09 Model-year heavy duty urban bus engines and the fleet rule for transit agencies: The amendments require all transit agencies in SCAQMD to purchase only alternate fuel versions of new buses.	9/15/05 Superceded by 10/20/05
Reid vapor pressure limit emergency rule: The amendments relax Reid vapor pressure limit to accelerate fuel production for Hurricane Katrina victims.	9/8/05 Operative for September and October 2005 only
Heavy-Duty Truck OBD: The regulation requires on-board diagnostic (OBD) systems for new gas and diesel trucks, similar to the systems on passenger cars.	7/21/05 12/28/05 EO
Definition of Large Confined Animal Facility: The regulation defines the size of a large CAF for the purposes of air quality permitting and reduction of ROG emissions to the extent feasible.	6/23/05 4/13/06 EO
ATCM for stationary compression ignition engines: The emergency amendments (3/17/05) and permanent amendments (5/26/05) relax the diesel PM emission limits on new stationary diesel engines to current off-road engine standards to respond to the lack of availability of engines meeting the original ATCM standard.	3/17/05 5/26/05 7/29/05 EO
Transit Fleet Rule: The amendments add emission limits for non-urban bus transit agency vehicles, require lower bus and truck fleet-average NOx and PM emission limits, and clarify emission limits for CO, NMHC, and formaldehyde.	2/24/05 10/19/05 NOD
Thermal Spraying ATCM: The regulation reduces emissions of hexavalent chromium and nickel from thermal spraying operations.	12/9/04 7/20/05 EO
Tier 4 Standards for Small Off-Road Diesel Engines (SORE): The new emission standards for off-road diesel engines are phased in between 2008 and 2015.	12/9/04 10/21/05 EO
Emergency Regulatory Amendment Delaying the January 1, 2005 Implementation Date for the Diesel Fuel Lubricity Standard: The emergency regulation delays the lubricity standard compliance deadline by five months to respond to fuel pipeline contamination problems.	11/24/04 12/10/04 EO
Enhanced vapor recovery compliance extension: The amendments to the EVR regulation extend the compliance date for onboard refueling vapor recovery compatibility to the date of EVR compliance.	11/18/04 2/11/05 EO
CaRFG Phase 3 amendments: The amendments correcting errors and streamlining requirements for compliance and enforcement of CaRFG Phase 3 regulations from 1999.	11/18/04
Clean diesel fuel for harbor craft and intrastate locomotives: The regulation requires harbor craft and locomotives operating solely within California to use clean diesel fuel.	11/18/04 3/16/05 EO
Nonvehicular Source, Consumer Product, and Architectural Coating Fee Regulation Amendment: The amendments to fee regulations to collect supplemental fees when authorized by the Legislature.	11/18/04
Greenhouse gas limits for motor vehicles: The regulation sets the first ever greenhouse gas emission standards on light and medium duty vehicles starting with the 2009 model year.	9/24/04 8/4/05 EO
Gasoline vapor recovery system equipment defects list: The addition of defects to the VRED list for use by compliance inspectors.	8/24/04 6/22/05 EO
Unihose gasoline vapor recovery systems: The emergency regulation and an amendment delay the compliance date for unihose installation to the date of dispenser replacement.	7/22/04 11/24/04 EO
General Idling Limits for Diesel Trucks: The regulation limits idling of heavy-duty diesel trucks operating in California to five minutes, with exceptions for sleeper cabs.	7/22/04
Consumer Products: The regulation reduces ROG emissions from 15 consumer products categories, prohibit the use of 3 toxic compounds in consumer products, ban the use of PDCB in certain products, allow for the use of Alternative Control Plans, and revise Test Method 310.	6/24/04 5/6/05 EO
Urban bus engines/fleet rule for transit agencies: The amendments allow for the purchase of hybrid diesel buses and revise the zero emission bus demonstration and purchase timelines.	6/24/04
Engine Manufacturer Diagnostics: The regulation would require model year 2007 and later heavy duty truck engines to be equipped with engine diagnostic systems to detect malfunctions of the emission control system.	5/20/04
Chip Reflash: The voluntary program and a backstop regulation reduce heavy duty truck NOx emissions through the installation of new software in the engine's electronic control module.	3/25/04 3/21/05 EO
Portable equipment registration program (PERP): The amendments allow uncertified engines to be registered until December 31, 2005, to increase fees, and to modify administrative requirements.	2/26/04 1/7/05 EO 6/21/05 EO
Portable Diesel Engine ATCM: The regulation reduces diesel PM emissions from portable engines through a series of emission standards that increase in stringency through 2020.	2/26/04 1/4/05 EO

Board Action	Hearing Date
California motor vehicle service information rule: The amendments allow for the purchase of heavy duty engine emission-related service information and diagnostic tools by independent service facilities and aftermarket parts manufacturers.	1/22/04 5/20/04
Transportation Refrigeration Unit ATCM: The regulation reduces diesel PM emissions from transport refrigeration units by establishing emission standards and facility reporting requirements to streamline inspections.	12/11/03 2/26/04 11/10/04 EO
Diesel engine verification procedures: The amendments reduced warranty coverage to the engine only, delayed the NOx reduction compliance date to 2007, added requirements for proof-of-concept testing for new technology, and harmonized durability requirements with those of U.S. EPA.	12/11/03 2/26/04 10/17/04
Chip Reflash: The voluntary program and a backstop regulation reduce heavy duty truck NOx emissions through the installation of new software in the engine's electronic control module.	12/11/03 3/27/04 3/21/05 EO
Revised tables of maximum incremental reactivity values: The addition of 102 more chemicals with associated maximum incremental reactivity values to existing regulation allowing these chemicals to be used in aerosol coating formulations.	12/3/03
Stationary Diesel Engines ATCM: The regulation reduces diesel PM emissions from stationary diesel engines through the use of clean fuel, lower emission standards, operational practices.	11/20/03 12/11/03 2/26/2004 9/27/04 EO
Solid waste collection vehicles: The regulation reduces toxic diesel particulate emissions from solid waste collection vehicles by over 80 percent by 2010. This measure is part of ARB's plan to reduce the risk from a wide range of diesel engines throughout California.	9/25/03 5/17/04 EO
Small off-road engines (SORE): The more stringent emission standards for the engines used in lawn and garden and industrial equipment, such as string trimmers, leaf blowers, walk-behind lawn mowers, generators, and lawn tractors.	9/25/03 7/26/04 EO
Off-highway recreational vehicles: Changes to riding season restrictions.	7/24/03
Clean diesel fuel: The regulation reduces sulfur levels and set a minimum lubricity standard in diesel fuel used in vehicles and off-road equipment in California, beginning in 2006.	7/24/03 5/28/04 EO
Ozone Transport Mitigation Amendments: The amendments require upwind districts to (1) have the same no-net-increase permitting thresholds as downwind districts, and (2) Implement "all feasible measures."	5/22/03 10/2/03 NOD
Zero emission vehicles: The Updated California's ZEV requirements support the fuel cell car development and expand sales of advanced technology partial ZEVs (like gasoline-electric hybrids) in the near-term, while retaining a role for battery electric vehicles.	3/27/03 12/19/03 EO
Heavy duty gasoline truck standards: Aligned its existing rules with new, lower federal emission standards for gasoline-powered heavy-duty vehicles starting in 2008.	12/12/02 9/23/03 EO
Low emission vehicles II: Minor administrative changes.	12/12/02 9/24/03 EO
Gasoline vapor recovery systems test procedures: The amendments add advanced vapor recovery technology certification and testing standards.	12/12/02 7/1/03 EO 10/21/03 EO
CaRFG Phase 3 amendments: The amendments allow for small residual levels of MTBE in gasoline while MTBE is being phased out and replaced by ethanol.	12/12/02 3/20/03 EO
School bus Idling: The measure requires school bus drivers to turn off the bus or vehicle engine upon arriving at a school and restart it no more than 30 seconds before departure in order to limit children's exposure to toxic diesel particulate exhaust.	12/12/02 5/15/03 EO
California Interim Certification Procedures for 2004 and Subsequent Model Year Hybrid-Electric Vehicles in the Urban Transit Bus and Heavy-Duty Vehicle Classes Regulation Amendment: The amendments allow diesel-path transit agencies to purchase alternate fuel buses with higher NOx limits, establish certification procedures for hybrid buses, and require lower fleet-average PM emission limits.	10/24/02 9/2/03 EO
CaRFG Phase 3 amendments: The amendments delay removal of MTBE from gasoline by one year to 12/31/03.	7/25/02 11/8/02 EO
Diesel retrofit verification procedures, warranty, and in-use compliance requirements: The regulations specify test procedures, warranty, and in-use compliance of diesel engine PM retrofit control devices.	5/16/02 3/28/03 EO
On-board diagnostics for cars: The changes to the On-Board Diagnostic Systems (OBD II) regulation to improve the effectiveness of OBD II systems in detecting motor vehicle emission-related problems.	4/25/02 3/7/03 EO
Voluntary accelerated light duty vehicle retirement regulations: Establishes standards for a voluntary accelerated retirement program.	2/21/02 11/18/02 EO
Residential burning: The measure reduces emissions of toxic air contaminants from outdoor residential waste burning by eliminating the use of burn barrels and the outdoor burning of residential waste materials other than natural vegetation.	2/21/02 12/18/02 EO

Board Action	Hearing Date
California motor vehicle service information rule: The regulation requires light- and medium-duty vehicle manufacturers to offer for sale emission-related service information and diagnostic tools to independent service facilities and aftermarket parts manufacturers.	12/13/01 7/31/02 EO
Vapor recovery regulation amendments: The amendments expand the list of specified defects requiring equipment to be removed from service.	11/15/01 9/27/02 EO
Distributed generation guidelines and regulations: The regulations require the permitting by ARB of distributed generation sources that are exempt from air district permitting and approved guidelines for use by air districts in permitting non-exempt units.	11/15/01 7/23/02 EO
Low emission vehicle regulations (LEV II): The amendments apply PM emission limits to all new gasoline vehicles, extend gasoline PZEV emission limits to all fuel types, and streamline the manufacturer certification process.	11/15/01 8/6/02 EO
Gasoline vapor recovery systems test methods and compliance procedures: The amendments add test methods for new technology components, streamline test methods for liquid removal equipment, and***.	10/25/01 7/9/02 EO
Heavy-duty diesel trucks: The amendments to emissions standards harmonize with EPA regulations for 2007 and subsequent model year new heavy-duty diesel engines.	10/25/01
Automotive coatings: The Air Toxic Control Measure which prohibits the sale and use in California of automotive coatings containing hexavalent chromium or cadmium.	9/20/01 9/2/02 EO
Inboard and sterndrive marine engines: The lower emission standards for 2003 and subsequent model year inboard and sterndrive gasoline-powered engines in recreational marine vessels.	7/26/01 6/6/02 EO
Asbestos from construction, grading, quarrying, and surface mining: The Airborne Toxic Control Measure for construction, grading, quarrying, and surface mining operations requiring dust mitigation for construction and grading operations, road construction and maintenance activities, and quarries and surface mines to minimize emissions of asbestos-laden dust.	7/26/01 6/7/02 EO
Zero emission vehicle infrastructure and standardization of electric vehicle charging equipment: The amendments to the ZEV regulation alter the method of quantifying production volumes at joint-owned facilities and to add specifications for standardized charging equipment.	6/28/01 5/10/02 EO
Pollutant transport designation: The amendments add two transport couples to the list of air basins in which upwind areas are required to permit thresholds no less stringent than those in downwind areas.	4/26/01
Zero emission vehicle regulation amendments: The amendments reduce the numbers of ZEVs required in future years, add a PZEV category and grant partial ZEV credit, modify the ZEV range credit, allow hybrid-electric vehicles partial ZEV credit, grant ZEV credit to advanced technology vehicles, and grant partial ZEV credit for several other minor new programs.	1/25/01 12/7/01 EO 4/12/02 EO
Heavy duty diesel engines supplemental test procedures: The amendments extend "Not-To-Exceed" and EURO III supplemental test procedure requirements through 2007 when federal requirements will include these tests.	12/7/00
Light and medium duty low emission vehicle alignment with federal standards: The amendments require light and medium duty vehicles sold in California to meet the more restrictive of state or federal emission standards.	12/7/00 12/27/00 EO
Exhaust emission standards for heavy duty gas engines: The amendments establish 2005 emission limits for heavy duty gas engines that are equivalent to federal limits.	12/7/00 12/27/00 EO
CaRFG Phase 3 amendments: The amendments regulate the replacement of MTBE in gasoline with ethanol.	11/16/00 4/25/01 EO
CaRFG Phase 3 test methods: The amendments to gasoline test procedures quantify the olefin content and gasoline distillation temperatures.	11/16/00 7/11/01 EO 8/28/01 EO
Antiperspirant and deodorant regulations: The amendments relax a 0% VOC limit to 40% VOC limit for aerosol antiperspirants.	10/26/00
Diesel risk reduction plan: The plan to reduce toxic particulate from diesel engines through retrofits on existing engines, tighter standards for new engines, and cleaner diesel fuel.	9/28/00
Conditional rice straw burning regulations: The regulations limit rice straw burning to fields with demonstrated disease rates reducing production by more than 5 percent.	9/28/00
Asbestos from unpaved roads: Tightened an existing Air Toxic Control Measure to prohibit the use of rock containing more than 0.25% asbestos on unsurfaced roads.	7/20/00
Aerosol Coatings: The amendments replace mass-based VOC limits with reactivity-based limits, add a table of Maximum Incremental Reactivity values, add limits for polyolefin adhesion promoters, prohibit use of certain toxic solvents, and make other minor changes.	6/22/00 5/1/01 EO
Consumer products aerosol adhesives: The amendments delete a 25% VOC limit by 2002, add new VOC limits for six categories of adhesives, prohibit the use of toxic solvents, and add new labeling and reporting requirements.	5/25/00 3/14/01 EO
Automotive care products: The Air Toxic Control Measure eliminate use of perchloroethylene, methylene chloride, and trichloroethylene in automotive products such as brake cleaners and degreasers.	4/27/00 2/28/01 EO
Enhanced vapor recovery emergency regulation: A four-year term for equipment certifications.	5/22/01 EO

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Enhanced vapor recovery: The amendments require the addition of components to reduce spills and leakage, adapt to onboard vapor recovery systems, and continuously monitor system operation and report equipment leaks immediately.	3/23/00 7/25/01 EO
Agricultural burning smoke management: The amendments add marginal burn day designations, require day-specific burn authorizations by districts, and smoke management plans for larger prescribed burn projects.	3/23/00 1/22/01 EO
Urban transit buses: The public transit bus fleet rule and emissions standards for new urban buses that mandates a lower fleet-average NOx emission limit, PM retrofits, lower sulfur fuel use, and purchase of specified percentages of zero emission buses in future years.	1/27/00 2/24/00 11/22/00 EO 5/29/01 EO
Small Off-Road (diesel) Equipment (SORE): The amendments conform with new federal requirements for lower and engine power-specific emission limits, and for the averaging, banking, and trading of emissions among SORE manufacturers.	1/28/00
CaRFG Phase 3 MTBE phase out: The regulations enable refiners to produce gasoline without MTBE while preserving the emissions benefits of Phase 2 cleaner burning gasoline.	12/9/99 6/16/00 EO
Consumer products – mid-term measures II: The regulation which adds emission limits for 2 new categories and tightens emission limits for 15 categories of consumer products.	10/28/99
Portable fuel cans: The regulation requiring that new portable fuel containers, used to refuel lawn and garden equipment, motorcycles, and watercraft, be spill-proof beginning in 2001.	9/23/99 7/6/00 EO
Clean fuels at service stations: The amendments rescinding requirements applicable to SCAB in 1994-1995, modifying the formula for triggering requirements, and allowing the Executive Officer to make adjustments to the numbers of service stations required to provide clean fuels.	7/22/99
Gasoline vapor recovery: The amendments certification and test methods.	6/24/99
Reformulated gasoline oxygenate: The amendments rescind the requirement for wintertime oxygenate in gasoline sold in the Lake Tahoe Air Basin and requiring the statewide labeling of pumps dispensing gasoline containing MTBE.	6/24/99
Marine pleasurecraft: The regulation controls emissions from spark-ignition marine engines, specifically, outboard marine engines and personal watercraft.	12/11/98 2/17/00 EO 6/14/00 EO
Voluntary accelerated light duty vehicle retirement: The regulation sets standards for voluntary accelerated retirement program.	12/10/98 10/22/99 EO
Off-highway recreational vehicles and engines: The amendments allow non-complying vehicles to operate in certain seasons and in certain ORV-designated areas.	12/10/98 10/22/99 EO
On-road motorcycles: Amended on-road motorcycle regulations, to lower the tailpipe emission standards for ROG and NOx.	12/10/98
Portable equipment registration program (PERP): The amendments exclude non-dredging equipment operating in OCS areas and equipment emitting hazardous pollutants, include NSPS Part OOO rock crushers, require SCR emission limits and onshore emission offsets from dredging equipment operating in OCS areas, set catalyst emission limits for gasoline engines, and relieve certain retrofitted engines from periodic source testing.	12/10/98
Liquid petroleum gas motor fuel specifications: The amendment rescinds 5% propene limit and extending 10% limit indefinitely.	12/11/98
Reformulated gasoline: The amendments rescind the RVP exemption for fuel with 10% ethanol and allow for oxygen contents up to 3.7% if the Predictive Model weighted emissions to not exceed original standards.	12/11/98
Consumer products: The amendments add new VOC test methods, to modify Method 310 to quantify low vapor pressure VOC (LVP-VOC) constituents, and to exempt LVP-VOC from VOC content limits	11/19/98
Consumer products: The amendments extend the 1999 VOC compliance deadline for several aerosol coatings, antiperspirants and deodorants, and other consumer products categories to 2002, to exempt methyl acetate from the VOC definition, and make other minor changes.	11/19/98
Low-emission vehicle program (LEV II): The regulations add exhaust emission standards for most sport utility vehicles, pick-up trucks and mini-vans, lowering tailpipe standards for cars, further reducing evaporative emission standards, and providing additional means for generating zero-emission vehicle credits.	11/5/98 9/17/99 EO
Off-road engine aftermarket parts: The implementation of a new program to test and certify aftermarket parts in gasoline and diesel, light-duty through heavy duty, engines used in off-road vehicles and equipment.	11/19/98 10/1/99 EO 7/18/00 EO
Off-road spark ignition engines: The new emission standards for small and large spark ignition engines for off-road equipment, a new engine certification program, an in-use compliance testing program, and a three-year phase-in for large LSI.	10/22/98
Gasoline deposit control additives: The amendments decertify pre-RFG additives, tighten the inlet valve deposit limits, add a combustion chamber deposit limit, and modify the test procedures to align with the characteristics of reformulated gasoline formulations.	9/24/98 4/5/99 EO

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Stationary source test methods: The amendments to stationary source test methods align better with federal methods.	8/27/98 7/2/99 EO
Locomotive MOA for South Coast: The Memorandum of agreement (MOA) signed by ARB, U.S. EPA and major railroads to concentrate cleaner locomotives in the South Coast by 2010 and fulfill 1994 ozone SIP commitment.	7/2/98
Gasoline vapor recovery: The amendments to certification and test methods add methods for onboard refueling vapor recovery, airport refuelers, and underground tank interconnections, and make minor changes to existing methods.	5/21/98 8/27/98
Reformulated gasoline: The amendments rescind the wintertime oxygenate requirement, allow for sulfur content averaging, and make other minor technical amendments.	8/27/98
Ethylene oxide sterilizers: The amendments to the ATCM streamline source testing requirements, add EtO limits in water effluent from control devices, and make other minor changes.	5/21/98
Chrome platers: The amendments to ATCM harmonize with requirements of federal NESHAP standards for chrome plating and chromic acid anodizing facilities.	5/21/98
On-road heavy-duty vehicles: The amendments align on-road heavy duty vehicle engine emission standards with EPA's 2004 standards and align certification, testing, maintenance, and durability requirements with those of U.S. EPA.	4/23/98 2/26/99 EO
Small off-road engines (SORE): The amendments grant a one-year delay in implementation, relaxation of emissions standards for non-handheld engines, emissions durability requirements, averaging/banking/trading, harmonization with the federal diesel engine regulation, and modifications to the production line testing requirements.	3/26/98
Heavy duty vehicle smoke inspection program: The amendments require annual smoke testing, set opacity limits, and exempt new vehicles from testing for the first four years.	12/11/97 3/2/98 EO
Consumer products (hairspray credit program): The standards for the granting of tradable emission reduction credits achieved by sales of hairspray products having VOC contents less than required limits.	11/13/97
Light-duty vehicle off-cycle emissions: The standards to control excess emissions from aggressive driving and air conditioner use in light duty vehicles and added two light duty vehicle test methods for certification of new vehicles under these standards.	7/24/97 3/19/98 EO
Consumer products: The amendments add VOC limits to 18 categories of consumer products used in residential and industrial cleaning, automobile maintenance, and commercial poisons.	7/24/97
Enhanced evaporative emissions standards: The amendments extend the compliance date for ultra-small volume vehicle manufacturers by one year.	5/22/97
Emission reduction credit program: The standards for District establishment of ERC programs including certification, banking, use limitation, and reporting requirements.	5/22/97
Lead as a toxic air contaminant: The amendment designates inorganic lead as a toxic air contaminant.	4/24/97
Consumer products (hair spray): The amendments (1) delay a January 1, 1998, compliance deadline to June 1, 1999, (2) require progress plans from manufacturers, and (3) authorize the Executive Officer to require VOC mitigation when granting variances from the June 1, 1999 deadline.	3/27/97
Portable engine registration program (PERP): The standards for (1) the permitting of portable engines by ARB and (2) District recognition and enforcement of permits.	3/27/97
Liquefied petroleum gas: The amendments extend the compliance deadline from January 1, 1997, to January 1, 1999, for the 5% propene limit in liquefied petroleum gas used in motor vehicles.	3/27/97
Onboard diagnostics, phase II: The amendments extend the phase-in of enhanced catalyst monitoring, modify misfire detection requirements, add PVC system and thermostat monitoring requirements, and require manufacturers to sell diagnostic tools and service information to repair shops.	12/12/96
Consumer products: The amendments delay 25% VOC compliance date for aerosol adhesives, clarify portions of the regulation, exempt perchloroethylene from VOC definition, extend the sell-through time to three years, and add perchloroethylene reporting requirements.	11/21/96
Consumer products (test method): The amendment adds Method 310 for the testing of VOC content in consumer products.	11/21/96
Pollutant transport designation: The amendments modify transport couples from the Broader Sacramento area and add couples to the newly formed Mojave Desert and Salton Sea Air Basins.	11/21/96
Diesel fuel certification test methods: The amendments specify the test methods used for quantifying the constituents of diesel fuel.	10/24/96 6/4/97 EO
Wintertime requirements for utility engines & off-highway vehicles : The Optional hydrocarbon and NOx standards for snow throwers and ice augers, raising CO standard for specialty vehicles under 25hp.	9/26/96
Large off-road diesel Statement of Principles: National agreement between ARB, U.S. EPA, and engine manufacturers to reduce emissions from heavy-duty off-road diesel equipment four years earlier than expected in the 1994 SIP for ozone.	9/13/96
Regulatory improvement initiative: Rescinded two regulations relating to fuel testing in response to Executive Order W-127-95.	5/30/96

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Zero emission vehicles: The amendments eliminate zero emission vehicle quotas between 1998 and 2002, and approved MOUs with seven automobile manufacturers to accelerate release of lower emission "49 state" vehicles.	3/28/96 7/24/96 EO
CaRFG variance requirements: The amendments add a per gallon fee on non-compliant gasoline covered by a variance and to made administrative changes in variance processing and extension.	1/25/96 2/5/96 EO 4/2/96 EO
Utility and lawn and garden equipment engines: The amendment relaxes the CO standard from 300 to 350 ppm for Class I and II utility engines.	1/25/96
National security exemption of military tactical vehicles: Such vehicles would not be required to adhere to exhaust emission standards.	12/14/95
CaRFG regulation amendments: The amendments allow for downstream addition of oxygenates and expansion of compliance options for gasoline formulation.	12/14/95
Required additives in gasoline (deposit control additives): Terms, definitions, reporting requirements, and test procedures for compliance are to be clarified.	11/16/95
CaRFG test method amendments: The amendments designate new test methods for benzene, aromatic hydrocarbon, olefin, and sulfur content of gasoline.	10/26/95
Motor vehicle inspection and maintenance program: Handled by BAR.	10/19/95 by BAR
Antiperspirants and deodorants, consumer products, and aerosol coating products: Ethanol exemption for all products, modifications to aerosol special requirements, modifications for regulatory language consistency, modifications to VOC definition.	9/28/95
Low emission vehicle (LEV III) standards: Reactivity adjustment factors, introduction of medium-duty ULEVs, window labels, and certification requirements and test procedures for LEVs.	9/28/95
Medium- and heavy-duty gasoline trucks: Expedited introduction of ultra-low emission medium-duty vehicles and lower NOx emission standards for heavy-duty gasoline trucks to fulfill a 1994 ozone SIP commitment.	9/1/95
Retrofit emission standards: all vehicle classes to be included in the alternate durability test plan, kit manufacturers to be allowed two years to validate deterioration factors under the test plan, update retrofit procedures allowing manufacturers to disable specific OBDs if justified by law.	7/27/95
Gasoline vapor recovery systems: Revised certification and test procedures.	6/29/95
Onboard refueling vapor recovery standards: 1998 and subsequent MY engine cars, LD trucks, and MD trucks less than 8500 GVWR.	6/29/1995 4/24/96 EO
Heavy duty vehicle exhaust emission standards for NOx: Amendments to standards and test procedures for 1985 and subsequent MY HD engines, amendments to emission control labels, amendments to Useful Life definition and HD engines and in-use vehicle recalls.	6/29/95
Aerosol coatings regulation: The regulation meets California Clean Air Act requirements and a 1994 ozone SIP commitment.	3/23/95
Periodic smoke inspection program: Delays start of PSIP from 1995 to 1996.	12/8/94
Onboard diagnostics phase II: The Amendments clarify regulation language, ensure maximum effectiveness, and address manufacturer concerns regarding implementation.	12/8/94
Alternative control plan (ACP) for consumer products: A voluntary, market-based VOC emissions cap upon a grouping of consumer products, flexible by manufacturer that will minimize overall costs of emission reduction methods and programs.	9/22/94
Diesel fuel certification: new specifications for diesel engine certification fuel, amended oxygen specification for CNG certification fuel, and amended commercial motor vehicle liquefied petroleum gas regulations.	9/22/94
Utility and lawn and garden equipment (UGLE) engines: Modification to emission test procedures, ECLs, defects warranty, quality-audit testing, and new engine compliance testing.	7/28/94
Evaporative emissions standards and test procedures: The evaporative emissions standards for medium-duty vehicles.	2/10/94
Off-road recreational vehicles: The emission control regulations for off-road motorcycles, all-terrain vehicles, go-karts, golf carts, and specialty vehicles.	1/1/94
Perchloroethylene from dry cleaners: The measure to control perchloroethylene emissions from dry cleaning operations.	10/1/93
Wintertime oxygenate program: The Amendments to the control time period for San Luis Obispo County, exemption for small retailers bordering Nevada, flexibility in gasoline delivery time, calibration of ethanol blending equipment, gasoline oxygen content test method.	9/9/93
Onboard diagnostic phase II	7/9/93
Urban transit buses: The amended regulation to tighten state NOx and particulate matter (PM) standards for urban transit buses beyond federal standards beginning in 1996.	6/10/93
1-year implementation delay in emission standards for utility engines	4/8/93

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Non-ferrous metal melting: The Air Toxic Control Measure for emissions of cadmium, arsenic, and nickel from non-ferrous metal melting operations.	1/1/93
Certifications requirements for low emission passenger cars, light-duty trucks & medium duty vehicles	1/14/93
Airborne toxic control measure for emissions of toxic metals from non-ferrous metal melting	12/10/92
Periodic self-inspection program: Implemented state law establishing a periodic smoke self-inspection program for fleets operating heavy-duty diesel-powered vehicles.	12/10/92
Notice of general public interest for consumer products	11/30/92
Substitute fuel or clean fuel incorporated test procedures	11/12/92
New vehicle testing using CaRFG Phase 2 gasoline: The amendments require the use of CaRFG Phase 2 gasoline in the certification of exhaust emissions in new vehicle testing.	8/13/92
Standards and test procedures for alternative fuel retrofit systems	5/14/92
Alternative motor vehicle fuel certification fuel specification	3/12/92
Heavy-duty off-road diesel engines: The first exhaust emission standards and test procedures for heavy-duty off-road diesel engines beginning in 1996.	1/9/92
Consumer Products - Tier II: Tier II of regulations to reduce emissions from consumer products.	1/9/92
Wintertime oxygen content of gasoline: The regulation requiring the addition of oxygenates to gasoline during winter to satisfy federal Clean Air Act mandates for CO nonattainment areas.	12/1/91
CaRFG Phase 2: The CaRFG phase 2 specifications including lowering vapor pressure, reducing the sulfur, olefin, aromatic, and benzene content, and requiring the year-round addition of oxygenates to achieve reductions in ROG, NOx, CO, oxides of sulfur (SOx) and toxics.	11/1/91
Low emissions vehicles amendments revising reactivity adjust factor (RAF) provisions and a RAF for M85 transitional low emission vehicles	11/14/91
Onboard diagnostic, phase II	11/12/91
Onboard diagnostics for light-duty trucks and light & medium-duty motor vehicles	9/12/91
Utility and lawn & garden equipment: The first off-road mobile source controls under the California Clean Air Act regulating utility, lawn and garden equipment.	12/1/90
Control for abrasive blasting	11/8/90
Roadside smoke inspections of heavy-duty vehicles: The regulations implementing state law requiring a roadside smoke inspection program for heavy-duty vehicles.	11/8/90
Consumer Products Tier I: Tier I of standards to reduce emissions from consumer products.	10/11/90
CaRFG Phase I: CaRFG Phase I reformulated gasoline regulations to phase-out leaded gasoline, reduce vapor pressure, and require deposit control additives.	9/1/90
Low-emission vehicle (LEV) and clean fuels: The landmark LEV/clean fuel regulations which called for the gradual introduction of cleaner cars in California. The regulations also provided a mechanism to ensure the availability of alternative fuels when a certain number of alternative fuel vehicles are sold.	9/1/90
Evaporative emissions from vehicles: Modified test procedure to include high temperatures (up to 105 F) and ensure that evaporative emission control systems function properly on hot days.	8/9/90
Dioxins from medical waste incinerators: The Airborne Toxic Control Measure to reduce dioxin emissions from medical waste incinerators.	7/1/90
CA Clean Air Act guidance for permitting: Approved California Clean Air Act permitting program guidance for new and modified stationary sources in nonattainment areas.	7/1/90
Consumer products BAAQMD	6/14/90
Medium duty vehicle emission standards: The three new categories of low emission MDVs, required minimum percentages of production, and established production credit and trading.	6/14/90
Medium-duty vehicles: The test procedures for medium-duty vehicles to require whole-vehicle testing instead of engine testing. This modification allowed enforcement of medium-duty vehicle standards through testing and recall.	6/14/90
Ethylene oxide sterilizers: Airborne Toxic Control Measure to reduce ethylene oxide emissions from sterilizers and aerators.	5/10/90
Asbestos in serpentine rock: Airborne Toxic Control Measure for asbestos-containing serpentine rock in surfacing applications.	4/1/90
Certification procedure for aftermarket parts	2/8/90
Antiperspirants and deodorants: First consumer products regulation, setting standards for antiperspirants and deodorants.	11/1/89
Residential woodstoves: Suggested control measure for the control of emissions from residential wood combustion.	11/1/89
On-Board Diagnostic Systems II: The regulations implement the second phase of on-board diagnostic requirements which alert drivers of cars, light-trucks and medium-duty vehicles when the emission control system is not functioning properly.	9/1/89
Cars and light-duty trucks: The regulations reduce ROG and CO emissions from cars and light trucks by 35 percent.	6/1/89

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Architectural coatings: Suggested control measure to reduce ROG emissions from architectural coatings.	5/1/89
Chrome from cooling towers: Airborne Toxic Control Measure to reduce hexavalent chromium emissions from cooling towers.	3/1/89
Reformulated Diesel Fuel: Regulations requiring the use of clean diesel fuel with lower sulfur and aromatic hydrocarbons beginning in 1993.	11/1/88
Vehicle Recall: The regulations implement a recall program which requires auto manufacturers to recall and fix vehicles with inadequate emission control systems (Vehicles are identified through in-use testing conducted by the ARB).	9/1/88
Suggested control measure for oil sumps: Suggested control measure to reduce emissions from sumps used in oil production operations.	8/1/88
Chrome platers: Airborne Toxic Control Measure to reduce emissions of hexavalent chromium emissions from chrome plating and chromic acid anodizing facilities.	2/1/88
Suggested control measure for boilers: Suggested control measure to reduce NOx emissions from industrial, institutional, and commercial boilers, steam generators and process heaters.	9/1/87
Benzene from service stations: The Airborne Toxic Control Measure to reduce benzene emissions from retail gasoline service stations (Also known as Phase II vapor recovery).	7/1/87
Agricultural burning guidelines: Amended existing guidelines to add provisions addressing wildland vegetation management.	11/1/86
Heavy-duty vehicle certification: Amended certification of heavy-duty diesel and gasoline-powered engines and vehicles to align with federal standards.	4/1/86
Cars and light-duty trucks: The regulations reduce NOx emissions from passenger cars and light-duty trucks by 40 percent.	4/1/86
Sulfur in diesel fuel: Removed exemption for small volume diesel fuel refiners.	6/1/85
On-Board Diagnostics I: The regulations require the use of on-board diagnostic systems on gasoline-powered vehicles to alert the driver when the emission control system is not functioning properly.	4/1/85
Suggested control measure for wood coatings: Suggested control measure to reduce emissions from wood furniture and cabinet coating operations.	3/1/85
Suggested control measure for resin manufacturing: Suggested control measure to reduce ROG emissions from resin manufacturing.	1/1/85