Staff Report

CARB Review of the 2022 Air Quality Management Plan for the 70 parts per billion 8-hour Ozone Standard in the South Coast Air Basin and Coachella Valley

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CALIFORNIA
AIR RESOURCES BOARD

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Table of Contents

I. Executive Summary

This report presents the California Air Resources Board (CARB or Board) staff's assessment of the South Coast Air Quality Management District (District) 2022 Air Quality Management Plan (2022 AQMP) for the 70 parts per billion 8-hour ozone Standard (70 ppb ozone standard) in the South Coast Air Basin (South Coast) and Coachella Valley. CARB staff has concluded that the 2022 AQMP, with the CARB Staff Report, meets State Implementation Plan (SIP) planning requirements of the Clean Air Act (Act), including attainment demonstrations for 2037, emissions inventories, reasonable further progress (RFP) demonstrations and associated Motor Vehicle Emissions Budgets (MVEB), discussion of contingency measures, and a Vehicle Miles Traveled (VMT) offsets demonstration for the Coachella Valley. The Board is scheduled to consider the 2022 AQMP on January 26, 2023. If adopted, CARB will submit the 2022 AQMP and Section VI.A.ii, Section VII.A, and Appendices A, B and C of this CARB Staff Report to the U.S. Environmental Protection Agency (U.S. EPA) as a revision to the California SIP.

The Act requires U.S. EPA to set air quality standards and periodically review the latest research on air pollution and health to ensure that standards remain protective of public health. Based on research demonstrating adverse health effects at lower exposure levels, U.S. EPA has set a series of increasingly health protective ozone standards, beginning with a 1-hour ozone standard in 1979. Subsequent health studies demonstrated an even greater adverse response of exposure to ozone over longer time periods resulting in U.S. EPA establishing an 8-hour ozone standard of 80 parts per billion (ppb) in 1997 and a 75 ppb 8-hour ozone standard in 2008. CARB and the District have developed a series of SIPs that detail the actions needed to meet these standards, with each SIP and the corresponding control programs providing the foundation for subsequent planning efforts. The SIP process established under the Act has been an effective and important driver for air quality progress in the South Coast and Coachella Valley.

In 2015, U.S. EPA further strengthened the 8-hour ozone standard to 70 ppb, and on June 4, 2018, U.S. EPA designated the South Coast and the Coachella Valley as nonattainment for the 70 ppb ozone standard[1]. The 2022 AQMP addresses the 70 ppb ozone standard for both areas, representing the next building block in planning efforts to meet increasingly health protective air quality standards.

In the South Coast and Coachella Valley, the District has strived to reduce ozone-causing emissions from the sources of these pollutants under their regulatory authority by setting emission limits on power plants, refineries, other industrial complexes in addition to area sources, such as gas stations, dry cleaners and paints and coatings. As a result, oxides of nitrogen (NOx), the main precursor to ozone formation in the South Coast and Coachella Valley, emitted from the sources primarily regulated by the District have been reduced by

[1] 83 FR 25776, Posted June 4, 2018 and effective August 3, 2018, "Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards", *https://www.govinfo.gov/content/pkg/FR-2018-06-04/pdf/2018-11838.pdf*

over 60 percent since 2000. In addition to NOx, since 2000, the District has reduced the other precursor to ozone, reactive organic gases (ROG) by approximately 45 percent from these sources.

CARB's comprehensive strategy to reduce emissions from mobile sources consists of emission standards for new vehicles including zero-emission requirements, in-use programs to reduce emissions from existing vehicles and equipment fleets, cleaner fuels, and incentive programs to accelerate market penetration of the cleanest vehicles beyond what is achieved by regulations alone. For on-road mobile sources primarily regulated by CARB, the NOx emissions today are almost 80 percent below those emissions in 2000, even though the number of vehicles on the road has increased dramatically.

Beyond current programs, staff also developed the 2022 State Strategy for the State Implementation Plan (2022 State SIP Strategy) to support attainment of the 70 ppb ozone standard across the State. The 2022 State SIP Strategy describes the control measures for State-regulated sources that CARB will pursue to reduce emissions to the levels needed for attainment of the 70 ppb ozone standard in the South Coast, Coachella Valley, and across California. This CARB Staff Report also proposes an aggregate commitment of emissions reductions in 2037 of 95.7 tons per day (tpd) of NOx and 18.2 tpd of reactive organic gases (ROG) in the South Coast, and 5.2 tpd of NOx and 0.6 tpd of ROG in Coachella Valley (Table 1), including a subset specifically from on-road mobile sources for transportation conformity purposes, based on measures included in the 2022 State SIP Strategy.

Table 1 - Proposed CARB Emissions Reductions Commitments

Emissions Reductions	2037 NOx (tpd)	2037 ROG (tpd)
South Coast – Total Aggregate Emission Reductions	95.7	18.2
Subset from On-Road Mobile Sources	11.6	4.3
Coachella Valley– Total Aggregate Emission Reductions	5.2	0.6
Subset from On-Road Mobile Sources	0.9	0.2

The measures in the 2022 State SIP Strategy will also reduce emissions in the many low-income and underserved communities that continue to experience disproportionately high levels of air pollution, and support other CARB planning efforts.

The Board approved the 2022 State SIP Strategy and the commitments to pursue the measures included therein on September 22, 2022. When coupled with emissions reductions from current programs in the baseline inventory, reductions from measures in the 2022 State SIP Strategy and the 2022 AQMP will provide for attainment of the 70 ppb ozone standard in South Coast and Coachella Valley by the 2037 attainment year. CARB staff has concluded that the 2022 AQMP, together with the CARB Staff Report, meet the requirements of the Act under the 70 ppb ozone standard, and thus recommends that the Board adopt the aggregate emissions reduction commitment, along with the 2022 AQMP and the planning emissions inventories, RFP demonstrations, and VMT offset demonstration contained in the CARB Staff Report as a revision to the California SIP.

II. Background

Ozone, an important component of smog, is a highly reactive and unstable gas capable of damaging living cells, such as those present in the linings of human lungs. This pollutant forms in the atmosphere through complex reactions between NOx and ROG directly emitted from vehicles, industrial plants, consumer products and many other sources. Ozone is a powerful oxidant – its actions can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Depending on the level of exposure, ozone can cause coughing and sore or scratchy throat, make it more difficult to breathe deeply and vigorously and cause pain when taking a deep breath, inflame and damage the airways, make the lungs more susceptible to infection, aggravate lung diseases such as asthma, emphysema, and chronic bronchitis, and increase the frequency of asthma attacks.

The Act requires U.S. EPA to set air quality standards and periodically review the latest research on air pollution and health to ensure that standards remain protective of public health. Based on research demonstrating adverse health effects at lower exposure of ozone levels, U.S. EPA has set a series of increasingly health-protective ozone standards, beginning with a 1-hour ozone standard in 1979. Subsequent health studies demonstrated an even greater adverse response of exposure to ozone over longer time periods, resulting in U.S. EPA establishing 8-hour ozone standards of 80 ppb in 1997, 75 ppb in 2008, and 70 ppb in 2015.

Effective August 3, 2018, U.S. EPA designated the South Coast and Coachella Valley as nonattainment areas for the 70 ppb ozone standard; the South Coast was classified as Extreme with an August 3, 2038 attainment date, and the Coachella Valley was classified as Severe with an August 3, 2033 attainment date[2]. During the SIP development process, the District determined that the Coachella Valley could not meet a Severe attainment deadline and is requesting, as part of the 2022 AQMP, the area be classified as Extreme with an August 3, 2038 attainment date. To address the 70 ppb ozone standard, on December 2, 2022, the District adopted the 2022 AQMP.

During the SIP development process, the District determined that the Coachella Valley could not meet a Severe attainment deadline and requested the area be classified as Extreme with an August 3, 2038 attainment date. To address the 70 ppb ozone standard, the District developed and, on December 2, 2022, adopted the 2022 AQMP. Due to the timing of the ozone season, the 2022 AQMP must demonstrate the South Coast and Coachella Valley nonattainment areas will attain the standard by the end of 2037, the last full ozone season prior to the attainment data. The 2022 AQMP also addresses additional requirements of the

[2] 83 FR 25776, Posted June 4, 2018 and effective August 3, 2018, "Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards", *https://www.govinfo.gov/content/pkg/FR-2018-06-04/pdf/2018-11838.pdf*

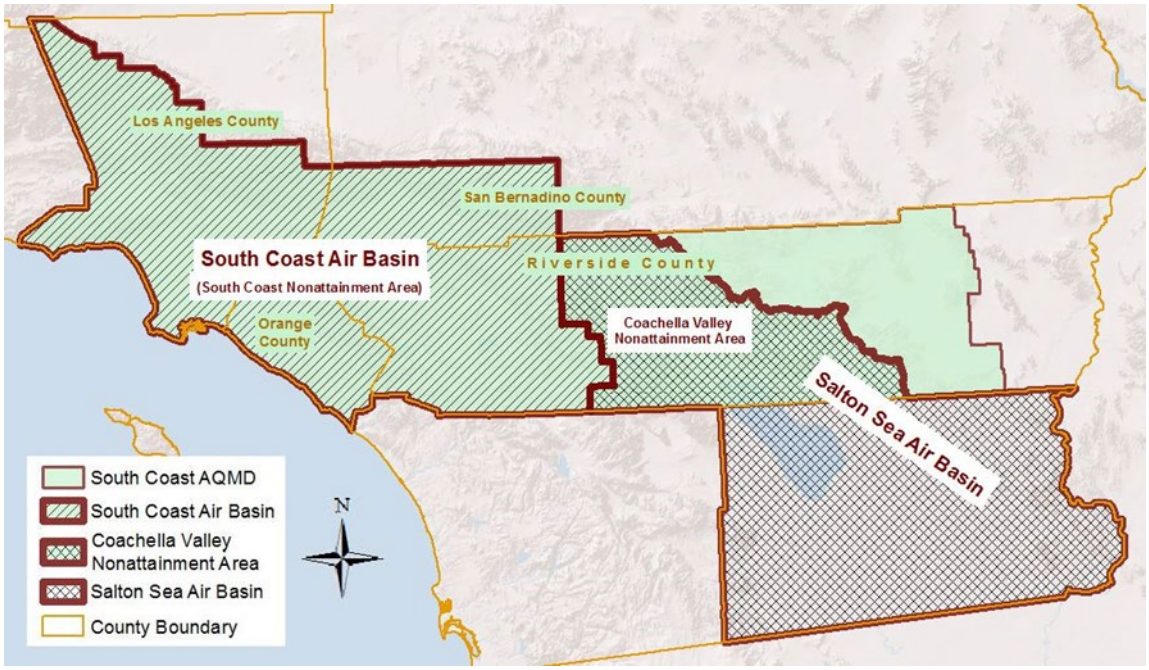
Act applicable to Extreme 8-hour ozone nonattainment areas, consistent with U.S. EPA's 2018 Implementation Rule for the 70 ppb ozone standard (Implementation Rule)[3].

III. Nature of the Ozone Problem in the South Coast and Coachella Valley

A. South Coast Air Basin

The South Coast Air Basin includes the southern two-thirds of Los Angeles County, all of Orange County, and the western, urbanized portions of Riverside and San Bernardino Counties. The area generally forms a lowland plain, bounded by the Pacific Ocean on the west and by mountains on the other three sides (Figure 1).

Figure 1: Map of the South Coast Air Basin and Coachella Valley Areas



The South Coast is the nation's second largest urban area and California's largest metropolitan region. It is home to approximately 17 million people, over 40 percent of the State's population. The South Coast is also home to over 11 million passenger vehicles that, together with the commercial vehicles on the roads, travel over 145 billion miles per year. Emissions from these vehicles along with those from ships, ports, rail yards, and airports,

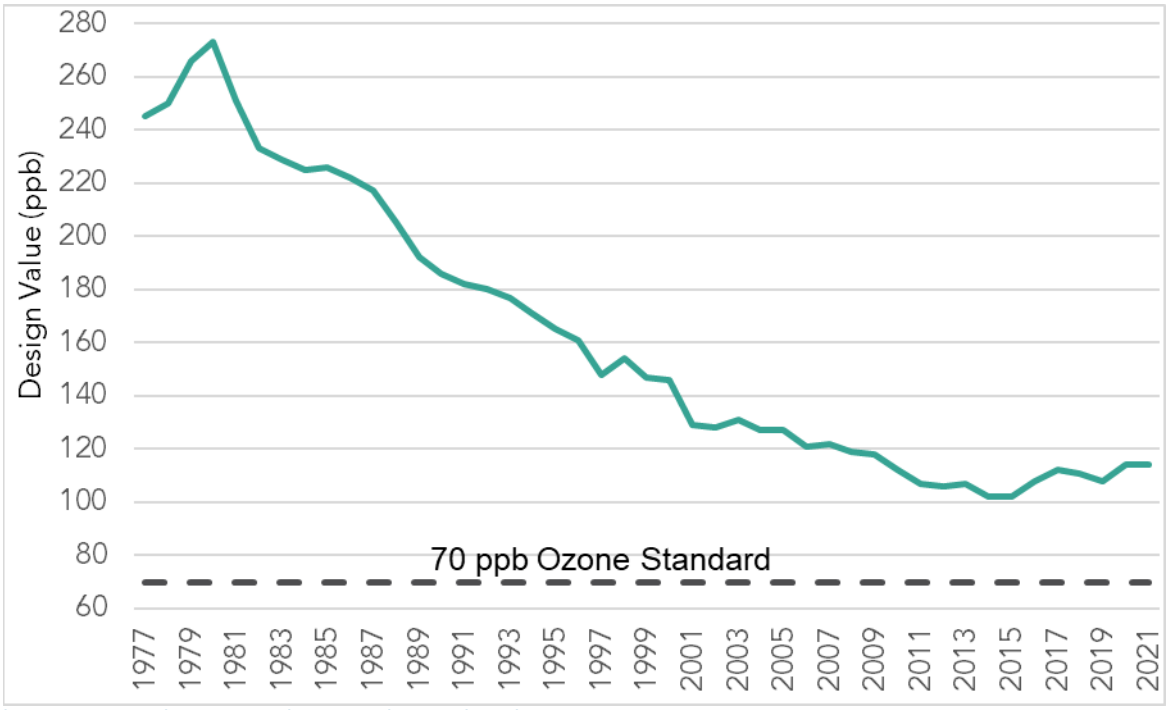
[3] 83 FR 62998, Posted December 6, 2018, "Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements", *https://www.govinfo.gov/content/pkg/FR-2018-12-06/pdf/2018-25424.pdf*

combined with stationary sources such as refineries and power plants, all contribute to ozone air pollution in the South Coast.

The dry Mediterranean climate of the region, complex terrain, and surrounding mountains, coupled with general west to east air flow driven by ocean breezes, leads to ozone concentrations that are highest in the spring through early fall in the central and eastern portions of the South Coast. Due to these factors, the South Coast has the highest ozone concentrations in the nation. In 2021, peak 8-hour ozone levels were 127 ppb, over 80 percent above the 70 ppb ozone standard. Over the last three years the standard was exceeded somewhere in the region an average of almost 140 days each summer.

While ozone levels are still well above the 70 ppb ozone standard, the South Coast has made dramatic progress in reducing 8-hour ozone concentrations over the last 40 years. This improvement is a result of comprehensive control programs that have reduced ozone precursor emissions. Figure 2 illustrates progress in reducing 8-hour ozone design values, used to measure ozone air quality, in the South Coast. Design values are based on monitored air quality and are calculated from the fourth highest daily ozone measurement each year, averaged over three consecutive years. The highest value of all monitoring sites in the nonattainment area represents the area's regulatory design value for a given year. Today, the 8-hour ozone design value in the South Coast is more than 50 percent lower than it was in the 1970s. This progress in reducing pollution has occurred even as population and the number of vehicles on the road increased substantially in the South Coast.

Figure 2: 8-hour Ozone Trends in the South Coast Air Basin



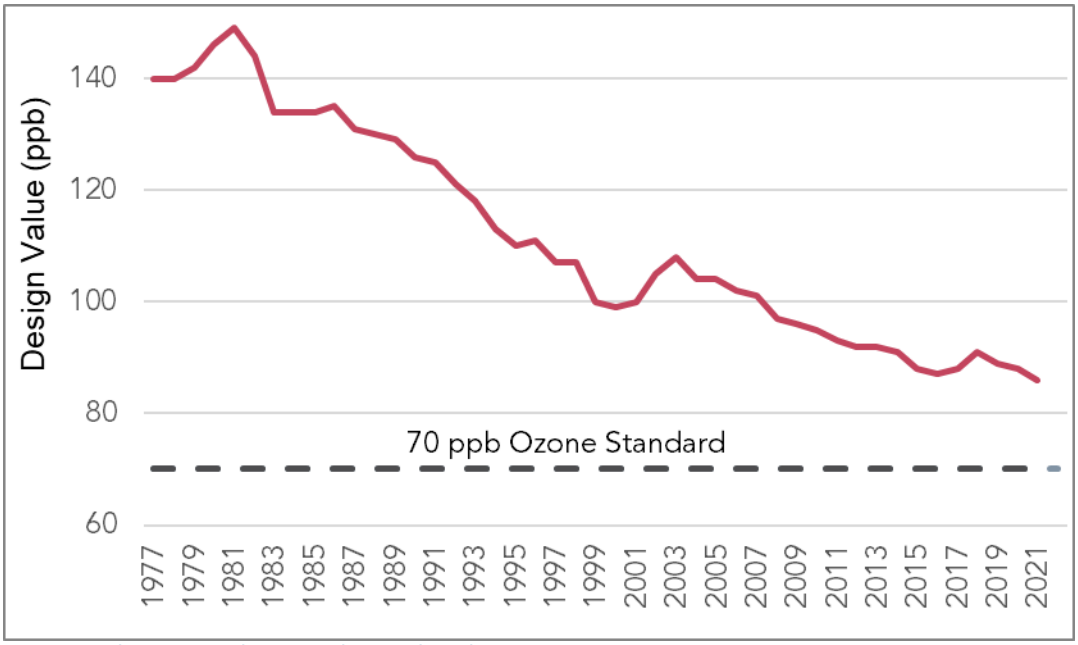
Source: *https://www.arb.ca.gov/adam/trends/trends1.php*

B. Coachella Valley

The Coachella Valley is the portion of Riverside County that lies in the Salton Sea Air Basin (Figure 1). The Coachella Valley is surrounded by large mountain ranges and has average daytime temperatures in the summer months of over 100 degrees. These conditions combine with local emissions and transported ozone and ozone precursors from the South Coast result in levels of ozone that exceed the 8-hour ozone standard. In 2021, the 8-hour ozone design value in the Coachella Valley was 86 ppb, 23 percent over the 70 ppb ozone standard.

As emissions have been reduced in both the South Coast and Coachella Valley from implementation of State and District programs, ozone levels in the Coachella Valley have decreased significantly. Today, the 8-hour ozone design value in the Coachella Valley is almost 40 percent below the design values in the late 1970s (Figure 3).

Figure 3: 8-hour Ozone Trends in Coachella Valley



Source: *https://www.arb.ca.gov/adam/trends/trends1.php*

IV. Clean Air Act SIP Requirements

The Act requires that ozone nonattainment areas develop SIP revisions that includes several components necessary to understand the nature of the ozone problem, develop a strategy to solve the ozone problem, and track progress toward meeting the ozone standard. The 2022 AQMP, together with this Staff Report, address the SIP elements required by the Act. These include baseline and future emissions inventories of ROG and NOx, modeled attainment demonstrations for the South Coast and the Coachella Valley, control strategies and emissions reduction commitments necessary to lower the precursor emissions, and other requirements such as demonstrations of rule stringency and progress on reducing emissions. The following sections discuss the necessary Act requirements.

V. Emissions Inventory

An emissions inventory is a critical tool used to evaluate, control, and mitigate air pollution. At its core, an emissions inventory is a systematic listing of the sources of air pollutants along with the amount of pollutants emitted from each source or category over a given time period. SIPs are required to include emissions inventories for the nonattainment area as a basis for modeling to demonstrate attainment and for identifying what sources may need to be targeted through control measures. The emissions inventory is divided into three major categories: stationary, area-wide, and mobile sources. The summer season inventory is used for ozone planning because it reflects the activity levels and conditions presented when higher ozone levels occur in the South Coast and Coachella Valley.

The 2022 AQMP attainment demonstration uses 2018, the year U.S. EPA designated the South Coast and Coachella Valley as nonattainment, as the base year inventory; the inventory uses 2018 emissions and activity levels, and inventories for other years are back-cast or forecast from that base inventory. Stationary and area-wide emissions in the emissions inventories reflect District rules submitted through October 2020, as well as Rule 1109.1 adopted in the November of 2021. The on-road motor vehicle emissions in the emissions inventories were generated using CARB's mobile source emissions model, EMFAC2017. On-road motor vehicle activity data reflect projections provided by the Southern California Association of Governments (SCAG) from their adopted 2020 Regional Transportation Plan/Sustainable Communities Strategy[4] (RTP/SCS). Off-road mobile source emissions were generated using CARB's OFFROAD model. Both the EMFAC2017 and OFFROAD models were developed for use in the 70 ppb 8-hour ozone SIP revisions and represent significant improvements over models used in prior SIP updates.

Although 2018 is used as the base year for the emissions inventory in the modeled attainment demonstration, a 2017 baseline year is used for demonstrating RFP. U.S. EPA guidance requires that inventories be developed and submitted for years that are consistent with the baseline year and milestone years within the RFP demonstration[5]. Specifically, the RFP baseline year emissions inventory should be the emissions inventory for the most recent calendar year, based on U.S. EPA designation, of which a complete triennial inventory was required to be submitted to U.S. EPA. So, for the 70 ppb ozone standard, U.S. EPA finalized its designations in 2018, meaning 2017 is the most recent calendar year in which a triennial inventory was required. Future year inventories needed for the RFP demonstration begin in the sixth year following the baseline year and continue every three years until attainment.

The RFP demonstration also requires that the emissions reductions occur from within the nonattainment area itself, not extending beyond three nautical miles from the coast. A summary of ROG and NOx in-area planning emissions inventories in the South Coast and Coachella Valley is shown in Table 2 and Table 3 for the years 2017, 2018, 2023, 2026, 2029,

[4] https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176

[5] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-51/subpart-CC/section-51.1310#p-51.1310(a)(2)

2032, 2035, and 2037. More detailed planning emissions inventories can be found in Appendix A of this Staff Report. Of the categories in the baseline inventories, ocean-going vessels, aircraft, off-road equipment, trains, and heavy-duty diesel trucks contribute the largest portions of 2037 NOx emissions in the South Coast. In the Coachella Valley, trains, heavy-duty diesel trucks, electric utilities, aircraft, and off-road equipment are the largest sources of NOx in the 2037 baseline inventory.

Table 2: Planning Emission Inventories in the South Coast*
(tpd, summer planning inventory out to 3 nautical miles)

	2017	2018	2023	2026	2029	2032	2035	2037
ROG								
Stationary and Area-wide	213.90	217.83	223.61	229.61	235.01	240.38	245.39	248.95
On-Road Motor Vehicles	88.90	81.22	57.89	50.67	45.78	41.11	37.53	35.88
Off-Road Vehicles and Equipment	109.84	106.12	95.89	84.08	71.11	62.43	56.24	52.84
Total Emissions	412.65	405.17	377.39	364.36	351.90	343.92	339.15	337.67
NOx								
Stationary and Area-wide	51.77	51.61	48.30	45.12	43.17	42.13	41.43	41.33
On-Road Motor Vehicles	169.93	155.85	83.48	59.89	49.93	43.21	38.69	36.69
Off-Road Vehicles and Equipment	126.60	119.37	93.67	90.05	88.14	87.62	85.47	82.68
Total Emissions	348.30	326.83	225.46	195.06	181.24	172.96	165.60	160.69

*values differ slightly from emissions out to 3 nm in the 2022 AQMP due to CHCs and military aircraft emissions being inadvertently included
Source: CEPAM: 2022 SIP Baseline Emission Projections

Table 3: Planning Emission Inventories in the Coachella Valley
(tpd, summer planning inventory out to 3 nautical miles)

	2017	2018	2023	2026	2029	2032	2035	2037
ROG								
Stationary and Area-wide	6.11	6.25	6.79	7.13	7.40	7.69	7.98	248.87
On-Road Motor Vehicles	3.64	3.43	2.65	2.41	2.26	2.10	1.90	35.88
Off-Road Vehicles and Equipment	3.73	3.65	3.14	2.74	2.32	2.01	1.79	52.95
Total Emissions	13.48	13.34	12.58	12.28	11.97	11.80	11.67	337.70
NOx								
Stationary and Area-wide	1.35	1.38	1.59	1.55	1.43	1.39	1.40	1.40
On-Road Motor Vehicles	10.43	9.81	5.85	3.58	3.01	2.72	2.54	2.51
Off-Road Vehicles and Equipment	7.64	7.74	5.88	5.90	6.06	6.09	5.84	5.33
Total Emissions	19.42	18.92	13.32	11.03	10.50	10.20	9.78	9.24

Source: CEPAM: 2022 SIP Baseline Emission Projections

While the planning emissions inventories (Tables 2 and 3) are limited to in-area, the emissions inventory required for the modeled attainment demonstration is broader, including more

emissions that affect the ozone air quality in the South Coast. The emissions used in the attainment demonstration extend out to 100 nautical miles. Table 4 below and Chapter 3 and Appendix III of the 2022 AQMP include the emissions inventories used in the modeled attainment demonstrations in the South Coast and present a summary of the data sources. Note, since the Coachella Valley does not border the sea, the inventory used in the attainment demonstration for Coachella Valley is the same as the inventory used for RFP in Table 3 above.

Table 4: Attainment Demonstration Emission Inventories in the South Coast
(tpd, summer planning inventory out to 100 nautical miles)

	2018	2037
ROG		
Stationary and Area-wide	217.83	248.87
On-Road Motor Vehicles	81.22	35.88
Off-Road Vehicles and Equipment	107.16	54.21
Total Emissions	406.21	338.96
NOx		
Stationary and Area-wide	51.61	41.34
On-Road Motor Vehicles	155.85	36.69
Off-Road Vehicles and Equipment	143.35	106.46
Total Emissions	350.81	184.49

VI. Attainment Demonstration

SIPs must identify both the magnitude of reductions and the actions necessary to achieve those reductions as part of demonstrating attainment of the standard. The District has prepared an attainment demonstration that provides for the most expeditious attainment possible of the 70 ppb ozone standard. The attainment demonstration includes the benefits of CARB and District current control programs whose continued implementation provides new emission reductions each year. The attainment demonstrations in the South Coast and Coachella Valley also include aggregate emissions reductions from new measures included in the 2022 AQMP and measures included in the 2022 State SIP Strategy adopted by the Board in September 2022.the 2022 State SIP Strategy adopted by the Board in September 2022.

The Act requires the use of air quality modeling to demonstrate attainment of an ozone standard. The modeled attainment demonstration in this plan was prepared using photochemical dispersion and meteorological modeling tools developed in response to U.S. EPA modeling guidelines[6]. The model uses emission inventories, meteorology, topography, and air quality to establish the relationship between emissions and air quality at each monitor. The model is then used to simulate future air quality based on changes in emissions and to predict the level of emissions reductions needed to bring the area into attainment with air quality standards.

The District conducted a series of modeled simulations with sequential emission reductions to determine the carrying capacity in the South Coast. These simulations concluded that meeting the 70 ppb ozone standard in the South Coast in 2037 will require that NOx emissions be reduced to 60 tpd, over an 80 percent reduction in NOx emissions from 2018 levels. These reductions will ensure attainment of the 70 ppb ozone standard in 2037 at all stations in the South Coast, with a maximum 2037 modeled design value under the control scenario of 70.3 ppb at the Glendora station.

The attainment demonstration modeling for the South Coast includes the benefits of CARB's existing mobile source control program and District regulations submitted through October 2020 and Rule 1109.1 adopted in the November 2021. The attainment demonstration further includes emissions reductions from new measures the District committed to as a part of the 2022 AQMP and CARB committed to pursue in its 2022 State SIP Strategy. These measures provide the necessary control strategy, demonstrating that the South Coast and Coachella Valley will meet the 70 ppb ozone standard by 2037.

Table 5 summarizes the 2037 emissions modeled in the attainment demonstration, including emissions reductions from the CARB and District measures. Further detail on the modeled attainment demonstration for the South Coast is provided in Chapter 5 and Appendix V of the 2022 AQMP.

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[6] U.S. EPA, 2014, Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5 and Regional Haze, available at https://www.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf

Table 5: 2037 Modeled NOx and ROG Emissions in South Coast
(tpd, summer planning inventory out to 100 nautical miles)

2037 Emissions	NOx	ROG
Baseline Emissions Inventory	184.5	338.9
Proposed CARB Emissions Reductions Commitment	95.7	18.2
District Emissions Reductions Commitment	29.2	1.2
Set Aside emissions (-)	0.5	4.0
Attainment Emissions Inventory	60.2	323.3

Source: 2022 AQMP and 2022 State SIP Strategy, Numbers may not add up due to rounding

The 2022 AQMP documented that attainment of the 70 ppb ozone standard in the Coachella Valley is dependent on significant reductions of ozone and its precursors in the South Coast, (see Chapter 7 in the 2022 AQMP). Modeling further demonstrated that attainment in the Coachella Valley requires that NOx emission in the South Coast be reduced to 70 tpd. Since it is not possible to reach this level of NOx emissions in the South Coast without significant reductions from sources primarily under federal and international regulatory control, attainment in the Coachella Valley cannot be shown before 2037, the year reductions from primarily federal and international sources are estimated (see Chapter 7 in the 2022 AQMP). Emission reductions from sources under CARB's regulatory control will support attainment in the Coachella Valley, and these reductions are shown in Table 6.

Table 6: 2037 Modeled NOx and ROG Emissions in the Coachella Valley
(tpd, summer planning inventory out to 100 nm)

2037 Emissions	NOx	ROG
Baseline Emissions Inventory	9.2	11.7
Proposed CARB Emissions Reductions Commitment	5.2	0.6
Attainment Emissions Inventory	4.0	11.1

U.S. EPA modeling guidance requires that modeled attainment demonstrations be accompanied by a weight of evidence analysis (WOE) to provide a set of complementary analyses. Examining an air quality problem in a variety of ways provides a more informed basis for the attainment strategy as well as a better understanding of the overall problem and the level and mix of emissions controls needed for attainment. In addition to the documentation provided in Appendix V-5-33 of the 2022 AQMP, CARB staff prepared a WOE analysis for both the South Coast and the Coachella Valley.

The South Coast WOE analysis was consistent with the photochemical modeling in the 2022 AQMP. The analysis showed that while the ozone design values have continued to decrease in the South Coast in the last 15 years, the rate of progress has slowed and even reversed at certain monitoring sites. This has been most pronounced at monitoring sites in the San Gabriel Valley. This slowing of progress is indicative of changes in ozone chemistry, as the region transitions from being responsive to both ROG and NOx emission reductions to one

where NOx reductions dominate the changes in ozone concentrations. The analysis concludes that significant NOx reductions beyond current regulations will be necessary for the South Coast to attain the 70 ppb ozone standard in 2037. See Appendix B of this Staff Report for more information.

The WOE analysis for the Coachella Valley also concluded that while ozone levels continue to drop, the area will not be able to meet the 70 ppb standard by the 2037 attainment deadline with currently adopted regulations. However, with the inclusion of the control measures in the upwind South Coast, the analysis agrees with the modeling in the 2022 AQMP that the Coachella Valley will meet the 70 ppb ozone standard by 2037. See Appendix C of this Staff Report for more information.

A. Control Strategy

The ongoing emission reductions from continued implementation of CARB and District current control programs, together with reductions from the measures described in the 2022 State SIP Strategy and 2022 AQMP, provide the attainment control strategy for the South Coast and Coachella Valley to meet the 70 ppb ozone standard. The following sections describe the ongoing and new CARB and District control measures that provide the emission reductions included in the attainment demonstration.

i. CARB Current Control Program

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 consists of emissions standards for new vehicles, in-use programs to reduce emissions from existing vehicle and equipment fleets, cleaner fuels, and incentive programs to accelerate the penetration of the cleanest vehicles beyond that achieved by regulations alone. A detailed description of the current mobile source control programs is included in Appendix IV-B of the 2022 AQMP.

ii. CARB Commitments

SIPs may contain enforceable commitments to achieve the level of emissions necessary to meet federal air quality standards, as defined by the attainment demonstration. The 2022 State SIP Strategy lists new SIP measures and quantifies potential emissions reduction SIP commitments for South Coast and the Coachella Valley based on the measures identified and quantified to date. Adoption of the 2022 State SIP Strategy and the measure schedule by the Board forms the basis of the commitments for emission reductions by the attainment deadlines for each region that will be proposed for Board consideration alongside the respective nonattainment area's SIP. The commitments consist of two components:

1. A commitment to bring an item to the Board for defined new measures or take other specified actions within CARB's authority; and
2. A commitment to achieve aggregate emission reductions by specific dates.

As part of each SIP needing emission reductions from the State, the total aggregate emission reductions and the obligation to make certain proposals to the Board or take other actions within CARB's authority specified in the 2022 State SIP Strategy would become enforceable upon approval by U.S. EPA. While the 2022 State SIP Strategy discusses a range of measures and actions, those measures and actions would still be subject to CARB's formal approval process and would not be final until the Board acts.

1) Commitment to Act on Measures

On September 22, 2022, the Board adopted the 2022 State SIP Strategy list of measures and corresponding schedule. For each of the SIP measures from the 2022 State SIP Strategy shown in Table 7, CARB commits to address each measure as described in this document. For each measure committed to, CARB staff would undertake the actions detailed for each measure. In the instance of measures that involve the development of a rule under CARB's regulatory authority, CARB commits to bring a publicly noticed item before the Board that is either a proposed rule or a recommendation that the Board direct staff to not pursue a rule covering that subject matter at that time. That recommendation would be based on an explanation of why such a rule is unlikely to achieve the relevant emission reductions in the relevant timeframe, and would include a demonstration that the overall aggregate commitment will be achieved despite that rule not being pursued. This public process and CARB hearing would provide additional opportunity for public and stakeholder input, ongoing technology review, and assessments of costs and environmental impacts.

The measures, as proposed by staff to the Board or adopted by the Board, may provide more or less than the initial emission reduction estimates. In addition, action by the Board may include any action within its discretion.

Table 7: Measures and Schedule

Measure	Agency	Action	Implementation Begins
On-Road Heavy-Duty			
Advanced Clean Fleets Regulation	CARB	2023	2024
Zero-Emissions Trucks Measure	CARB	2028	2030
On-Road Light-Duty			
On-Road Motorcycle New Emissions Standards	CARB	2022	2025
Clean Miles Standard	CARB	2021	2023
Off-Road Equipment			
Tier 5 Off-Road Vehicles and Equipment	CARB	2025	2029
Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation	CARB	2022	2024
Transport Refrigeration Unit Regulation Part 2	CARB	2026	2028
Commercial Harbor Craft Amendments	CARB	2022	2023
Cargo Handling Equipment Amendments	CARB	2025	2026
Off-Road Zero-Emission Targeted Manufacturer Rule	CARB	2027	2031
Clean Off-Road Fleet Recognition Program	CARB	2025	2027
Spark-Ignition Marine Engine Standards	CARB	2029	2031
Other			
Consumer Products Standards	CARB	2027	2028
Zero-Emission Standard for Space and Water Heaters	CARB	2025	2030
Enhanced Regional Emission Analysis in State Implementation Plans[7]	CARB	2025	2023
Pesticides: 1,3-Dichloropropene Health Risk Mitigation	DPR[8]	2022	2024
Primarily-Federally and Internationally Regulated Sources – CARB Measures			
In-Use Locomotive Regulation	CARB	2023	2024
Future Measures for Aviation Emissions reductions	CARB	2027	2029
Future Measures for Ocean-Going Vessel Emissions Reductions	CARB	2027	TBD
Primarily-Federally and Internationally Regulated Sources – Federal Action Needed[9]			
On-Road Heavy-Duty Vehicle Low-NOx Engine Standards	U.S. EPA	2022	2027
On-Road Heavy-Duty Vehicle Zero-Emission Requirements	U.S. EPA	TBD	TBD
Off-Road Equipment Tier 5 Standard for Preempted Engines	U.S. EPA	TBD	TBD
Off-Road Equipment Zero-Emission Standards Where Feasible	U.S. EPA	TBD	TBD
More Stringent Aviation Engine Standards	U.S. EPA/ICAO[10]	TBD	TBD
Cleaner Fuel and Visit Requirements for Aviation	U.S. EPA	TBD	TBD
Zero-Emission On-Ground Operation Requirements at Airports	U.S. EPA	TBD	TBD
Airport Aviation Emissions Cap	U.S. EPA	TBD	TBD
More Stringent National Locomotive Emission Standards	U.S. EPA	TBD	TBD
Zero-Emission Standards for Locomotives	U.S. EPA	TBD	TBD
Address Unlimited Locomotives Remanufacturing	U.S. EPA	TBD	TBD
More Stringent NOx and PM Standards for Ocean-Going Vessels	U.S. EPA/IMO[11]	TBD	TBD
Cleaner Fuel and Vessel Requirements for Ocean-Going Vessels	U.S. EPA	TBD	TBD

[7] CARB finalization
[8] California Department of Pesticide Regulation (DPR)
[9] Request U.S. EPA approval under the provisions of Section 182(e)(5) of the Clean Air Act
[10] International Civil Aviation Organization (ICAO)
[11] International Maritime Organization (IMO)

2) Commitment to Achieve Emission Reductions

The following section describes the estimated emission reductions and commitment from the SIP measures identified and quantified to date for the South Coast and Coachella Valley. While the 2022 State SIP Strategy includes estimates of the emission reductions from each of the individual new measures, CARB's overall commitment is to achieve the total emission reductions necessary from State-regulated sources to attain the 70 ppb ozone standard, reflecting the combined reductions from the existing control strategy and new measures. Therefore, if a particular measure does not get its expected emission reductions, the State's overall commitment to achieving the total aggregate emission reductions still exists. If actual emission decreases occur that exceed the projections reflected in the current emission inventory and the 2022 State SIP Strategy, CARB will submit an updated emissions inventory to U.S. EPA as part of a SIP revision. The SIP revision would outline the changes that have occurred and provide appropriate tracking to demonstrate that aggregate emission reductions sufficient for attainment are being achieved through enforceable emission reduction measures. CARB's emission reduction commitments may be achieved through a combination of actions including but not limited to the implementation of control measures; the expenditure of local, State, or federal incentive funds; or through other enforceable measures.

In some cases, actions by federal and international agencies will be needed, or programmatic approaches must be developed and funding secured to achieve reductions through additional transition to cleaner technologies and systems in the relevant sectors. For such situations, the Act includes a provision for approval under the section 182(e)(5) advanced technology provisions to allow this future flexibility for Extreme areas such as the South Coast needing additional reductions to meet the ozone standard. Table 7 includes measures specific to the South Coast that identify how our federal and international partners can achieve these reductions.

To achieve the 70 ppb ozone standard in the South Coast, air quality modeling indicates that total NOx emissions from all sources will need to decrease to approximately 60 tpd in 2037, representing approximately an 80 percent reduction from current levels. These reductions in the South Coast, coupled with additional reductions in the Coachella Valley, will provide for attainment in Coachella Valley. A significant fraction of the needed reductions will come from the existing control program. In addition, although most of the 2016 State SIP Strategy measure commitments have been adopted, there is one (Zero -Emission Forklift) that the Board will be acting upon over the next year, and two that were recently adopted but are not yet accounted for in the baseline emissions inventory (Advanced Clean Cars II, Transport Refrigeration Unit Part 1), as outlined in Table 8. Action will be taken on the remaining measure in the coming year.

Table 8: Reductions from Remaining 2016 State SIP Strategy Measures

Measure	Action	Implementation Begins	South Coast 2037 NOx (tpd)	South Coast 2037 ROG (tpd)	Coachella Valley 2037 NOx (tpd)	Coachella Valley 2037 ROG (tpd)
Advanced Clean Cars II	2022	2026	5	3.8	0.2	0.2
Transport Refrigeration Unit Part I	2022	2023-2024	0.5	0.4	<0.1	<0.1
Zero-Emission Forklift	2023	2026	0.9	0.1	<0.1	<0.1
Total			**6.4**	**4.4**	**0.2**	**0.2**

Numbers may not add up due to rounding.

Table 9 and Table 10 show that, collectively, emissions reductions from CARB's current control program, reductions from the 2016 State SIP Strategy measures still to be adopted, and reductions estimated from the measures in the 2022 State SIP Strategy provide the emissions reductions needed from State sources to support attainment of the 70 ppb ozone standard in the South Coast and Coachella Valley.

Table 9: South Coast NOx Emission Reductions from CARB Programs

CARB Programs in the South Coast	2037 NOx Emission Reductions (tpd)
Current Mobile Source Control Program[12]	166.4
CARB Emissions Reductions Commitments	95.7
2016 State SIP Strategy Measures (Not yet in baseline inventory)	6.4
2022 State SIP Strategy Measures	89.3
Total Reductions	**262.1**

Numbers may not add up due to rounding.

Table 10: Coachella Valley NOx Emission Reductions from CARB Programs

CARB Programs in the Coachella Valley	2037 NOx Emission Reductions (tpd)
Current Mobile Source Control Program[13]	9.7
CARB Emissions Reductions Commitments	5.2
2016 State SIP Strategy Measures (Not yet in baseline inventory)	0.2
2022 State SIP Strategy Measures	5.0
Total Reductions	**14.9**

Numbers may not add up due to rounding.

Included in the measures in the 2022 State SIP Strategy is a suite of actions identified that federal and international entities could take to further control emissions from sources primarily under their regulatory authority. For the South Coast, 'Federal Actions Needed'

[12] Source: 2022 CEPAM v1.01; represents the current baseline emissions out to 100 nautical miles with adopted CARB and district measures

[13] Source: 2022 CEPAM v1.01; represents the current baseline emissions

account for 51.5 tpd of the total NOx emissions reductions estimated from the measures in the 2022 State SIP Strategy. CARB will be requesting approval of these Federal Actions Needed measures under the provisions of Section 182(e)(5) of the Act, as denoted in Table 7 and Table 11.

The NOx reductions needed to attain the 70 ppb ozone standard, and not being submitted under section 182(e)(5) of the Act, are addressed by CARB and District commitments following all applicable U.S. EPA guidance. These emissions reduction commitments of 70.4 tpd NOx in 2037 comprise a limited portion (23 percent) of the total statutorily required program which the State, as evidenced by the decades of successful SIP implementation, is capable of fulfilling. The commitments, as shown in Table 7 and Chapter 4 in the 2022 AQMP, are for a reasonable and appropriate period of time to achieve the goals of meeting the 70 ppb ozone standard in the South Coast and Coachella Valley. The measures in Table 11 and Table 12 reflect the total CARB measures and commitments being submitted for State actions and the estimated emissions reductions for South Coast and Coachella Valley.

Table 11: South Coast Emissions Reductions from the 2022 State SIP Strategy Measures

Measure	2037 NOx (tpd)	2037 ROG (tpd)
On-Road Heavy-Duty		
Advanced Clean Fleets Regulation	6.6	0.5
Zero-Emissions Trucks Measure	4.1	0.4
Total On-Road Heavy-Duty Reductions	10.7	0.9
On-Road Light-Duty		
On-Road Motorcycle New Emissions Standards	0.8	2.1
Clean Miles Standard	<0.1	<0.1
Total On-Road Light-Duty Reductions	0.8	2.1
Off-Road Equipment		
Tier 5 Off-Road Vehicles and Equipment	2.7	NYQ[14]
Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation	1.0	0.1
Transport Refrigeration Unit Regulation Part 2	5.0	0.7
Commercial Harbor Craft Amendments	2.6	0.2
Cargo Handling Equipment Amendments	0.6	0.4
Off-Road Zero-Emission Targeted Manufacturer Rule	NYQ	NYQ
Clean Off-Road Fleet Recognition Program	NYQ	NYQ
Spark-Ignition Marine Engine Standards	0.3	0.7
Total Off-Road Equipment Reductions	12.2	2.0
Other		
Consumer Products Standards	-	8
Zero-Emission Standard for Space and Water Heaters[15]	3.2	0.5
Enhanced Regional Emission Analysis in State Implementation Plans	NYQ	NYQ
Pesticides: 1,3-Dichloropropene Health Risk Mitigation	-	NYQ
Total Other Reductions	3.2	8.5
Primarily-Federally and Internationally Regulated Sources – CARB Measures		
In-Use Locomotive Regulation	10.9	0.4
Future Measures for Aviation Emission Reductions	NYQ	NYQ
Future Measures for Ocean-Going Vessel Emissions Reductions	NYQ	NYQ
Total Primarily-Federally and Internationally Regulated Sources – CARB Measures Reductions	10.9	0.4
Primarily-Federally and Internationally Regulated Sources – Federal Action Needed[16]		
On-Road Heavy-Duty Vehicle Low-NOx Engine Standards	3.8	<0.1
On-Road Heavy-Duty Vehicle Zero-Emission Requirements	NYQ	NYQ
Off-Road Equipment Tier 5 Standard for Preempted Engines	1.6	NYQ
Off-Road Equipment Zero-Emission Standards Where Feasible	2.2	NYQ
More Stringent Aviation Engine Standards	NYQ	NYQ
Cleaner Fuel and Visit Requirements for Aviation	10.2	NYQ
Zero-Emission On-Ground Operation Requirements at Airports	NYQ	NYQ
Airport Aviation Emissions Cap	9.2	NYQ
More Stringent National Locomotive Emission Standards	NYQ	NYQ
Zero-Emission Standards for Locomotives	NYQ	NYQ
Address Unlimited Locomotives Remanufacturing	NYQ	NYQ
More Stringent NOx and PM Standards for Ocean-Going Vessels	0.8	NYQ
Cleaner Fuel and Vessel Requirements for Ocean-Going Vessels	23.7	NYQ
Total Primarily-Federally and Internationally Regulated -Federal Action Needed Reductions	51.5	<0.1
Aggregate Emissions Reductions	89.3	13.9

Numbers may not add up due to rounding.

[14] Not yet quantified (NYQ)

[15] Reductions may be achieved through CARB and/or complementary South Coast AQMD control measures for this sector.

[16] Request U.S. EPA approval under the provisions of Section 182(e)(5) of the Clean Air Act.

Table 12: Coachella Valley Emissions Reductions from the 2022 State SIP Strategy Measures

Measure	2037 NOx (tpd)	2037 ROG (tpd)
On-Road Heavy-Duty		
Advanced Clean Fleets Regulation	0.7	<0.1
Zero-Emissions Trucks Measure	0.8	<0.1
Total On-Road Heavy-Duty Reductions	1.5	0.2
On-Road Light-Duty		
On-Road Motorcycle New Emissions Standards	<0.1	0.1
Clean Miles Standard	<0.1	<0.1
Total On-Road Light-Duty Reductions	<0.1	0.1
Off-Road Equipment		
Tier 5 Off-Road Vehicles and Equipment	0.1	NYQ
Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation	<0.1	<0.1
Transport Refrigeration Unit Regulation Part 2	0.3	<0.1
Cargo Handling Equipment Amendments	<0.1	<0.1
Off-Road Zero-Emission Targeted Manufacturer Rule	NYQ	NYQ
Clean Off-Road Fleet Recognition Program	NYQ	NYQ
Spark-Ignition Marine Engine Standards	<0.1	<0.1
Total Off-Road Equipment Reductions	0.4	0.1
Other		
Consumer Products Standards	-	NYQ
Zero-Emission Standard for Space and Water Heaters	NYQ	NYQ
Enhanced Regional Emission Analysis in State Implementation Plans	NYQ	NYQ
Pesticides: 1,3-Dichloropropene Health Risk Mitigation	-	NYQ
Total Other Reductions	NYQ	NYQ
Primarily-Federally and Internationally Regulated Sources – CARB Measures		
In-Use Locomotive Regulation	3.0	0.1
Future Measures for Aviation Emission Reductions	NYQ	NYQ
Total Primarily-Federally and Internationally Regulated Sources – CARB Measures Reductions	3.0	0.1
Aggregate Emissions Reductions	**5.0**	**0.4**

Numbers may not add up due to rounding.

As a part of the aggregate emission reduction commitment for the South Coast and Coachella Valley, CARB staff proposes to commit to emissions reductions specifically from on-road mobile sources. CARB continues to have an aggregate emission reduction commitment which is a sum of emissions reductions from on- and off-road mobile sources, consumer products, and other State-regulated sources as outlined above. The on-road mobile source commitment will provide the enforceability needed to support the use of MVEBs that factor in reductions from the on-road mobile source measures in the 2022 State SIP Strategy. The proposed on-road mobile source commitment, as shown in Table 13 for South Coast and Table 14 for the Coachella Valley, is a subset of emissions reductions from the aggregate emission reduction commitment and is not additive to the aggregate emission reduction commitment.

Table 13: South Coast Emissions Reduction from On-Road Mobile Source Measures

On-Road Mobile Source Reductions	2037 NOx (tpd)	2037 ROG (tpd)
South Coast	11.6	4.3

Table 14: Coachella Valley Emissions Reduction from On-Road Mobile Source Measures

On-Road Mobile Source Reductions	2037 NOx (tpd)	2037 ROG (tpd)
Coachella Valley	0.9	0.2

iii. 2022 State SIP Strategy and Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 (Title VI) provides that no person in the United States shall, on the basis of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.[17] As a recipient of federal funds, CARB must ensure it complies with Title VI and U.S. EPA's Title VI implementation regulations[18] in its relevant programs and policies. In developing the 2022 State SIP Strategy robust suite of control measures, staff engaged in a thorough public process that addresses the requirements of Title VI. CARB will continue to address the requirements of Title VI in implementation of the 2022 State SIP Strategy and related Act implementation activities. Written guidance from U.S. EPA is needed to provide additional detail on Title VI requirements and expectations and support for effective implementation efforts.

Many low-income and disadvantaged communities in nonattainment areas, and across the State, continue to experience disproportionately high levels of air pollution and the resulting detrimental impacts to their health from widespread pollution from a variety of activities, many longstanding. Research[19] shows large disparities in exposure to pollution between disadvantaged communities and other communities. There are disparities between white and non-white populations in California, with Black and Latino populations experiencing significantly greater air pollution impacts than white populations. Mobile source pollution exposures show some of the highest disparities.[20] Mobile sources are the largest sources of pollution exposure disparity for Black populations and disadvantaged community residents, when compared to the average population in California. Specifically, mobile sources accounted for 45 percent of exposure disparity for the Black population, and 37 percent of exposure disparity for people in disadvantaged communities. While significant progress has been made in reducing mobile and stationary source pollution in California through

[17] 42 U.S.C. section 2000d.
[18] 40 C.F.R. Part 7.
[19] Apte et al (2019). A Method to Prioritize Sources for Reducing High PM2.5 Exposures in Environmental Justice Communities in California. CARB Research Contract Number 17RD006
[20] Apte et al (2019). A Method to Prioritize Sources for Reducing High PM2.5 Exposures in Environmental Justice Communities in California. CARB Research Contract Number 17RD006

regulatory and other program activities, disparities in the location of pollution and cumulative exposures continue despite CARB's efforts to reduce pollution across the State.

Given the continuing disparate impacts of air pollution, CARB's policy and planning efforts and programs prioritize environmental justice, incorporating racial equity, and conducting meaningful community engagement to address the longstanding environmental and health inequities from elevated levels of toxic air contaminants, criteria pollutants, and secondary impacts of climate change. It is imperative to optimize California's control programs to maximize emissions reductions and provide targeted near-term benefits in those communities that continue to bear the brunt of poor air quality. Specific efforts include development of community air monitoring networks to learn about local exposures, development of a racial equity assessment lens to consider benefits and burdens of CARB programmatic work in the planning stages, continuously increasing and improving community engagement efforts, and implementation of AB 617 (C. Garcia, Chapter 136, Statutes of 2017) as described in more detail below. As noted above, while significant progress has been made to address air pollution statewide and in local communities, ensuring all Californians have access to healthy air quality is imperative.

In addition to these important efforts, the 2022 State SIP Strategy measures such as the Advanced Clean Fleets and In-Use Locomotive Regulations will reduce mobile source emissions from heavy-duty trucks and other sources around warehouses, railyards, and ports, as well as reducing other emissions, which in turn will reduce corresponding health risk in California's most impacted communities through the identified measures.

CARB prioritized public participation as an essential part of developing the measures included in the 2022 State SIP Strategy. CARB initiated the public process with a workshop in July 2021. After the workshop, CARB staff reached out to and met with community-based organizations who provided input on the potential control measures. CARB released the Draft Measures document which considered the input from the community-based organizations and comments during the first workshop. CARB staff held a second workshop in October 2021 and received input from stakeholders. CARB staff also participated in air district control measure workshops as part of their SIP development process. CARB staff released the Draft 2022 State SIP Strategy in January 2022, held a third workshop, and presented an informational update to the Board at the Board Meeting in February 2022. The input from numerous interested stakeholders and community-based organizations framed the control measures in the strategy such as the Zero-Emissions Trucks and Pesticide Measures. These workshops and Board updates provided forums in both English and Spanish and allowed special accommodations if requested for the proposed measures to be discussed in a public setting and provide additional opportunity for public feedback, input, and ideas. And finally, CARB released the Proposed 2022 State SIP Strategy and hosted our 4th workshop in August 2022, prior to the CARB Board adopting the 2022 State SIP Strategy in September 2022. The workshops were well attended by stakeholders including community-based organizations. CARB staff listened to stakeholders, evaluated their recommendations, and included some of these recommendations as measures that were appropriate for the 2022 State SIP Strategy.

Following the Board's approval of the 2022 State SIP Strategy, the public processes will continue as each measure within the strategy goes through its own public process to engage with impacted communities and stakeholders to fully develop the measures prior to being brought to the Board for consideration as a regulation or other program. As development and implementation of these measures progress, CARB staff will continue to identify and implement opportunities to mitigate air pollution associated racial inequities and meaningfully engage and partner with communities most impacted to address long standing disparities and challenges. CARB will also continue to partner with other authorities such as air districts, other State agencies, and the federal government to ensure emissions reduction are achieved.

In addition to SIP efforts and individual regulatory processes reducing air pollution statewide, AB 617 requires community-focused and community-driven action to reduce air pollution and improve public health in communities that experience disproportionate burdens from exposure to air pollutants in California. CARB implements AB 617 through its Community Air Protection Program. AB 617 has created new opportunities for CARB and the local air districts to understand community member concerns through active participation in envisioning, developing, and implementing actions to clean the air in their communities. The Community Air Protection Program was first implemented starting in 2018 and has since had 17 communities selected into the Program as of December 2022. CARB is now engaging in a process to provide greater opportunities and additional support for impacted communities across the State through the revision of the AB 617 Statewide Strategy – also referred to as the Program Blueprint. The revision of the Program Blueprint seeks to design more efficient approaches to maximize similar air quality benefits for more impacted communities. Moving forward, the AB 617 Community Air Protection Program and complementary environmental justice and racial equity work across CARB programs, policies and SIP planning efforts will continue to evolve and grow. These connected efforts, as well as interagency efforts, will provide additional pathways to address Title VI requirements and support achieving the goal where zip code or race does not predict air pollution exposures. CARB has reviewed U.S. EPA and U.S. DOJ resources for Title VI and environmental justice, and looks forward to written Title VI guidance from U.S. EPA to address CAA section 110(a)(2)(E) as we develop future clean air plans.

iv. District Control Program

Consistent with its regulatory authority, the District has adopted rules for reducing emissions from a broad scope of stationary and area sources. Further detail on the District's current control program is provided in Chapter 1, Chapter 4, and Appendix 4-A of the 2022 AQMP.

As a part of the 2022 AQMP, the District has committed to a number of new measures to reduce emissions from a broad scope of sources, including stationary and mobile. Chapter 4 and Appendix 4-A of the 2022 AQMP describe the District's measures. The District has committed to a list of new control measures that are either a revision to an existing District rule or a new rule applicable to a previously unregulated or under-regulated source category and will provide additional emission reductions necessary for attainment in the South Coast and Coachella Valley.

The District's stationary source measures target residential, commercial, and large equipment using traditional NOx controls, co-benefits from climate programs, incentives, limited strategic VOC measures, and others. The District is proposing a total of 48 new measures, 31 of which are for stationary sources (Table 15). These measures will reduce emissions from traditional combustion sources by replacing older, high-emitting equipment with new, lower- or zero-emitting equipment.

Table 15: South Coast NOx Emissions Reductions from District Stationary Source Measures

Residential Combustion Source Measures:		**2037 NOx**
R-CMB-01	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances - Residential Water Heating [NOx]	1.25
R-CMB-02	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances - Residential Space Heating [NOx]	1.17
R-CMB-03	Emissions Reductions from Residential Cooking Devices [NOx]	0.79
R-CMB-04	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances - Residential Other Combustion Sources [NOx]	3.09
Commercial Combustion Source Measures:		
C-CMB-01	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances - Commercial Water Heating [NOx]	0.25
C-CMB-02	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances - Commercial Space Heating [NOx]	0.21
C-CMB-03	Emission Reductions from Commercial Cooking Devices [NOx]	0.64
C-CMB-04	Emission Reductions from Small Internal Combustion Engines [NOx]	2.25
C-CMB-05	NOx Reductions from Small Miscellaneous Commercial Combustion Equipment (Non-Permitted) [NOx]	5.14
Large Combustion Source Measures:		
L-CMB-01	NOx Reductions from RECLAIM Facilities [NOx]	0.31
L-CMB-02	Reductions from Boilers and Process Heaters (Permitted) [NOx]	0.45
L-CMB-03	NOx Emission Reductions from Permitted Non-Emergency Internal Combustion Engines [NOx]	0.34
L-CMB-04	Emission Reductions from Emergency Standby Engines (Permitted) [NOx, VOCs]	2.04
L-CMB-05	NOx Emission Reductions from Large Turbines [NOx]	0.07
L-CMB-06	NOx Emission Reductions from Electricity Generating Facilities [NOx]	0.91
L-CMB-07	Emission Reductions from Petroleum Refineries [NOx]	0.89
L-CMB-08	NOx Emission Reductions from Combustion Equipment at Landfills and Publicly Owned Treatment Works [NOx]	0.33
L-CMB-09	NOx Reductions from Incinerators [NOx]	0.90
L-CMB-10	NOx Reductions from Miscellaneous Permitted Equipment [NOx]	1.01
Co-Benefits from Energy and Climate Change Programs Measures:		
ECC-01	Co-Benefits from Existing and Future Greenhouse Gas Programs, Policies, and Incentives [NOx]	TBD
ECC-02	Co-Benefits from Existing and Future Residential and Commercial Building Energy Efficiency Measures [NOx, VOCs]	TBD
ECC-03	Additional Enhancements in Reducing Existing Residential Building Energy Use [NOx, VOCs]	TBD
Stationary Source VOC Measures:		
FUG-01	Improved Leak Detection and Repair [VOCs]	0.6
FUG-02	Emission Reductions from Industrial Cooling Towers [VOCs]	TBD
CTS-01	Further Emission Reductions from Coatings, Solvents, Adhesives, and Lubricants [VOCs]	0.5
FLX-02	Stationary Source VOC Incentives [VOCs]	TBD
BIO-01	Assessing Emissions from Urban Vegetation [VOCs]	TBD
L-CMB-04[c]	Emission Reductions from Emergency Standby Engines (Permitted) [NOx, VOCs]	0.1
Stationary Source Other Measures:		
MCS-01	Application of All Feasible Measures [All Pollutants]	TBD
MCS-02	Wildfire Prevention [NOx, PM]	N/A
FLX-01	Improved Education and Public Outreach [All Pollutants]	N/A

The District is also proposing a number of mobile source measures using a variety of control technologies that are commercially available and/or technologically feasible to implement prior to the attainment year of 2037 (Table 16). The mobile source measures will achieve reductions by the acceleration of retrofits or replacements of existing vehicles or equipment, acceleration of vehicle turnover through voluntary vehicle retirement programs, and greater use of cleaner fuels in the near-term. The measures will encourage greater deployment of cleaner combustion and zero-emission vehicle and equipment technologies such as plug-in hybrids, battery-electric, and fuel cells to the maximum extent feasible as such technologies are commercialized and available.

Additionally, incentive-based measures will use established protocols such as Carl Moyer Program guidelines and report to the Governing Board periodically. More details on the District's measures can be found in Appendix IV-A of the 2022 AQMP.

Table 16: South Coast NOx Emissions Reductions from District Mobile Source Measures

Number	Title [Pollutant] Emission Reductions (tpd)	2037 NOx
Emission Growth Management Measures:		
EGM-01	Emission Reductions from New Development and Redevelopment [All Pollutants]	TBD
EGM-02	Emission Reductions from Projects Subject to General Conformity Requirements [All Pollutants]	TBD
EGM-03	Emission Reductions from Clean Construction Policy [All Pollutants]	TBD
Facility-Based Mobile Source Measures:		
MOB-01	Emission Reductions at Commercial Marine Ports [NOx, Sox, PM]	
MOB-02A	Emission Reductions at New Rail Yards and Intermodal Facilities [NOx, PM]	TBD
MOB-02B	Emission Reductions at Existing Rail Yards and Intermodal Facilities [NOx, PM]	TBD
MOB-03	Emission Reductions at Warehouse Distribution Centers [NOx]	TBD
MOB-04	Emission Reductions at Commercial Airports [All Pollutants]	TBD
On-Road and Off-Road Mobile Source Measures:		
MOB-05	Accelerated Retirement of Older Light-Duty and Medium-Duty Vehicles [VOCs, NOx, CO]	0.11
MOB-06	Accelerated Retirement of Older On-Road Heavy-Duty Vehicles [NOx, PM]	TBD
MOB-07	On-Road Mobile Source Emission Reduction Credit Generating Program [NOx, PM]	TBD
MOB-08	Small Off-Road Engine Equipment Exchange Program [VOCs, NOx, PM]	TBD
MOB-09	Further Emission Reductions from Passenger Locomotives [NOx, PM]	TBD
MOB-10	Off-Road Mobile Source Emission Reduction Credit Generation Program [NOx, PM]	TBD
Incentive-Based Measures		
MOB-11	Emission Reductions from Incentive Programs [NOx, PM]	6.69
MOB-12	Pacific Rim Initiative for Maritime Emission Reductions	TBD
Other Measures		
MOB-13	Fugitive VOC Emissions from Tanker Vessels [VOCs]	TBD
MOB-14	Rule 2202 – On-Road Motor Vehicle Mitigation Options [VOCs, NOx, CO]	TBD
MOB-15	Zero Emission Infrastructure for Mobile Sources [All Pollutants]	TBD

B. Reasonably Available Control Measures Demonstration

Section 172(c)(1) of the Act requires that nonattainment areas demonstrate the implementation of all Reasonably Available Control Measures (RACM) as expeditiously as possible, including reasonably available control technology (RACT). U.S. EPA has interpreted RACM as those emission control measures that are technologically and economically feasible and, when considered in the aggregate, would advance the attainment date by at least one year.

Attachment VI-A to Appendix VI-A of the 2022 AQMP includes the analyses of potential control measures for emission reduction opportunities, as well as economic and technological feasibility. The analyses concluded that the District's rules and regulations were in general equivalent to or more stringent than rules and regulations in other areas.

C. Modeled Results

Results of the modeled attainment demonstration are shown in Table 17 and Table 18. To demonstrate a more accurate estimate of the design values at the individual monitors, design values are calculated in the attainment demonstration based on the implementation of the control strategy. While the Crestline monitor was the site with the highest predicted baseline design value in the South Coast in 2037, after reducing NOx emissions to 60 tpd in 2037, all monitors were shown to meet the standard with Glendora, underlined in the chart below, predicted to have the highest design value at 70.3 ppb. Although the design values in Table 17 and Table 18 include additional significant figures, consistent with U.S. EPA guidance, the modeled design values are truncated to the significant figures of the standard. In the Coachella Valley, modeling in the 2022 AQMP showed that all monitors attain if NOx emissions are reduced to 70 tpd in the South Coast. Further information on the modeled attainment demonstration is included in Chapters 5 and 7, and Appendices V and VII of the 2022 AQMP.

Table 17: South Coast Modeled 8-hour Ozone Design Values Demonstrating Attainment

Station	2037 Baseline	2037 Controlled
Azusa	90.3	68.8
Banning	79.7	60.6
Crestline	93.4	67.0
Fontana	85.0	61.9
Glendora	93.3	70.3
La Habra	72.4	59.2
Los Angeles	73.5	63.4
Lake Elsinore	72.4	55.2
Mira Loma	84.0	63.8
Mission Viejo	74.8	61.9
Pasadena	81.8	64.6
Perris	76.0	57.7
Pico Rivera	74.2	60.4
Pomona	80.6	59.3
Redlands	89.2	65.3
Reseda	81.8	64.5
Rubidoux	83.7	63.6
San Bernardino	93.2	67.3
Santa Clarita	85.0	63.8
Temecula	69.3	59.7
Upland	80.6	68.1

Source: Reprint of Table 5.2 in the 2022 AQMP

Table 18: Coachella Valley Modeled 8-hour Ozone Design Values Demonstrating Attainment

Station	2037 Baseline	2037 Controlled
Palm Springs	75.3	61.3
Indio	75.5	66.4

Source: Reprint of Table 7.13 in the 2022 AQMP

VII. Additional Clean Air Act Requirements

In addition to the elements related to the emissions inventory and attainment demonstration, the Act also requires SIPs for Extreme ozone nonattainment areas to address the following elements.

- Provisions that demonstrate reasonable further progress (RFP);
- Transportation conformity emission budgets to ensure transportation projects are consistent with the SIP;
- Provisions for sufficient contingency measures for RFP and attainment; and
- A VMT growth offset demonstration.

A. Reasonable Further Progress Demonstration

The Act requires ozone attainment plans to provide for RFP. RFP is defined in section 171(1) of the Act as "…such annual incremental reductions in emissions of the relevant air pollutant as are required…for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date." This requirement to demonstrate steady progress in emission reductions between the baseline year and attainment date ensures that nonattainment areas will begin lowering air pollution in a timely manner and not delay implementation of control programs until immediately before the attainment deadline.

The RFP demonstrations were developed using CARB's California Emissions Projection Analysis Model (CEPAM), 2022 Emission Projections, Version 1.01 (see Appendix A for more information on the planning emissions inventory), with a 2017 baseline year. Per the Implementation Rule, the RFP baseline year should be the most recent calendar year, at the time of designations, for which a complete triennial inventory was required to be submitted to U.S. EPA – for the 70 ppb ozone standard, this year is 2017. The 2022 AQMP includes an RFP demonstration, but in order to demonstrate consistency between the RFP demonstration and the MVEB, a line-item adjustment is needed in the RFP demonstration to account for the differences in the on-road mobile source emissions projections in the CEPAM inventory and the total of the MVEBs which are individually rounded up to the nearest tenth of a ton per day (see Appendix VI-C and page 7-34 in the 2022 AQMP for more information on the MVEBs).

The RFP demonstrations in Table 19 and Table 20 demonstrate that ROG and NOx emission reductions from adopted measures in the current control program in the South Coast and Coachella Valley meet the RFP targets in the 2023, 2026, 2029, 2032, and 2035 milestone years and the 2037 attainment year for the 70 ppb ozone standard.

Table 19: South Coast 70 ppb 8-hour ozone RFP demonstration
(tpd, summer planning inventory, CEPAM 2022 version 1.01)

Year	2017	2023	2026	2029	2032	2035	2037
ROG emissions*	412.65	377.39	364.36	351.90	343.92	339.15	337.67
MVEB Rounding Margin		0.11	0.33	0.22	0.89	0.48	0.43
Baseline ROG + Rounding Margin		377.50	364.69	352.12	344.82	339.63	338.09
Required % change since 2017		18.0%	27.0%	36.0%	45.0%	54.0%	60.0%
Target ROG Level		338.37	301.23	264.09	226.96	189.82	165.06
Shortfall (-)/Surplus (+) in ROG		-39.13	-63.45	-88.02	-117.86	-149.81	-173.04
Shortfall (-)/Surplus (+) in ROG, %		-9.5%	-15.4%	-21.3%	-28.6%	-36.3%	-41.9%
Year	**2017**	**2023**	**2026**	**2029**	**2032**	**2035**	**2037**
NOx emissions	348.30	225.46	195.06	181.24	172.96	165.60	160.69
MVEB Rounding Margin*		0.52	0.11	0.07	0.00	0.31	0.00
Baseline NOx + Rounding Margin		225.97	195.17	181.31	172.96	165.91	160.69
Change in NOx since 2017		122.32	153.12	166.98	175.33	182.39	187.61
Change in NOx since 2017, %		35.1%	44.0%	47.9%	50.3%	52.4%	53.9%
NOx reductions since 2017 used for ROG substitution in this milestone year, %		9.5%	15.4%	21.3%	28.6%	36.3%	41.9%
NOx reductions since 2017 surplus after meeting ROG substitution needs in this milestone year, %		25.6%	28.6%	26.6%	21.8%	16.1%	11.9%
RFP shortfall (-), if any		0%	0%	0%	0%	0%	0%
RFP Met?		YES	YES	YES	YES	YES	YES

* In order to be most conservative, 0.00 values are used when the corresponding MVEB was lower than comparable emissions in CEPAM due to updated adjustment factors used in the MVEB at the direction of U.S. EPA. Note: numbers may not add up due to rounding.

Table 20: Coachella Valley 70 ppb 8-hour ozone RFP demonstration
(tpd, summer planning inventory, CEPAM 2022 version 1.01)

Year	2017	2023	2026	2029	2032	2035	2037
ROG emissions	13.48	12.58	12.28	11.98	11.81	11.66	11.69
MVEB Rounding Margin		0.05	0.09	0.04	0.10	0.10	0.07
Baseline ROG + Rounding Margin		12.63	12.37	12.02	11.91	11.76	11.76
Required % change since 2017		18.0%	27.0%	36.0%	45.0%	54.0%	60.0%
Target ROG Level		11.05	9.84	8.63	7.41	6.20	5.39
Shortfall (-)/Surplus (+) in ROG		-1.58	-2.53	-3.40	-4.49	-5.56	-6.37
Shortfall (-)/Surplus (+) in ROG, %		-11.7%	-18.8%	-25.2%	-33.3%	-41.2%	-47.2%
Year	**2017**	**2023**	**2026**	**2029**	**2032**	**2035**	**2037**
NOx emissions	19.42	13.32	11.03	10.50	10.20	9.78	9.24
MVEB Rounding Margin*		0.00	0.02	0.00	0.00	0.00	0.00
Baseline NOx + Rounding Margin		13.32	11.06	10.50	10.20	9.78	9.24
Change in NOx since 2017		6.10	8.37	8.92	9.22	9.64	10.18
Change in NOx since 2017, %		31.4%	43.1%	45.9%	47.5%	49.6%	52.4%
NOx reductions since 2017 used for ROG substitution in this milestone year, %		11.7%	18.8%	25.2%	33.3%	41.2%	47.2%
NOx reductions since 2017 surplus after meeting ROG substitution needs in this milestone year, %		19.7%	24.3%	20.7%	14.2%	8.4%	5.2%
RFP shortfall (-), if any		0%	0%	0%	0%	0%	0%
RFP Met?		YES	YES	YES	YES	YES	YES

* In order to be most conservative, 0.00 values are used when the corresponding MVEB was lower than comparable emissions in CEPAM due to updated adjustment factors used in the MVEB at the direction of U.S. EPA. Note: numbers may not add up due to rounding.

B. Motor Vehicle Emissions Budgets

Under section 176(c) of the Act, transportation plans, programs, and projects that receive federal funding or approval must be fully consistent with the SIP before being approved by a Metropolitan Planning Organization (MPO). U.S. EPA's transportation conformity rule[21] details requirements for establishing MVEBs in SIPs for the purpose of ensuring the conformity of transportation plans and programs with the SIP.

The 2022 AQMP establishes on-road MVEBs for South Coast and Coachella Valley for each RFP milestone year, as well as for the attainment year for transportation conformity purposes

[21] Federal transportation conformity regulations are found in 40 CFR Part 51, subpart T – Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. of the Federal Transit Laws. Part 93, subpart A of this chapter was revised by U.S. EPA in the August 15, 1997 Federal Register.

for an Extreme classification under the 70 ppb ozone standard. The MVEBs will apply to all subsequent transportation conformity years, per the federal transportation conformity regulation. MVEBs for NOx and ROG were calculated using EMFAC2017 and reflect summer average emissions. The MVEBs established in the 2022 AQMP apply as a "ceiling" or limit on transportation emissions for the SCAG for the years in which they are defined and for all subsequent years until another year for which a different budget is specified, or until a SIP revision modifies the budget.

The MVEBs for the South Coast and additional information on the conformity process can be found in Appendix VI-C of the 2022 AQMP. The MVEBS for the Coachella Valley can be found in the 2022 AQMP, page 7-34.

C. Contingency Measures

Contingency measures are required by the Act to be implemented should an area fail to attain the air quality standard or make RFP by the required date. For attainment contingency, section 182(e) of the Act requires Extreme areas that rely on section 182(e)(5) "new technology" measures in their SIP to develop a contingency plan three years before attainment, or by 2034 for South Coast and Coachella Valley. This special provision in the Act recognizes that Extreme areas do not have the flexibility to withhold reductions for a contingency measure that would not be implemented until after the attainment year. That said, RFP contingency is still required for the South Coast and Coachella Valley.

U.S. EPA has interpreted the contingency requirement to represent one year's worth of RFP, which amounts to three percent of the reductions from measures that are already in place or that would take effect without further rulemaking action. Historically, U.S. EPA allowed contingency measure requirements to be met via excess emission reductions from ongoing implementation of adopted emission reduction programs, a method that CARB and local air districts have used for contingency measures and U.S. EPA has approved in the past. However, although CARB's current programs continue to achieve emissions reductions in future years in excess of what is needed for RFP and attainment, multiple court decisions over the last few years in the U.S. Courts of Appeals for the Ninth Circuit and District of Columbia Circuit have effectively disallowed this approach. As a result of the court decisions, U.S. EPA convened a nation-wide internal task force to develop guidance to provide clarity and direction for states in their development of contingency measures. CARB and the local districts have been awaiting this guidance for a year to ensure any contingency measures developed will meet requirements.

Given the courts' decisions over the last few years and under existing guidance, CARB and the District will need to implement contingency measures that, when triggered, would achieve one year's worth of emissions reductions, or at least the relevant portion equivalent to the contribution of sources primarily regulated at the State and local level, unless a reasoned rationale for achieving less emission reductions can be provided. At this time, CARB and the District are implementing the most stringent control programs and including a zero-emission component in most of our regulations, both those recently adopted and those that are in development. Beyond the wide array of sources CARB and the District have been

regulating over the last few decades, and especially considering those we are driving to zero-emission, there are few sources of emissions left for CARB or the District to implement additional controls upon under our authorities. The few source categories that do not have control measures are primarily federally and internationally regulated, categories which will account for approximately 56 percent of Statewide NOx emissions by 2037.[22] Considering the air quality challenges California and the District face, if an additional measure were available, CARB or the District would implement them to support expeditious attainment of the 70 ppb ozone standard rather than withhold it for contingency measure purposes. That said, CARB and the District continue to explore potential contingency measures while awaiting U.S. EPA's written guidance and fully intend to meet the contingency requirement as required by the Act. Further discussion on contingency measures for the South Coast and Coachella Valley can be found in Chapter 4 of the 2022 AQMP.

D. Vehicle Miles Traveled Offset Demonstration

The Act requires a demonstration identifying specific enforceable transportation control strategies and transportation control measures to offset any growth in VMT or number of vehicle trips within two years of designation for ozone nonattainment areas classified as Severe or above. CARB developed a VMT emissions offset demonstration for the 70 ppb ozone standard for South Coast and Coachella Valley which was adopted by the Board on June 25, 2020 and submitted to U.S. EPA for inclusion into the California SIP on July 27, 2020. The demonstration was developed in accordance with the August 2012 U.S. EPA guidance entitled "Implementing Act section 182(d)(1)(A): Transportation Control Measures and Transportation Control Strategies to Offset Growth in Emissions Due to Growth in Vehicle Miles Traveled."

At the time the VMT offset demonstrations were submitted, Coachella Valley was classified as a Severe ozone nonattainment area for the 70 ppb ozone standard with a 2032 attainment year. However, the District determined that the Coachella could not meet the Severe attainment date, and the 2022 AQMP includes a request that the Coachella Valley be reclassified as an Extreme area for the 70 ppb ozone standard. To meet the VMT offset demonstration requirement for the Coachella Valley as an Extreme area, CARB staff prepared a new VMT offset demonstration with an out year of 2037 that is included in Appendix D of this Staff Report.

[22] Source: CARB 2022 CEPAM v1.01; based on 2037 emissions totals.

VIII. Requirements Addressed Through Separate Submittals

In addition to the SIP requirements addressed in the 2022 AQMP and this Staff Report, there are other requirements under the 70 ppb 8-hour ozone standard that have been addressed through separate submittals in recent years, or will be in the future, as listed in Table 21 and described in more detail below.

Table 21: 70 ppb SIP Elements Addressed in Separate Submittals

SIP Element	Submittal Title	Submittal Date
Emissions Statement	District Rule 301	U.S. EPA approval, 10/31/2019
Nonattainment New Source Review	Certification of Nonattainment New Source Review and Clean Fuels for Boilers Compliance Demonstration for 2015 8-Hour Ozone Standard	8/3/2021
Reasonably Available Control Technology	Final Staff Report for 2015 8-Hour Ozone Standard Reasonably Available Control Technology (RACT) Demonstration	8/3/2020
Vehicle Inspection and Maintenance Program	Scheduled: Early 2023	TBD
Clean Fuels for Fleets Program	California Clean Fuels for Fleets Certification for the 70 ppb Ozone Standard (Adopted January 27, 2022	2/3/2022
Vehicle Miles Traveled Offset Demonstration	70 ppb Ozone SIP Submittal (Adopted June 25, 2020)	7/27/2020
Severe/Extreme Area Fee Program	Section 185 Penalty Fee Program is due August 3, 2028 [23]	TBD
Clean Fuels for Boilers Program	Certification of Nonattainment New Source Review and Clean Fuels for Boilers Compliance Demonstration for 2015 8-Hour Ozone Standard	8/3/2021

A. Emissions Statement

Section 182(a)(3)(B) of the Act requires ozone nonattainment areas to have an Emission Statement program that mandates stationary sources with emissions over 25 tons per year of NOx or ROG report and certify the accuracy of NOx and ROG emissions annually. District Rule 301 requires emissions reporting from all sources with total emissions greater than or equal to 4 tons per year of ROG or NOx. Thus, Rule 301 requires more stringent reporting of ROG and NOx stationary source emissions than is required under the Act. To meet requirements under the 70 ppb ozone standard for South Coast and the Coachella Valley, the District certified District Rule 301 on June 5, 2020, and CARB submitted it to U.S. EPA for

[23]FR Vol. 83, No. 234 63001 *https://www.govinfo.gov/content/pkg/FR-2018-12-06/pdf/2018-25424.pdf*

inclusion in the California SIP on August 3, 2020. U.S. EPA approved the certification of District Rule 301 into the SIP on August 29, 2022. Further discussion can be found on pages 6-11 of the 2022 AQMP and in the Emissions Statement Certification submitted to U.S. EPA.[24]

B. Nonattainment New Source Review

Section 182(a)(2)(C) of the Act requires that ozone nonattainment areas submit into the SIP New Source Review (NSR) rules or programs for permitting the construction and operation of new or modified major stationary sources. The District's existing NSR program implements these requirements for NSR and ensures that construction and operation of new, relocated, and modified stationary sources do not interfere with progress towards attainment of the 70 ppb ozone standard. To meet requirements under the 70 ppb ozone standard for South Coast and the Coachella Valley, on June 4, 2021, the District Board approved the "Certification of Nonattainment New Source Review and Clean Fuels for Boilers Compliance Demonstration for 2015 8-Hour Ozone Standard"[25] certifying that, in the South Coast and Coachella Valley, the District's existing NSR program is at least as stringent as the federal regulatory requirements for NSR. CARB submitted the certification of the District's NSR program to U.S. EPA on August 3, 2021. The NSR program is implemented through NSR rules (Regulation XIII), permit requirements (Regulation II), and the NSR requirements under the RECLAIM program (Regulation XX, Rules 2000, 2002, and 2005).

C. Reasonably Available Control Technology

Section 182(b)(2) of the Act requires implementation of RACT in ozone nonattainment areas classified as Moderate or above. To demonstrate this, these areas must develop and submit RACT analyses for stationary sources and applicable rules for which U.S. EPA has published Control Techniques Guidelines (CTG), in addition for major non-CTG stationary sources. To meet U.S. EPA requirements under the 70 ppb ozone standard for South Coast and the Coachella Valley, the District approved the *Final Staff Report for 2015 8-Hour Ozone Standard Reasonably Available Control Technology (RACT) Demonstration* (RACT demonstration)[26] on June 5, 2020. CARB submitted the RACT demonstration to U.S. EPA on August 3, 2020.

The RACT Demonstration determined that District rules and regulations met or exceeded federal RACT requirements for all applicable sources of ROG and NOx, with the exception of Rule 1115 – Motor Vehicle Assembly Line Coating Operations. Rule 1115 was found not as stringent as the U.S. EPA's CTG requirements for several coatings and products for facilities emitting greater than 15 pounds per day. In addition, the ROG emission limits in Rule 1115

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[24] *emissions-statement-certification.pdf (aqmd.gov)*

[25] *http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2021/2021-june4-033.pdf?sfvrsn=2.*

[26] *https://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*

for several coating types were less stringent than those of other agencies. To meet this RACT requirement, on March 4, 2022, the District Governing Board approved amendments to Rule 1115 which harmonize the rule with CTG requirements.

D. Vehicle Inspection and Maintenance Program

Sections 182(a)(2)(B), 182(b)(4), and 182(c)(3) of the Act require ozone nonattainment areas to have in place a vehicle inspection and maintenance (I/M) program to implement Basic and Enhanced I/M in applicable areas that is at least as stringent as the federal program. In California, the Bureau of Automotive Repair (BAR) develops and implements the I/M program. California's I/M program was first submitted and approved by U.S. EPA for inclusion in the California SIP in 1997, and subsequent revisions were approved in 2007 and 2010. To meet requirements under the 70 ppb ozone standard for all areas of the State including the South Coast and the Coachella Valley, CARB is working with BAR to conduct a performance standard evaluation in order to certify that California's existing program continues to meet requirements. This evaluation is under development and will be brought to the Board for consideration in early 2023.

E. Clean Fuels for Fleets Program

Sections 182(c)(4) and 246 of the Act require ozone nonattainment areas classified as Serious or above with a 1980 population of 250,000 or more to submit revisions to the SIP to implement a clean-fuel vehicle program for fleets. The Clean-Fuel Vehicle Program requires at least a specified percentage of all new covered fleet vehicles purchased by fleet operators to be clean-fuel vehicles and that they use clean alternative fuels when operating in the nonattainment area. Alternately, the state, and the nonattainment areas within the state that need to meet the Clean-Fuel Vehicle Program requirement, can opt out of the program by submitting a revision into the SIP for a program that will achieve long-term reductions in ozone-producing and toxic air emissions equal to those achievable by the U.S. EPA Program.

CARB's Low-Emission Vehicle (LEV) programs are implemented Statewide and far exceed the level of reduction that would be achieved through implementation of the U.S. EPA Program. As such, California ozone nonattainment areas classified as Serious and above have provided certification to this effect and opted out of the U.S. EPA Program since the first California SIP, 1994 California State Implementation Plan, was submitted to U.S. EPA on November 15, 1994, and approved on September 27, 1999[27]. California has continued to strengthen the requirements for light-duty passenger cars. The second-generation LEV II regulations were adopted in 1998 and the third-generation LEV III regulations in 2012 as part of the Advanced Clean Cars rulemaking package that also includes the State's ZEV regulation. The LEV III regulations include increasingly stringent emission standards for criteria pollutants and greenhouse gases for new passenger vehicles through the 2025 model year. In 2022, CARB

[27] 1 64 FR 46849, published on August 27, 1999 and effective on September 27, 1999, Approval and Promulgation of State Implementation Plans; California

adopted its Advanced Clean Cars II program that further strengthened the criteria pollutant and zero-emission vehicles standards for model years 2026 and beyond. CARB is working to obtain a waiver of federal preemption for these standards and submit them to U.S. EPA to add to California's SIP.

To meet requirements under the 70 ppb ozone standard for all areas of the State including the South Coast and the Coachella Valley, CARB developed the California Clean Fuels for Fleets Certification for the 70 ppb Ozone Standard which was adopted by the Board on January 27, 2022, and submitted to U.S. EPA on February 3, 2022.

F. Severe/Extreme Area Fee Program

Section 185 of the Act requires ozone nonattainment areas classified as Severe or above to have programs in place for the collection of fees from major stationary sources of NOx or ROG. This requirement must be submitted by August 3, 2028, and will be included in a future submittal.

G. Clean Fuels for Boilers Program

Section 182(e)(3) of the Act, Clean Fuels for Boilers, requires Extreme ozone nonattainment areas to use of clean fuels or advanced control technologies for electric utility and industrial and commercial boilers. To meet requirements under the 70 ppb ozone standard, on June 4, 2021, the District Board approved the "Certification of Nonattainment New Source Review and Clean Fuels for Boilers Compliance Demonstration for 2015 8-Hour Ozone Standard".[28] With the approval, the District Board certified that, in both the South Coast and Coachella Valley, each new, modified, and existing electric utility and industrial and commercial boiler emitting more than 25 tons per year of NOx must either burn as its primary fuel natural gas, methanol, or ethanol (or a comparably low polluting fuel) or use advance control technology (such as catalytic control technology or other comparably effective control methods) for reduction of NOx emissions. CARB submitted the certification to U.S. EPA on August 3, 2021.

IX. Environmental Impacts

A. Introduction

This chapter provides the basis for CARB's determination that no subsequent or supplemental environmental analysis is required for the proposed 2022 AQMP, with the CARB Staff Report ("project"). A brief explanation of this determination is provided in subsection C below.

[28] *http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2021/2021-june4-033.pdf?sfvrsn=2.*

CARB's regulatory program which involves the adoption, approval, amendment, or repeal of standards, rules, regulations, or plans for the protection and enhancement of the State's ambient air quality has been certified by the California Secretary for Natural Resources under Public Resources Code section 21080.5 of the California Environmental Quality Act (CEQA) (see California Code of Regulations (CCR), title 14, section 15251(d)). Public agencies with certified regulatory programs are exempt from certain CEQA requirements, including but not limited to, preparing environmental impact reports, negative declarations, and initial studies. CARB, as a lead agency, prepares a substitute environmental document (referred to as an "Environmental Analysis" or "EA") as part of the Staff Report to comply with CEQA (see 17 CCR §§ 60000-60008). This EA serves as a substitute document equivalent to an addendum to the prior 2022 State SIP Strategy EA to explain CARB's determination that no additional environmental analysis is required for this action.

B. Prior Environmental Analysis

The District prepared a Program Environmental Impact Report for the 2022 AQMP (PEIR).[29] The District's PEIR found that the 2022 AQMP could have the following impacts: beneficial impacts to air quality and greenhouse gases (long-term); less-than-significant or no impacts to air quality and greenhouse gases (operational-related), energy (short-term construction-related and liquid fuel demand), aesthetics, agriculture and forestry resources, biological resources, cultural and tribal cultural resources, geology and soils, land use and planning, mineral resources, population and housing, public services, recreation, transportation, wildfire; and potentially significant and unavoidable adverse impacts to air quality (short-term construction-related), energy (electricity, short-term natural gas, and hydrogen demand), hazards and hazardous materials, hydrology and water quality, noise (construction-related), and solid and hazardous waste. The District's 2022 AQMP PEIR is incorporated here by reference.

Further, when the 2022 State SIP Strategy was proposed, CARB prepared an environmental analysis (EA) under its certified regulatory program (17 CCR §§ 60000-60008) to comply with the requirements of the California Environmental Quality Act (CEQA; Public Resources Code section 21080.5). The EA, included as Appendix B to the Proposed 2022 State SIP Strategy entitled Final Environmental Analysis for the proposed 2022 State SIP Strategy for the State Implementation Plan, dated September 16, 2022,[30] determined the 2022 State SIP Strategy could result in the following short-term and long-term impacts: beneficial impacts to air quality (long-term operational-related) and greenhouse gases; less-than-significant impacts to energy demand, mineral resources, population and housing, public services, recreational services and wildfire; and potentially significant and unavoidable adverse impacts to aesthetics, agriculture and forest resources, air quality (short-term construction-related),

[29] The Final Program Environmental Impact Report for Proposed 2022 Air Quality Management Plan is available at *2022-aqmp-final-peir.pdf (aqmd.gov)*.

[30] The EA and associated documents are available at *https://ww2.arb.ca.gov/resources/documents/2022-state-strategy-state-implementation-plan-2022-state-sip-strategy*, and are incorporated here by reference.

biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use, noise, transportation/traffic, tribal cultural resources, and utilities and service systems.

C. Analysis

i. Legal Standards

When undertaking further planning actions for which an EIR or negative declaration (or equivalent substitute document) has previously been prepared, CARB looks to Public Resources Code section 21166 and CEQA Guidelines section 15162 for guidance on the requirements for subsequent or supplemental environmental review.

CEQA Guidelines section 15162 states:

> *(a) When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:*
>
> *(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;*
>
> *(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or*
>
> *(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:*
>
> *(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;*
>
> *(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;*
>
> *(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or*

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

If a subsequent or supplemental EIR or negative declaration is not required, the lead agency may document its decision and supporting evidence in an addendum (14 CCR § 15164 (e)). The addendum and lead agency's findings should include a brief explanation, supported by substantial evidence, of the decision not to prepare a subsequent or supplemental EIR or negative declaration (14 CCR § 15164(e)). An addendum need not be circulated for public review, but must be considered by the lead agency prior to making a decision on the project (14 CCR § 15164(c), (d)).

ii. Basis for Determination

As noted above, the District analyzed the potential environmental impacts from the 2022 AQMP in its PEIR. Similarly, CARB analyzed the potential environmental impacts from the 2022 State SIP Strategy in the EA developed for that planning effort. The proposed project here involves compiling these measures previously analyzed in the District's AQMP PEIR and CARB's 2022 State SIP Strategy EA, quantifying the emissions reductions associated with them, and submitting them to U.S. EPA for inclusion into the California SIP. This exercise does not involve any modifications to any of the measures. There is no possibility that CARB's quantification of these emissions reductions resulting from measures to which CARB has already committed to pursue may result in a significant adverse impact on the environment, nor any substantial evidence indicating this proposal could adversely affect air quality or any other environmental resource area.

CARB staff has determined that the proposed 2022 AQMP and associated CARB Staff Report do not involve any changes that result in any new significant adverse environmental impacts or a substantial increase in the severity of the significant adverse impacts previously disclosed in the 2022 State SIP Strategy EA or the 2022 AQMP PEIR. Further, there are no changes in circumstances or new information that would otherwise warrant any subsequent or supplemental environmental review. The 2022 State SIP Strategy EA and the 2022 AQMP PEIR adequately address the implementation of the proposed project, and no additional environmental analysis is required.

The basis for CARB's determination that none of the conditions requiring further environmental review are triggered by the proposed modifications is based on the following analysis.

(1) There are no substantial changes to the components of the proposed project that were previously analyzed in the 2022 SIP Strategy EA and the 2022 State SIP Strategy EA and 2022 AQMP PEIR which require major revisions involving new significant environmental effects or a substantial increase in the severity of previously identified effects.

The PEIR for the 2022 AQMP and Final EA for the 2022 State SIP Strategy fully address the implementation of the 2022 AQMP and CARB Staff Report, and no additional environmental analysis is required. CARB has determined that the proposed project does not involve any changes that result in any new significant adverse environmental impacts or a substantial increase in the severity of the significant adverse impacts previously disclosed in the Final EA for the 2022 State SIP Strategy or the District's PEIR. CARB does not propose to modify any of the commitments previously analyzed in those documents. The proposed project involves compiling these existing measures from the District's AQMP and CARB's 2022 State SIP Strategy, quantifying the emissions reductions associated with them, and submitting them to U.S. EPA for inclusion into the California SIP. As noted above, this exercise does not involve any modifications to any of the previously approved measures.

(2) There are no substantial changes with respect to the circumstances under which the proposed project is being undertaken which require major revisions to the previous CEQA analyses involving new significant environmental effects or a substantial increase in the severity of previously identified effects.

There are no changes in circumstances that would otherwise warrant any subsequent or supplemental environmental review. CARB has determined that the proposed project does not involve any changes in circumstances that result in any new significant adverse environmental impacts or a substantial increase in the severity of the significant adverse impacts previously disclosed in the Final EA for the 2022 State SIP Strategy or the District's PEIR. As noted above, CARB does not propose to modify any of the commitments previously analyzed in the Final EA for the 2022 State SIP Strategy or the District's PEIR. The proposed project involves compiling these existing measures from the District's AQMP and CARB's 2022 State SIP Strategy, quantifying the emissions reductions associated with them, and submitting them to U.S. EPA for inclusion into the California SIP. As noted above, this exercise does not involve any modifications to any of the previously approved measures.

(3) There is no new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous CEQA analyses were completed, that changes the conclusions of the environmental analyses with regard to impacts, mitigation measures, or alternatives;

There is no new information that would otherwise warrant any subsequent or supplemental environmental review. CARB has determined that the proposed project does not involve any new information that changes the conclusions of the Final EA for the 2022 State SIP Strategy or the District's PEIR. As noted above, CARB does not propose to modify any of the commitments previously analyzed in the Final EA for the 2022 State SIP Strategy or the District's Negative Declaration. The proposed project involves compiling these existing measures from the District's AQMP and CARB's 2022 State SIP Strategy, quantifying the emissions reductions associated with them, and submitting them to U.S. EPA for inclusion into the California SIP. As noted above, this exercise does not involve any modifications to any of the previously approved measures.

The District certified its PEIR in December 2022, and CARB certified the EA for the 2022 State SIP Strategy in September 2022. No supplemental or subsequent environmental analysis is required for the proposed project because, as described above, the proposed project does not result in any new environmental impacts or in a substantial increase in the severity of the impacts previously disclosed for the 2022 AQMP or the 2022 State SIP Strategy. Further, there are no changes in circumstances or new information that would otherwise warrant any additional environmental review.

Finally, while in an abundance of caution CARB has prepared an addendum-equivalent analysis here, CARB notes that this SIP action also likely does not constitute a CEQA "project" in the first instance. As to the District-proposed measures, CARB lacks jurisdiction to modify or remove these measures for any purpose other than compliance with Clean Air Act requirements. Therefore, CARB's review of those components is effectively ministerial. (*See San Diego Navy Broadway Complex Coalition v. City of San Diego* (2010) 185 Cal.App.4th 924, 934.) As to the CARB-derived measures, CARB has already committed to pursuing these measures as part of the 2022 State SIP Strategy. CARB's actions here do not modify those previous commitments made at the time CARB approved the 2022 State SIP Strategy; rather, it amounts to quantifying the anticipated reductions from those commitments, and reaffirming CARB's commitment to those reductions.

X. Staff Recommendation

CARB staff has reviewed the South Coast Air District 2022 AQMP and has concluded that the 2022 AQMP along with elements in the CARB staff report including the aggregate emissions reduction commitment for South Coast and Coachella Valley in 2037, the 2017 planning emissions inventories in Appendix A, the RFP demonstrations for South Coast and Coachella Valley using a 2017 baseline year and in-area emissions, and the Coachella Valley Extreme VMT offset demonstration in Appendix D, meets the requirements of the Act for the 70 ppb ozone standard. CARB staff recommends that the Board:

1. Adopt the State commitment to achieve aggregate emissions reductions of 95.7 tpd of NOx and 18.2 tpd of ROG in the South Coast by 2037, including a subset to come specifically from on-road mobile source measures of 11.6 tpd NOx and 4.3 tpd ROG and a subset to come from Federal Actions under the 182(e)(5) provision of the Act of 51.5 tpd NOx, as described in Section VI.A.ii of the CARB Staff Report;
2. Adopt the commitment to achieve aggregate emissions reductions of 5.2 tpd of NOx and 0.6 tpd of ROG in the Coachella Valley by 2037, including a subset to come specifically from on-road mobile source measures of 0.9 tpd NOx and 0.2 tpd ROG, as described in Section VI.A.ii of the CARB Staff Report;
3. Adopt the 2022 AQMP including the emission inventories, attainment demonstrations, RACM demonstrations, RFP demonstrations, a contingency measure discussion, and transportation conformity budgets; and the planning emissions inventories, RFP demonstrations, and Coachella Valley Extreme VMT offset demonstration as included in the CARB Staff Report as a revision to the California SIP; and
4. Direct the Executive Officer to submit the 2022 AQMP and the above elements of CARB Staff Report (the 2037 aggregate emissions reduction commitment for South Coast and Coachella Valley, the planning emissions inventories, the RFP demonstrations, and the Coachella Valley Extreme VMT offset demonstration) to U.S. EPA as a revision to the California SIP.