

Staff Report

CARB Review of the Western Mojave Desert 70 ppb 8-Hour Ozone Attainment Plan

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Executive Summary

This report presents the California Air Resources Board (CARB or Board) staff's assessment of the Western Mojave Desert 70 ppb [parts per billion] Attainment Plan. The Western Mojave Desert nonattainment area includes a portion of the San Bernardino County under the jurisdiction of the Mojave Desert Air Quality Management District (Mojave Desert AQMD), and the Antelope Valley portion of Los Angeles County under the jurisdiction of the Antelope Valley Air Quality Management District (Antelope Valley AQMD). This report assesses two documents: 1) the *Mojave Desert Federal 70 ppb Ozone Nonattainment Plan for the Western Mojave Desert Nonattainment Area* by the Mojave Desert AQMD, and 2) the *Antelope Valley Federal 70 ppb Ozone Nonattainment Plan for the Western Mojave Desert Nonattainment Area* by the Antelope Valley AQMD, collectively referred to as the Western Mojave Desert 70 ppb Attainment Plan (70 ppb Plan). CARB staff has concluded that the 70 ppb Plan meets the State Implementation Plan (SIP) planning requirements of the federal Clean Air Act (Act) including emission inventories, attainment demonstration, a reasonable further progress (RFP) demonstration and associated motor vehicle emissions budgets (MVEBs), and contingency measures. The Board is scheduled to consider the 70 ppb Plan on February 23, 2023. If adopted, CARB will submit the 70 ppb Plan and Section IV.A.ii and Appendix A of this 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 health research 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 the greater effects 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, 75 ppb standard in 2008, and 70 ppb standard in 2015. Effective August 3, 2018, U.S. EPA designated the Western Mojave Desert as a Severe nonattainment area for the 70 ppb 8-hour ozone standard¹, requiring attainment by August 3, 2032. CARB and the Districts 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 Western Mojave Desert.

The 70 ppb Plan addresses the 70 ppb 8-hour ozone standard, representing the next building block in planning efforts to meet increasingly health protective air quality standards. In recent years, the Western Mojave Desert has made significant progress in attaining the

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>

federal ozone standards. U.S. EPA determined on April 15, 2015, that the Western Mojave Desert attained the 1-hour ozone standard by its attainment date². Since their formations in 1993, the Districts’ ozone strategy has relied on concurrent reductions of oxides of nitrogen (NOx) and reactive organic gases (ROG) emissions from stationary and mobile 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.

Building on current CARB programs, staff developed the 2022 State Strategy for the State Implementation Plan (2022 State SIP Strategy) to support attainment of the 70 ppb 8-hour 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 8-hour ozone standard in the Western Mojave Desert. The measures in the 2022 State SIP Strategy will reduce emissions in the many low-income and underserved communities that continue to experience disproportionately high levels of air pollution and will support other CARB planning efforts. From the measures in the 2022 State SIP Strategy, this CARB Staff Report proposes an aggregate commitment of emissions reductions of 20.6 tons per day (tpd) of NOx and 1.0 tpd of ROG in the Western Mojave Desert by 2032, including a subset specifically from on-road mobile source measures of 0.8 tpd NOx and 0.2 tpd ROG for transportation conformity purposes as shown in Table 1.

Table 1 - Proposed CARB Emissions Reductions Commitment in Western Mojave Desert

Western Mojave Desert	2032 NOx (tpd)	2032 ROG (tpd)
Total Aggregate Emissions Reductions	20.6	1.0
Subset from On-Road Mobile Sources	0.8	0.2

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 will provide for attainment of the standard by the Western Mojave Desert attainment deadline of 2032. CARB staff has concluded that the 70 ppb Plan, together with the CARB Staff Report, meets the requirements of the Act for the 70 ppb 8-hour ozone standard. CARB staff recommends that the Board adopt the aggregate emissions reduction commitment, along with the 70 ppb Plan and corrected motor vehicle emissions budgets (MVEBs) table included in the CARB Staff Report as a revision to the California SIP.

² 80 FR 20166, posted April 15, 2015 and effective May 15, 2015, “Determination of Attainment of the 1-Hour Ozone National Ambient Air Quality Standard in the Southeast Desert Nonattainment Area in California”, <https://www.gpo.gov/fdsys/pkg/FR-2015-04-15/pdf/2015-08582.pdf>

I. 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 the human lungs. This pollutant forms in the atmosphere through complex reactions between NO_x 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 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 Western Mojave Desert as a Severe nonattainment area for the 70 ppb 8-hour standard with an August 3, 2033 attainment date³. To address the 70 ppb 8-hour ozone standard, the Mojave Desert AQMD developed and will consider adoption of the *Mojave Desert Federal 70 ppb Ozone Nonattainment Plan for the Western Mojave Desert Nonattainment Area* on January 23, 2023, and the Antelope Valley AQMD developed and will consider adoption of the *Antelope Valley Federal 70 ppb Ozone Nonattainment Plan for the Western Mojave Desert Nonattainment Area* on January 17, 2023. Due to the timing of the ozone season, the Western Mojave Desert nonattainment area must show attainment in 2032. The 70 ppb Plan also addresses Act requirements applicable to a Severe 8-hour ozone nonattainment area, consistent with U.S. EPA's 2018 Implementation Rule for the 70 ppb 8-hour ozone standard (Implementation Rule)⁴.

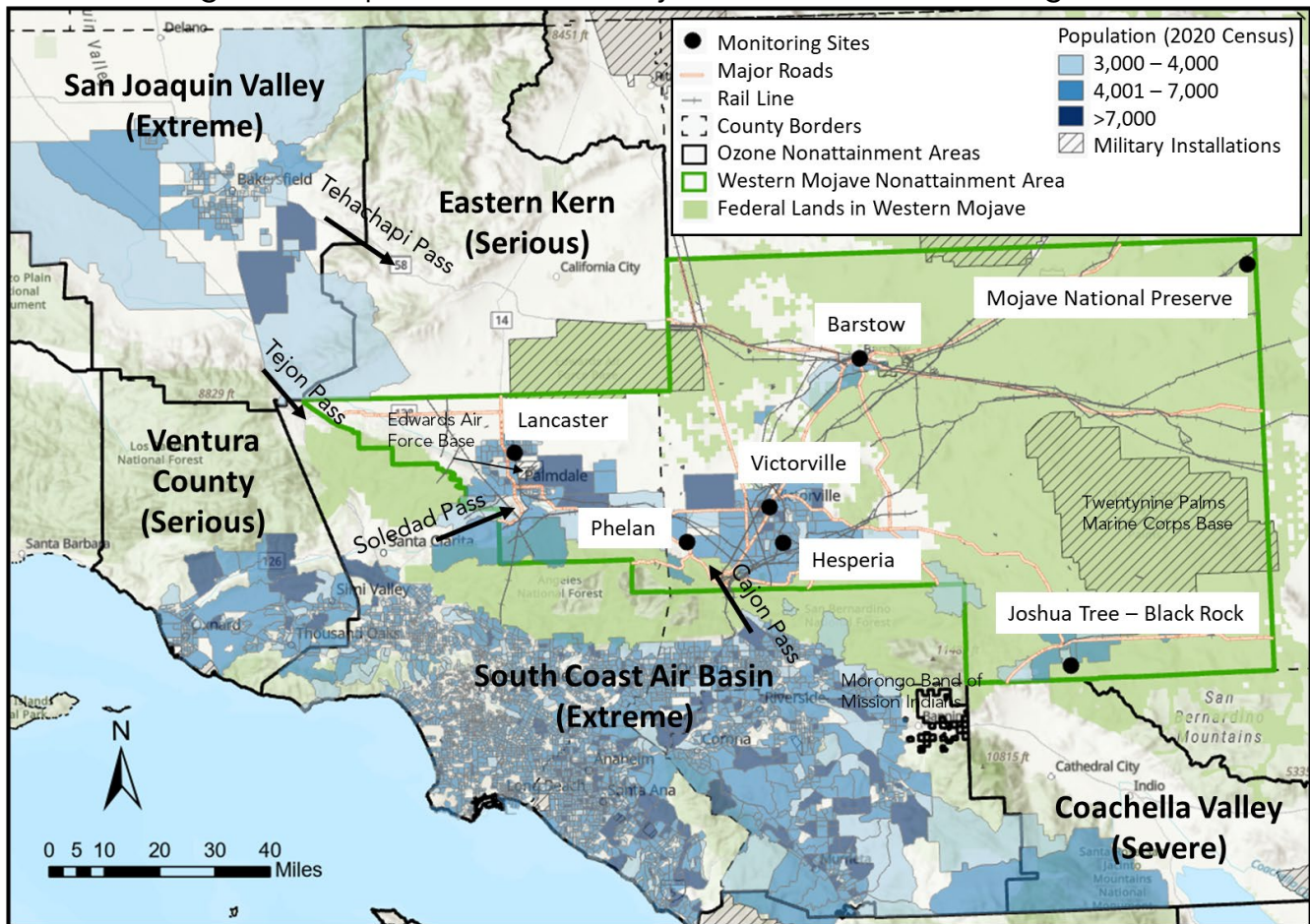
³ 83 FR 25776, Posted June 4, 2018 and effective August 3, 2018, "Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards", <https://www.govinfo.gov/content/pkg/FR-2018-06-04/pdf/2018-11838.pdf>

⁴ 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>

II. Nature of the Ozone Problem in the Western Mojave Desert

The Western Mojave Desert is the southwestern portion of the Mojave Desert Air Basin and is home to more than 900,000 people. In totality, the Mojave Desert Air Basin encompasses eastern Kern County, northeastern Los Angeles County, the northeastern majority of San Bernardino County, and the northeastern half of Riverside County. The Western Mojave Desert is downwind of the Los Angeles basin and, to a lesser extent, the San Joaquin Valley. Figure 1 shows a map of the Western Mojave Desert outlined in green and surrounding areas.

Figure 1 - Map of the Western Mojave Desert and Surrounding Areas



Source: 70 ppb Plan , Figure D-1: Area Map of Western Mojave and Surrounding Areas

The Mojave Desert AQMD portion of the Western Mojave Desert includes the southwestern desert portion of San Bernardino County and the segment of eastern Riverside County commonly known as the Palo Verde Valley. Local communities include Phelan, Hesperia, Victorville, Apple Valley, Barstow, Joshua Tree, and Twentynine Palms. The Mojave Desert AQMD portion of the nonattainment area covers more than 20,000 square miles. This region is characterized by hot, dry summers and cool winters, with little precipitation. The National

Training Center at Fort Irwin, the Marine Corps Air Ground Combat Center, and portions of Edwards Air Force Base and the China Lake Naval Air Weapons Station are in the Mojave Desert AQMD, but outside of the boundaries of the nonattainment area. Also within the jurisdiction of the District are the Mojave National Preserve and portions of Death Valley National Park and Joshua Tree National Park.

The primary roadways in the Mojave Desert AQMD are Interstate 15, Interstate 40, State Route 58, and U.S. Route 395. These highways carry a significant amount of heavy-duty truck traffic, and since the area is a growing bedroom community of Los Angeles, Interstate 15 carries a substantial amount of daily commute traffic into the South Coast Air Basin. The area also includes railroad tracks connecting the Ports of Los Angeles and Long Beach with the rest of the continental United States, and includes many miles of large-diameter high-pressure natural gas pipelines which transport the majority of the natural gas consumed within the State.

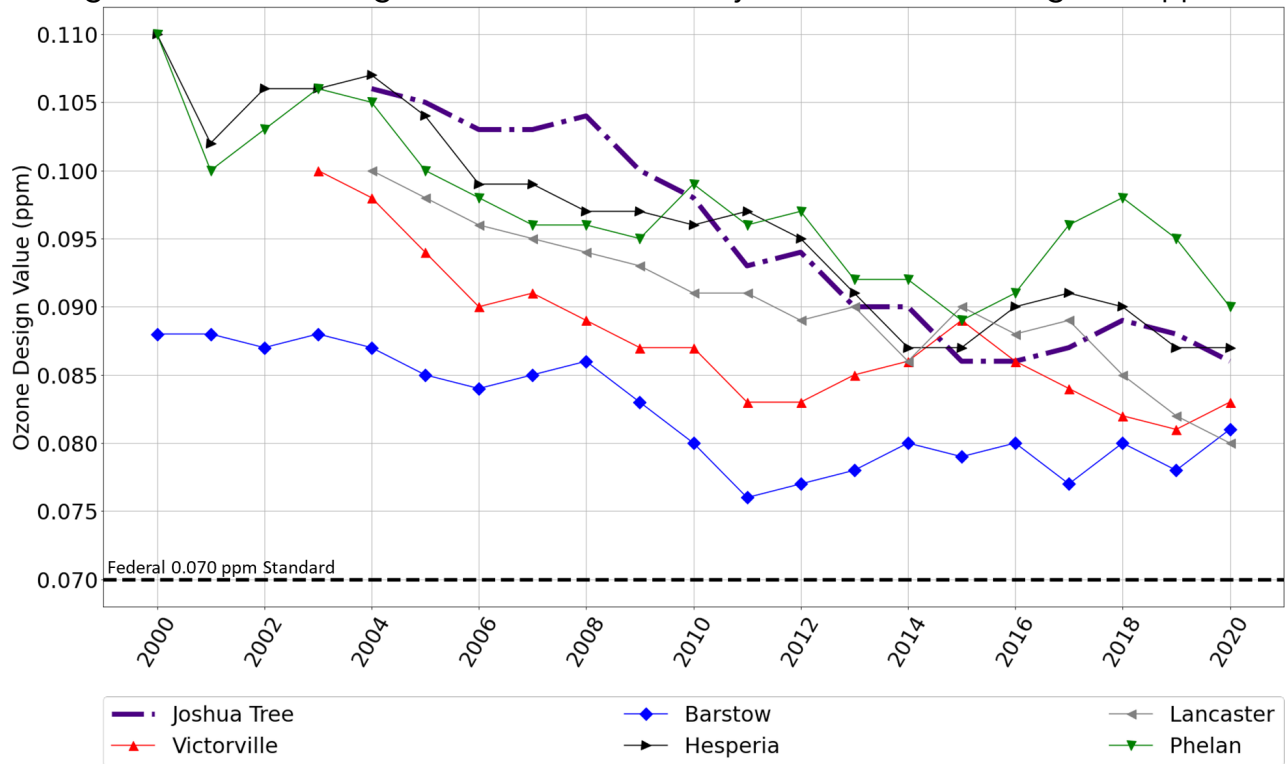
The Antelope Valley AQMD portion of the Western Mojave Desert is the entirety of the jurisdiction of the district and includes the northeastern desert portion of Los Angeles County. The Antelope Valley AQMD covers 1,200 square miles, and the population is centered within the local communities of Lancaster and Palmdale. The region is characterized by a wide, arid valley with very little precipitation and high summer temperatures. The primary roadways in the Antelope Valley are State Route 14 and State Route 18. These arterial highways carry a substantial amount of daily commute traffic from the region into the South Coast Air Basin. Although the Antelope Valley is primarily a bedroom community of Los Angeles, it has significant aerospace development and manufacturing within the U.S. Air Force Plant 42 military base. National companies such as Boeing, Lockheed Martin, and Northrop Grumman currently lease large facilities on the base. Edwards Air Force Base is also a major employer in the area.

Elevated ozone levels occur in the Western Mojave Desert from late May through early October when high temperatures and stable atmospheric conditions favor ozone formation. Earlier months of the season, May and June, can see more ozone intrusion from the upper troposphere and lower stratosphere, and long-range transport of ozone into the area. Ozone generally reaches peak levels by late afternoon and, along with ozone precursors, is often transported inland by the prevailing winds from the South Coast Air Basin, and to a lesser extent from the San Joaquin Valley Air Basin. As a result, the southwestern areas of San Bernardino County that are closest to the South Coast Air Basin, such as Hesperia and Joshua Tree National Monument, have higher ozone levels and more days exceeding the ozone standard than the San Bernardino County's desert areas, such as Barstow and Blythe.

Over the last 20 years, ozone levels in the Western Mojave Desert have decreased. Design values are used to demonstrate an area's ozone compliance status in relation to the standard. The design value at each monitoring site is the 4th highest monitored 8-hour ozone value averaged over three years. Figure 2 shows the design value concentrations at each monitoring site in Western Mojave Desert from 2000 to 2020. During this time period, the number of exceedance days in Western Mojave Desert declined by 26 percent, and ozone

levels have declined by over 18 percent at the Phelan monitor, the current high site, from 110 ppb to 90 ppb. The Mojave Desert AQMD stations that are closest to the South Coast Air Basin (such as Phelan) have shown the highest historical ozone concentrations and continue to have a design value above the standard. The more distant stations such as Barstow show lower ozone concentrations. The Antelope Valley has also experienced a reduction in maximum 8-hour ozone concentrations at its single monitoring station in the city of Lancaster.

Figure 2 - Ozone Design Values at Western Mojave Desert Monitoring Sites (ppm)



Source: 70 ppb Plan, Figure D-18: Ozone Design Values at Western Mojave Monitoring Sites

III. 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 amounts 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 evaluating attainment and what sources may need to be targeted through control measures. The planning 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 Western Mojave Desert.

The attainment demonstration in the 70 ppb Plan uses a 2018 base year inventory; the inventory uses 2018 emissions and activity levels. The inventory for future years (post-2018) is forecasted from the 2018 base year using socioeconomic/demographic growth profiles and adopted control rule profiles. For years pre-2018, the inventory for area source categories (with the exceptions that follow) is back-casted based on growth and control profiles—special cases exist for stationary point sources, pesticides, and prescribed burn categories where historical reported emission estimates are used for the pre-2018 period. The inventories reflect District rules submitted through January 2022.

On-road motor vehicle emissions 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) in September 2020. Off-road mobile source emissions were generated using CARB’s OFFROAD model. Both 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 for the RFP demonstration.⁵ Specifically, the baseline year emissions inventory should be the emissions inventory for the most recent calendar year, at the time of designations, of which a complete triennial inventory is required to be submitted to U.S. EPA.

Table 2 and Table 3 summarize the NOx and ROG emissions in the Western Mojave Desert for the 2017 RFP baseline year, the 2018 modeling base year, the 2023, 2026, and 2029 milestone years, and the 2032 attainment year. Emissions of NOx are predicted to decline by 15 percent and ROG by 13 percent from 2017, with the largest reductions coming from on-road mobile sources.

Table 2 - Western Mojave Desert NOx Emissions
(tpd, summer planning inventory)

Source Category	2017	2018	2023	2026	2029	2032
Stationary and Area-wide	19.4	20.6	20.9	21.1	21.1	21.2
On-Road Motor Vehicles	21.1	19.3	11.7	7.4	6.2	5.7
Other Mobile Sources	23.8	26.2	26.8	27.1	28.0	28.1
TOTAL	64.4	66.1	59.4	55.5	55.3	55.0

Source: CARB 2022 CEPAM v1.01 with External Adjustment;
http://outapp.arb.ca.gov/cefs/2022ozsip/fcmasterdetail_sip2022.php
 Numbers may not add due to rounding

⁵ eCFR :: 40 CFR 51.1310 -- Requirements for reasonable further progress (RFP).

Table 3 - Western Mojave Desert ROG Emissions
(tpd, summer planning inventory)

Source Category	2017	2018	2023	2026	2029	2032
Stationary and Area-wide	23.0	23.5	23.6	23.6	23.8	24.0
On-Road Motor Vehicles	8.0	7.3	5.2	4.7	4.3	3.9
Other Mobile Sources	6.1	6.3	6.0	5.4	4.8	4.4
TOTAL	37.1	37.1	34.8	33.7	32.8	32.3

Source: CARB 2022 CEPAM v1.01 with External Adjustment;
http://outapp.arb.ca.gov/cefs/2022ozsip/fcmasterdetail_sip2022.php
 Numbers may not add due to rounding

Within these categories, locomotives, mineral processes, and heavy-duty diesel trucks contribute the largest share of NOx emissions in the Western Mojave Desert 2032 baseline emissions inventory. Stationary and area-wide sources are currently the largest contributors to the ROG inventory, with consumer products, petroleum marketing, and degreasing occupying significant portions of the Western Mojave Desert ROG inventory. Chapter 2 and Appendix B of the 70 ppb Plan presents a summary of the data sources, along with revisions and improvements made to the emission inventory.

IV. 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. In collaboration with the South Coast Air Quality Management District (South Coast AQMD), the Districts have included an attainment demonstration that provides for expeditious attainment of the 70 ppb 8-hour ozone standard. The attainment demonstration includes the benefits of CARB and District control programs that provide ongoing emission reductions. Continued implementation of these programs provides new emission reductions each year. The attainment demonstration also includes emissions reductions from new measures committed to as a part of the 2022 State SIP Strategy adopted by the Board in September 2022.

The Act requires the use of air quality modeling to relate ozone levels to emissions in a region and simulate future air quality based on changes in emissions. The Western Mojave Desert is a small portion of the greater Southern California modeling domain. The model used in the 70 ppb Plan covers the entire Southern California region and a portion of northern Mexico. The modeling effort was performed as a joint effort by the South Coast Air Quality Management District, in coordination with the air districts in the region.

The modeled attainment demonstration in the 70 ppb Plan was prepared using photochemical dispersion and meteorological modeling tools developed in response to

U.S. EPA modeling guidelines⁶, and recommendations from air quality modeling experts. The model uses emission inventories, with measurements of meteorology and air quality, to establish the relationship between emissions and air quality. The modeling is used to identify the benefits of controlling ozone precursors and the most expeditious attainment date.

The year 2018 was used as the modeling base (reference) year. The future year modeled was 2032, the year attainment must be demonstrated for a Severe ozone nonattainment area. The modeling base year design values were adjusted to remove fire impacted days. Because of regular ozone intrusion events occurring during the months of May and June, these months were also removed from the photochemical model analysis. The attainment demonstration modeling includes the benefits of CARB’s existing mobile source control program and the Districts’ regulations submitted through January 2022. The attainment demonstration further includes emissions reductions from new measures committed to as a part of the 2022 State SIP Strategy. These measures provide the necessary control strategy, demonstrating that the Western Mojave Desert nonattainment area will meet the 70 ppb 8-hour ozone standard by 2032. Table 4 summarizes the 2032 emissions modeled in the attainment demonstration, including emissions reductions from the CARB measures in the 2022 State SIP Strategy.

Table 4 - 2032 Modeled Western Mojave Desert NOx and ROG Emissions
(tpd, summer planning inventory)

2032 Emissions	NOx	ROG
Baseline Emissions Inventory	55.0	32.3
CARB Emissions Reductions Commitment	20.6	1.0
Attainment Emissions Inventory	34.4	31.3

Source: 2022 State SIP Strategy and CARB 2022 CEPAM v1.01 with External Adjustment;
http://outapp.arb.ca.gov/cefs/2022ozsip/fcmasterdetail_sip2022.php
 Numbers may not add up due to rounding

Further detail on the modeled attainment demonstration is provided in Chapter 4 of the 70 ppb Plan.

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. CARB staff prepared the

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

WOE, which is provided in Chapter 4 and Appendix D of the 70 ppb Plan. WOE analyses include assessment of trends in ozone air quality, ozone precursor emission trends, meteorology impacts on ozone air quality trends, and summary of corroborating analyses. With the inclusion of future emission reduction commitments from CARB and the South Coast AQMD, the removal of May and June months from the photochemical model, and with the adjusted design values after removal of fire impacted days, the WOE indicates that the Western Mojave Desert is on track to attain the 70 ppb 8-hour ozone standard by 2032. This is consistent with design value projections derived from the regional photochemical modeling assessment conducted by South Coast AQMD.

A. Control Strategy

The ongoing emission reductions from continued implementation of CARB and the Districts' current control programs, together with reductions from the measures described in the 2022 State SIP Strategy, provide the attainment control strategy for the 70 ppb Plan. 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 F of the 70 ppb Plan.

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 Western Mojave Desert based on the measures identified and quantified to date. Adoption of the 2022 State SIP Strategy and the measure schedule by the Board formed 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 takes action.

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 SIP measure from the 2022 State SIP Strategy shown in Table 5 below, 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. This 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, as well as 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 5 - 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
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*	CARB	2025	2023
Primarily-Federally and Internationally Regulated Sources – CARB Measures			
In-Use Locomotive Regulation	CARB	2023	2024
Future Measures for Aviation Emissions Reductions	CARB	2027	2029

* Proposed CARB finalization

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 Western Mojave Desert. 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 federal air quality standards, 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.

South Coast AQMD air quality modeling indicates that NOx emissions reductions are needed within the Western Mojave Desert by 2032 in order to provide for attainment. 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 6.

Table 6 – Reductions from Remaining 2016 State SIP Strategy Measures

Measure	Action	Implementation Begins	2032 NOx (tpd)	2032 ROG (tpd)
Advanced Clean Cars II	2022	2026	0.2	0.1
Transport Refrigeration Unit Part I	2022	2023-2024	<0.1	<0.1
Zero-Emission Forklift	2023	2026	<0.1	<0.1
Total			0.2	0.1

Numbers may not add up due to rounding.

Table 7 shows that, collectively, emissions reductions from CARB’s current control program, reductions from the remaining 2016 State SIP Strategy measures, 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 8-hour ozone standard in the Western Mojave Desert. The measures in Table 8 reflect CARB commitments for State actions and the estimated emissions reductions for Western Mojave Desert.

Table 7 – Western Mojave Desert NOx Emission Reductions from CARB Programs

CARB Programs in Western Mojave Desert	2032 NOx Emission Reductions (tpd)
Current Control Program ⁷	11.1
Proposed CARB Emissions Reductions Commitments	20.6
2016 State SIP Strategy Measures (Not yet in baseline inventory)	0.2
2022 State SIP Strategy Measures	20.3
Total Reductions	31.6

Numbers may not add up due to rounding.

⁷ Source: 2022 CEPAM v1.01; represents the current baseline emissions out to 100 nautical miles with adopted CARB and district measures

Table 8 – Western Mojave Desert Emissions Reductions from 2022 State SIP Strategy Measures

Proposed Measure	2022 NOx (tpd)	2022 ROG (tpd)
On-Road Heavy-Duty		
Advanced Clean Fleets Regulation	0.6	<0.1
Zero-Emissions Trucks Measure	0.6	<0.1
Total On-Road Heavy-Duty Reductions	1.2	0.1
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	0.2	<0.1
Transport Refrigeration Unit Regulation Part 2	0.4	<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	0.7	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
Total Other Reductions		
Primarily-Federally and Internationally Regulated Sources – CARB Measures		
In-Use Locomotive Regulation	18.3	0.7
Future Measures for Aviation Emission Reductions	NYQ	NYQ
Total Primarily-Federally and Internationally Regulated Sources – CARB Measures Reductions	18.3	0.7
Aggregate Emissions Reductions	20.3	1.0

Numbers may not add up due to rounding.

As a part of the aggregate emission reduction commitment for the Western Mojave Desert, CARB staff proposes to commit to emission reductions specifically from on-road mobile sources. CARB continues to have an aggregate emission reduction commitment which is the sum of emission 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 motor vehicle emissions budgets that factor in reductions from the on-road mobile source measures in the 2022 State SIP Strategy. The proposed on-road mobile source commitment is a subset of emissions

reductions from the aggregate emission reduction commitment and is not additive to the aggregate emission reduction commitment.

Table 9 – Emission Reductions from On-Road Mobile Source Measures

On-Road Mobile Source Reductions	2032 NOx (tpd)	2032 ROG (tpd)
Western Mojave Desert	0.8	0.2

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.⁸ As a recipient of federal funds, CARB must ensure it complies with Title VI and U.S. EPA’s Title VI implementation regulations⁹ in its relevant programs and policies. In developing the 2022 State SIP Strategy’s 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 longstanding and widespread activities. Research¹⁰ 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.¹¹ 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 the exposure disparity for the Black population, and 37 percent of the exposure disparity for people in disadvantaged communities. While significant progress has been made in reducing mobile and stationary source pollution in California through 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.

⁸ 42 U.S.C. section 2000d.

⁹ 40 C.F.R. Part 7.

¹⁰ 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

¹¹ 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

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 longstanding 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. Department of Justice 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.

iii. District Control Program

Consistent with their regulatory authority, the Districts have adopted rules for reducing emissions from a broad scope of stationary and area sources. Further detail on the Districts' current control programs are provided in Chapter 3 of the 70 ppb Plan.

As part of the 70 ppb Plan, the Districts have each committed to adopt a new stationary source control measure to reduce emissions from residential natural gas fired water heaters by setting the cleanest NO_x standard currently in effect for new residential water heaters in an Extreme area (represented by South Coast AQMD Rule 1121). The measures will be new rules applicable to a previously unregulated source category in Mojave Desert AQMD and Antelope Valley AQMD and will provide additional emission reductions of an estimated 0.06 tpd NO_x in 2032 beyond those in the attainment demonstration. Further detail on the commitments and new measures is provided in Chapter 3 of the 70 ppb Plan.

B. Reasonably Available Control Measures Demonstration

As specified in the Act, the SIP shall provide for the implementation of reasonably available control measures (RACM) as expeditiously as practicable to provide for attainment of the ozone standard. RACM must also include emission reductions from existing sources that may be obtained through the adoption, at a minimum, of reasonably available control technology (RACT). The U.S. EPA has interpreted RACM as those emission control measures that are technologically and economically feasible and when considered in aggregate, would advance the attainment date by at least one year. The 70 ppb Plan contains a RACM analysis which demonstrates that no new measures were identified in Western Mojave Desert that would advance attainment from 2032 to 2031 in light of the fact that the area is significantly impacted by pollutant transport from the South Coast Air Basin. Further details on the RACM analysis are provided in Chapter 3 and Appendix E of the 70 ppb Plan.

C. Modeled Results

Results of the attainment demonstration modeling are shown in Table 10. With all control measures, including those in the 2022 State SIP Strategy, the 2032 design values are predicted to be at or below the 70 ppb 8-hour ozone standard at all sites, with design values that range between 63.9 and 70.8 ppb in the 2032 attainment year. Although the design values in Table 10 include additional significant figures, consistent with U.S. EPA guidance, the modeled design values are truncated to the significant figures of the standard.

Further information on the modeled attainment demonstration is included in Chapter 4 and Appendices C and D of the 70 ppb Plan.

Table 10 – Modeled 8-hour Ozone Design Values Demonstrating Attainment

Site	5-year weighted 2018 Base Year Design Value (ppb)	2032 Baseline Design Value (ppb)	2032 Control Design Value (ppb)
Barstow	78.3	71.3	68.7
Phelan	87.0	75.8	70.8
Victorville	78.7	68.6	63.9
Hesperia	85.0	74.3	68.8
Joshua Tree	88.0	74.4	68.2
Lancaster	77.3	67.9	64.2

Source: 70 ppb Plan, Table 20: Base Year and Future Year Design Values

V. Additional Clean Air Act Requirements

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

- Provisions that demonstrate reasonable further progress (RFP);

- Motor vehicle emission budgets to ensure transportation projects conform to the SIP; and
- Provisions for sufficient contingency measures for RFP and attainment.

A. Reasonable Further Progress Demonstration

The Act and the Implementation Rule specify that each ozone nonattainment area must demonstrate ongoing emission reductions relative to the RFP 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 is required to be submitted to U.S. EPA – for the 70-ppb ozone standard, this year is 2017. Federal law requires a 3 percent per year reduction in ROG emissions from the baseline year, averaged over the first 6 years and then each subsequent 3-year period until the attainment year. Where both ROG and NO_x emissions have been shown to contribute to high ozone levels, the Act and relevant guidance allow NO_x emission reductions to augment ROG emission reductions in order to demonstrate RFP.

As demonstrated in the 70 ppb Plan, while emission reductions in ROG and NO_x occur at each of the milestone years of 2023, 2026, 2029, and the attainment year (2032), the cumulative reductions in ROG and NO_x emissions in the Western Mojave Desert do not meet the RFP targets in the milestone years or attainment year. However, section 182(c)(2)(B)(ii) of the Act allows an alternative for meeting RFP requirements in areas that cannot demonstrate emission reductions of 3 percent per year through the attainment year. As no other nonattainment area had previously completed an analysis pursuant to section 182(c)(2)(B)(ii) of the Act and no U.S. EPA guidance on this issue was available, CARB provided the Districts with recommendations for how to analyze “all measures that can feasibly be implemented in the area, in light of technological achievability” and “measures that are achieved in practice by sources in the same source category in nonattainment areas of the next higher classification.” The Districts used their RACM analysis as a base through which they concluded that a majority of the measures analyzed had zero or negligible emission reduction benefits specifically reviewing rules for Extreme nonattainment areas, the next higher classification. Further, they analyzed measures achieved in practice and applicable to sources in the Western Mojave Desert nonattainment area and identified a residential natural gas fired water heating rule (SCAQMD Rule 1121) which was also the measure with the greatest emissions reductions. As a part of the Plan, the Districts are including a commitment to adopt a natural gas-fired residential water heating rule to meet RFP requirements for the 70 ppb 8-hour ozone standard. Further detail on the RFP demonstration including the analysis pursuant to section 182(c)(2)(B)(ii) of the Act is provided in Chapter 3 of the 70 ppb Plan.

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 rule¹² details requirements for establishing motor vehicle emission budgets (MVEBs) in SIPs for the purpose of ensuring the conformity of transportation plans and programs with the SIP.

The 70 ppb Plan included on-road MVEBs for each RFP milestone year, as well as for the 2032 attainment year for transportation conformity purposes under a Severe 8-hour ozone classification. MVEBs for NO_x and ROG were calculated using EMFAC2017 and reflect summer average emissions and SCAG activity. That said, a typographical error was made during the development of the MVEBs in the MVEB table present within the 70 ppb Plan, *Table 18 – Transportation Conformity Budgets for the 2015 8-hour Ozone NAAQS*, resulting in the NO_x and ROG emissions reduction values from developing regulations being interchanged. Corrected MVEBs are provided in Appendix A of the CARB Staff Report.

Once U.S. EPA approves the MVEBs established in the 70 ppb Plan and in Appendix A of the CARB Staff Report, it will serve as the conformity emissions budgets for all future transportation conformity determinations in the Western Mojave Desert. Further details on the MVEBs are provided in Chapter 3 of the 70 ppb Plan and in Appendix A of the CARB Staff Report.

C. Contingency Measures

Contingency measures are required by the Act to be implemented should an area fail to make RFP or attain a standard by the required date. U.S. EPA has interpreted this requirement to represent one year's worth of RFP, which amounts to 3 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 the 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 local air districts will need to implement contingency measures that, when triggered, would

¹² 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 the EPA in the August 15, 1997 Federal Register.

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 is 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 has 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 to implement additional controls upon under its authorities. The few source categories that do not have control measures are primarily federally and internationally regulated, categories which will account for approximately 54 percent of Statewide NOx emissions by 2032.¹³ Considering the air quality challenges California and local air districts face, if an additional measure were available, CARB would implement this to support expeditious attainment of the standard rather than withhold it for contingency measure purposes.

That said, the Mojave Desert AQMD has an existing measure that has been included in past ozone SIPs and has included this measure in the 70 ppb Plan to also apply for the 70 ppb 8-hour ozone standard. The measure involves a commitment to request implementation of the Enhanced Inspection and Maintenance (Enhanced I&M) Program for the rest of the nonattainment area under the jurisdiction of Mojave Desert AQMD, should the need for a contingency measure be triggered. Participation in the Enhanced I&M Program does not require adoption of additional regulations. CARB and the Districts continue to explore additional 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 of contingency measures can be found in Chapter 3 of the 70 ppb Plan.

¹³ Source: CARB 2022 CEPAM v1.01; based on 2032 emissions totals.

VI. Requirements Addressed Through Separate Submittals

In addition to all of the SIP requirements that are addressed in the 70 ppb Plan, 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 11 and described in more detail below.

Table 11 – 70 ppb SIP Elements Addressed in Separate Submittals

SIP Element	Submittal Title	Submittal Date
Emissions Statement	MDAQMD 70 ppb Ozone Standard Implementation Evaluation: RACT SIP Analysis; Federal Negative Declarations; and Emission Statement Certification (Adopted October 28, 2019)	December 20, 2019
	AVAQMD 70 ppb Ozone Standard Implementation Evaluation: RACT SIP Analysis; Federal Negative Declarations; and Emission Statement Certification (Adopted July 21, 2020)	August 3, 2020
Nonattainment New Source Review	MDAQMD Regulation XIII - New Source review and Rule 1600- Prevention of Significant Deterioration	July 23, 2021
	AVAQMD Regulation XIII - New Source review; Rule XVII - prevention of Significant Deterioration; and Rule 1401 – New Source Review for Toxic Air Contaminants	August 3, 2021
Reasonably Available Control Technology	MDAQMD 70 ppb Ozone Standard Implementation Evaluation: RACT SIP Analysis; Federal Negative Declarations; and Emission Statement Certification (Adopted October 28, 2019)	December 20, 2019
	AVAQMD 70 ppb Ozone Standard Implementation Evaluation: RACT SIP Analysis; Federal Negative Declarations; and Emission Statement Certification (Adopted July 21, 2020)	August 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)	February 3, 2022
Vehicle Miles Traveled Offset Demonstration	70 ppb Ozone SIP Submittal (Adopted June 25, 2020)	July 27, 2020
Severe/Extreme Area Fee Program	Section 185 Penalty Fee Program is due August 3, 2028	TBD

A. Emissions Statement

Section 182(a)(3)(B) of the Act requires ozone nonattainment areas to submit into the SIP an Emissions Statement rule or program for stationary sources with potential to emit ROG

and/or NO_x emissions. The program must mandate stationary sources with emissions over 25 tons per year of NO_x or ROG report and certify the accuracy of NO_x and ROG emissions annually. Mojave Desert AQMD Rule 107, *Certification and Emission Statements*, and Antelope Valley AQMD Rule 107, *Certification of Submissions and Emission Statements*, address this requirement. To meet requirements under the 70 ppb 8-hour ozone standard, Mojave Desert AQMD adopted the *70 ppb Ozone Standard Implementation Evaluation: RACT SIP Analysis; Federal Negative Declarations; and Emission Statement Certification* which certified Rule 107 on October 28, 2019, and CARB submitted it to U.S. EPA for inclusion in the California SIP on December 20, 2019. Antelope Valley AQMD adopted the *70 ppb Ozone Standard Implementation Evaluation: RACT SIP Analysis; Federal Negative Declarations; and Emission Statement Certification* which certified Rule 107 on July 21, 2020, and CARB submitted it to U.S. EPA for inclusion in the California SIP on August 3, 2020. U.S. EPA approved the certification of the Districts' emissions statement programs into the SIP on July 29, 2022.¹⁴

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 rules or programs for permitting the construction and operation of new or modified major stationary sources. In Mojave Desert AQMD, Regulation XIII – *New Source Review*, Rule 1600 - *Prevention of Significant Deterioration*, and Rule 219 – *Equipment Not Requiring a Permit* address this requirement. In Antelope Valley AQMD, Regulation XIII - *New Source Review*, Regulation XVII - *Prevention of Significant Deterioration*, and Rule 219 – *Equipment Not Requiring a Permit*, address this requirement. To meet requirements under the 70 ppb 8-hour ozone standard, Mojave Desert AQMD amended Regulation XIII on March 22, 2021, and the amendments were submitted to U.S. EPA for inclusion in the California SIP on July 23, 2021. Antelope Valley AQMD amended Regulation XIII on July 20, 2021, and the amendments were submitted to U.S. EPA for inclusion in the California SIP on August 3, 2021.

C. Reasonably Available Control Technology

Section 182(b)(2) of the Act requires implementation of Reasonably Available Control Technology (RACT) in ozone nonattainment areas classified as Moderate or above. To demonstrate this, areas must develop and submit RACT analyses for stationary sources and applicable rules for which U.S. EPA has published Control Techniques Guidelines (CTG) and for major non-CTG stationary sources. Following U.S. EPA requirements, the Districts each

¹⁴ 87 FR 45657, published on July 29, 2022 and effective on August 29, 2022, Air Plan Approval; Arizona, California, Nevada; Emissions Statements Requirements <https://www.federalregister.gov/documents/2022/07/29/2022-16025/air-plan-approval-arizona-california-nevada-emissions-statements-requirements>

developed analyses titled *70 ppb Ozone Standard Implementation Evaluation: RACT SIP Analysis; Federal Negative Declarations; and Emission Statement Certification* for sources and rules under their respective jurisdictions. These analyses reviewed existing stationary source rules to determine if those rules meet RACT requirements under the 70 ppb 8-hour ozone standard. The *70 ppb Ozone Standard Implementation Evaluation: RACT SIP Analysis; Federal Negative Declarations; and Emission Statement Certification* was adopted by Mojave Desert AQMD on October 28, 2019, and CARB submitted to U.S. EPA for inclusion in the California SIP on December 20, 2019. Antelope Valley AQMD adopted the *70 ppb Ozone Standard Implementation Evaluation: RACT SIP Analysis; Federal Negative Declarations; and Emission Statement Certification* on July 21, 2020, which was submitted by CARB to U.S. EPA for inclusion in the California SIP on August 3, 2020. In the *70 ppb Ozone Standard Implementation Evaluation: RACT SIP Analysis; Federal Negative Declarations; and Emission Statement Certification*, Mojave Desert AQMD identified four rules to be amended: Rule 1114, *Wood Products Coating Operations*; Rule 1115, *Metal Parts and Products Coating Operations*; Rule 1117, *Graphic Arts and Paper, Film, Foil and Fabric Coatings*; and Rule 1118, *Aerospace Assembly, Rework and Component Manufacturing Operations*; and one new rule to be adopted, *Adhesive Applications*. Each of these rules were since amended or adopted on or before August 24, 2020. Antelope Valley AQMD identified in their analysis two rules that may require revision: Rule 1113, *Architectural Coatings*; and Rule 1124, *Aerospace Assembly, Rework and Component Manufacturing Operations*. Antelope Valley AQMD committed to amending Rules 1113 and 1124, and these revisions are still under development.

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 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 8-hour ozone standard, 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 the coming months.

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, the 1994 California State Implementation Plan, was submitted to U.S. EPA on November 15, 1994, and approved on September 27, 1999¹⁵. 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 zero-emission vehicle 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 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 8-hour ozone standard, 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. Vehicle Miles Traveled Offset Demonstration

Section 182(d)(1)(A) of the Act requires a demonstration identifying specific enforceable transportation control strategies and transportation control measures to offset any growth in vehicle miles traveled (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 8-hour ozone standard for Western Mojave Desert 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." U.S. EPA proposed approval into the

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

SIP of the VMT offset demonstration for the 70 ppb 8-hour ozone standard on December 20, 2022.¹⁶

G. Severe/Extreme Area Fee Program

Sections 185 and 182(b)(4) of the Act require ozone nonattainment areas classified as Severe or above to have programs in place for the collection of fees from major stationary sources of NO_x or ROG. For the 70 ppb 8-hour ozone standard, this requirement must be met by August 3, 2028, and will be included in a future submittal.

VII. 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 70 ppb Plan, with the CARB Staff Report ("project"). A brief explanation of this determination is provided in the Analysis subheading below.

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

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 CEQA (Public Resources Code section 21080.5). The EA, included as Appendix B to the Proposed 2022 State SIP Strategy entitled *Final Environmental Analysis*

¹⁶ 87 FR 77774, published on December 20, 2022, Approval of Air Quality Implementation Plans; Vehicle Miles Traveled Emissions Offset Demonstrations for the 2015 Ozone Standards; California <https://www.federalregister.gov/documents/2022/12/20/2022-27511/approval-of-air-quality-implementation-plans-vehicle-miles-traveled-emissions-offset-demonstrations>

for the proposed 2022 State Strategy for the State Implementation Plan, dated September 16, 2022,¹⁷ 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), 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:*

¹⁷ 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.

- (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

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 District measures for which the Districts will consider certifications of exemption, and measures previously analyzed in 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 70 ppb Plan and associated CARB Staff Report 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 2022 State SIP Strategy EA. 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 any forthcoming certification of exemption by the districts will fully 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 for which the Districts will consider certifications of exemption or that were previously analyzed in the 2022 SIP Strategy EA which require major revisions involving new significant environmental effects or a substantial increase in the severity of previously identified effects.

The potential forthcoming certifications of exemption by the Districts and the Final EA for the 2022 State SIP Strategy fully address the implementation of the 70 ppb Plan 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. CARB does not propose to modify any of the commitments previously analyzed in those documents. The proposed project involves compiling the existing measures from the Districts' 70 ppb Plan 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. 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. The proposed project involves compiling the existing measures from the Districts' 70 ppb Plan 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. 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. The proposed project involves compiling the existing measures from the Districts' 70 ppb Plan 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.

CARB certified the EA for the 2022 State SIP Strategy in September 2022, and the Districts will consider certifications of exemption for the 70 ppb Plan this month. 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 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.

VIII. Staff Recommendation

CARB staff has reviewed the 70 ppb Plan and has concluded that, along with the aggregate emissions reduction commitment and corrected MVEBs contained in the CARB Staff Report, it meets the requirements of the Act for the 70 ppb 8-hour ozone standard. If the Districts adopt the 70 ppb Plan as provided to CARB for consideration, CARB staff recommends that the Board:

1. Adopt the commitment to achieve aggregate emissions reductions of 20.6 tpd of NO_x and 1.0 tpd of ROG in the Western Mojave Desert by 2032, including a subset to come specifically from on-road mobile source measures of 0.8 tpd NO_x and 0.2 tpd ROG, as described in sections IV.A.ii of the CARB Staff Report;
2. Adopt the 70 ppb Plan including the emission inventories, attainment demonstration, RACM demonstration, RFP demonstration, contingency measures, and the corrected MVEBs as included in Appendix A of the CARB Staff Report, as a revision to the California SIP; and
3. Direct the Executive Officer to submit the 70 ppb Plan and the above elements of the CARB Staff Report (2032 aggregate emissions reduction commitment for the Western Mojave Desert, and the corrected MVEBs) to U.S. EPA as a revision to the California SIP.

Appendix A

Western Mojave Desert Ozone Nonattainment Area
Corrected MVEB Table (Table 18) in the 70 ppb Plan

Table 18 – Transportation Conformity Budgets for the 2015 8-hour Ozone NAAQS

Western Mojave Desert Totals (Tons/Day)	2023		2026		2029		2032	
	ROG	NOx	ROG	NOx	ROG	NOx	ROG	NOx
Vehicular Exhaust	5.23	11.90	4.70	11.53	4.27	11.49	3.94	11.84
Reductions from HD warranty, ICT, HDVIP/PSIP, ACT, and HD Omnibus Regulations ^a	0.00	0.24	0.00	4.20	0.01	5.34	0.02	6.22
Reductions from developing regulations using off-model adjustments ^b	-	-	-	-	-	-	0.18	0.76
Total ^c	5.23	11.66	4.69	7.33	4.26	6.15	3.74	4.86
Motor Vehicle Emission Budget^d	5.3	11.7	4.7	7.4	4.3	6.2	3.8	4.9

Source: EMFAC2017 v1.03

^a This reflects the adjustment factor for Heavy-Duty Vehicle Warranty Phase 1, ICT, HDVIP/PSIP, ACT, and HD Omnibus regulations.

^b This reflects the on-road commitments for ACII and ACF from the draft 2022 State SIP Strategy.

^c Values from EMFAC 2017 v1.03 may not add up due to rounding.

^d Motor vehicle emission budget is rounded up to the nearest tenth of a tpd.