

## **Staff Report**

# **CARB Review of the 2023 Eastern Kern Ozone Attainment Plan for the 75 ppb and 70 ppb 8-Hour Ozone Standards**

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## Table of Contents

Executive Summary.....	5
I. Background .....	7
II. Nature of the Ozone Problem in Eastern Kern .....	8
III. Emission Inventory.....	12
IV. Attainment Demonstration.....	13
Control Strategy .....	16
CARB Current Control Program.....	16
CARB Commitments.....	16
District Control Program .....	21
Reasonably Available Control Measures Demonstration .....	21
Modeled Results .....	22
V. Additional Clean Air Act Requirements .....	22
Reasonable Further Progress Demonstration .....	22
Motor Vehicle Emissions Budgets.....	24
Contingency Measures.....	24
Vehicle Miles Traveled Offset Demonstration.....	25
VI. Requirements Addressed Through Separate Submittals.....	26
Emissions Statement.....	26
Nonattainment New Source Review.....	27
Reasonably Available Control Technology.....	27
Vehicle Inspection and Maintenance Program.....	28
Clean Fuels for Fleets Program .....	28
Severe/Extreme Area Fee Program .....	29
VII. Environmental Impacts .....	29
VIII. Staff Recommendation .....	33



## Executive Summary

This report presents the California Air Resources Board (CARB or Board) staff's assessment of the 2023 Eastern Kern Ozone Attainment Plan (2023 Plan) by the Eastern Kern Air Pollution Control District (District) for the 75 and 70 parts per billion (ppb) 8-hour ozone standards (75 ppb standard and 70 ppb standard). Each standard shares many of the same elements and plan requirements. CARB staff has concluded that the 2023 Plan meets the State Implementation Plan (SIP) planning requirements of the federal Clean Air Act (Act) including attainment demonstration, emissions inventory, reasonable further progress (RFP), reasonably available control measures (RACM) analysis and transportation conformity demonstrations, vehicle-miles-traveled (VMT) offset and contingency measures for progress and attainment, as outlined in Table 1 below. The Board is scheduled to consider the 2023 Plan on June 22, 2023. If adopted, CARB will submit the 2023 Plan 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 the 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.

The Eastern Kern nonattainment area (Eastern Kern) is currently classified as Severe for the 75 ppb standard<sup>1</sup> and Serious for the 70 ppb standard<sup>2</sup>. Along with the 2023 Plan, the District also requests that CARB formally submit a request to U.S. EPA to classify Eastern Kern as Severe for the 70-ppb standard, requiring attainment by August 3, 2033. 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 Eastern Kern.

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<sup>1</sup> <https://www.federalregister.gov/documents/2018/07/05/2018-14444/air-plan-approval-california-eastern-kern-air-pollution-control-district-reclassification>

<sup>2</sup> <https://www.federalregister.gov/documents/2021/10/28/2021-23454/designation-of-areas-for-air-quality-planning-purposes-california-eastern-kern-sacramento-metro-and>

Table 1 – 75 and 70 ppb SIP Elements included in the 2023 Eastern Kern Ozone Attainment Plan

SIP Element	District Plan
Attainment Demonstration	X
SIP Commitments	X
Photochemical Modeling Analysis	X
Weight of Evidence (WOE) Analysis	X
Reasonable Available Control Measures (RACM) Analysis	X
Transportation Conformity	X
Emissions Inventories	X
Reasonable Further Progress (RFP) Demonstration	X
Contingency Measures	X
Vehicle-Miles-Traveled (VMT) Offset Demonstration	X

The 2023 Plan addresses the 8-hour ozone standards of both 75 ppb, promulgated in 2008, and 70 ppb, promulgated in 2015, representing the next building block in planning efforts to meet increasingly health-protective air quality standards. The District ozone strategy has relied on oxides of nitrogen (NOx) and reactive organic gases (ROG) emission reductions from stationary and mobile sources, as well as concurrent emission reductions in upwind areas from which ozone and ozone precursors are transported. Over the past two decades, ozone levels in Eastern Kern have shown significant improvement in response to reductions in emissions of NOx and ROG from current control programs. Most of these reductions come from on-road and off-road mobile source control strategies implemented statewide.

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. These programs will reduce NOx and ROG emissions from on-road mobile sources by 72 percent and 52 percent, respectively, in 2032 compared to 2018 levels.

CARB staff has reviewed the 2023 Plan and concludes that it meets all the requirements of the Act for 75 and 70 ppb standards for Severe areas. CARB staff recommends the Board adopt the 2023 Plan along with the aggregate emission reduction from CARB’s commitment for Eastern Kern, and direct the Executive Officer to submit the 2023 Plan and the Staff Report to U.S. EPA as a revision to the California SIP.

## I. Background

Ozone, a health-threatening 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 NOx and ROG directly emitted from vehicles, industrial plants, consumer products and many other sources. Ozone is a powerful oxidant – its chemical reactions 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 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 to exposure to ozone over longer time periods, resulting in the U.S. EPA establishing 8-hour ozone standards of 80 ppb in 1997, 75 ppb in 2008, and 70 ppb in 2015.

On March 12, 2012, U.S. EPA designated the Eastern portion of Kern County (Eastern Kern nonattainment area, or Eastern Kern) as nonattainment for the 75 ppb standard<sup>3</sup> with a Moderate classification. Per a request from the District and CARB, on July 5<sup>th</sup>, 2021, U.S. EPA classified Eastern Kern as Severe for the 75 ppb standard, requiring attainment by July 15, 2027<sup>4</sup>. On June 4, 2018, U.S. EPA designated Eastern Kern as nonattainment for the 70 ppb standard<sup>5</sup> with a Moderate classification. Per a request from the District and CARB, on November 29, 2021, U.S. EPA classified Eastern Kern as Serious for the 70 ppb standard<sup>6</sup>. Along with the 2023 Plan, the District also requests that CARB formally submit a request to U.S. EPA to classify Eastern Kern as Severe for the 70-ppb standard, requiring attainment by August 3, 2033.

To address the 75 and 70 ppb standards, on May 4, 2023, the District adopted the 2023 Plan. Due to the timing of the ozone season, the District must demonstrate that the Eastern Kern will attain the standard by 2026 for 75 ppb standard and 2032 for 70 ppb standard, respectively. The 2023 Plan also

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<sup>3</sup> <https://www.federalregister.gov/documents/2021/06/07/2021-11704/designation-of-areas-for-air-quality-planning-purposes-california-eastern-kern-ozone-nonattainment>

<sup>4</sup> <https://www.federalregister.gov/documents/2018/07/05/2018-14444/air-plan-approval-california-eastern-kern-air-pollution-control-district-reclassification>

<sup>5</sup> <https://www.federalregister.gov/documents/2018/06/04/2018-11838/additional-air-quality-designations-for-the-2015-ozone-national-ambient-air-quality-standards>

<sup>6</sup> <https://www.federalregister.gov/documents/2021/10/28/2021-23454/designation-of-areas-for-air-quality-planning-purposes-california-eastern-kern-sacramento-metro-and>

addresses Act requirements applicable to both standards for 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)<sup>7</sup>.

## II. Nature of the Ozone Problem in Eastern Kern

The Eastern Kern nonattainment area (Figure 1) includes a portion of the southern end of the Sierra Nevada at the Tulare County border on the north. Eastern Kern includes much of the Tehachapi Mountains, which form a geographic, watershed, habitat, and rain shadow divide separating the San Joaquin Valley to the northwest and the desert chaparral landscape of the Mojave Desert to the southeast. Eastern Kern is bounded on the east by San Bernardino County and to the south by the Antelope Valley in Los Angeles County.

Eastern Kern is sparsely populated with a few small cities around the intersections of state roads and interstate highways. Edwards Air Force Base is in the southeast corner of Eastern Kern. Eastern Kern is separated by several mountain ranges from populated valleys and coastal areas with other nonattainment areas to the west and south. Passes through surrounding mountain ranges serve as “transport corridors” for ozone to Eastern Kern. The Tehachapi crest line varies in height from approximately 4,000- 8,000 feet with a pass-through that runs Route 58 and a major freight rail corridor connecting the San Joaquin Valley and the Mojave Desert at a lower 2,000-3,000 feet in elevation. The Soledad Pass and Cajon Passes, west and east of the San Gabriel Mountains to the south of the District, connect the South Coast Air Basin with the Antelope Valley. Eastern Kern is influenced primarily by transport through the Tehachapi Pass corridor with some potential influence through Soledad Pass (Figure 2). Soledad Pass and Cajon Pass mainly influence air quality in the eastern Mojave Desert due to prevailing wind directions but can transport pollutants to the District’s southeast corner near the Edwards Air Force Base.

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<sup>7</sup> 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>

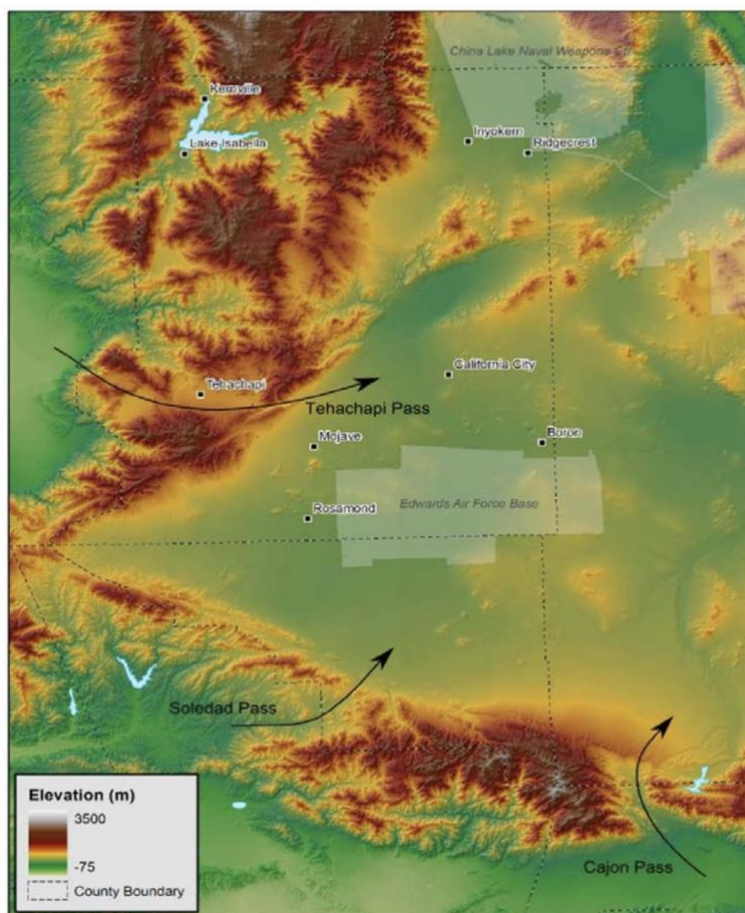


Figure 1: Eastern Kern Nonattainment Area



Meteorological data in and near Eastern Kern show relative humidity in Eastern Kern to be low in the summer, with an average humidity below ten percent during the hottest part of the day. Temperatures can be in excess of 95°F between the months of May and September, with almost no rainfall. This combination of dry, hot, clear days results in intense solar radiation that is instrumental in the formation of photochemical ozone. Elevated ozone levels occur during the late spring through early fall when high temperatures and stable atmospheric conditions favor ozone formation. These concurrent meteorological conditions are also favorable to ozone formation in upwind non-attainment areas. Ozone generally reaches peak levels by mid-afternoon, such that ozone and ozone precursors are often transported towards Eastern Kern via the passes on prevailing winds, causing exceedances in Eastern Kern, beyond what ozone is attributable to Eastern Kern emissions alone.

Figure 2: Ozone Transport Corridors

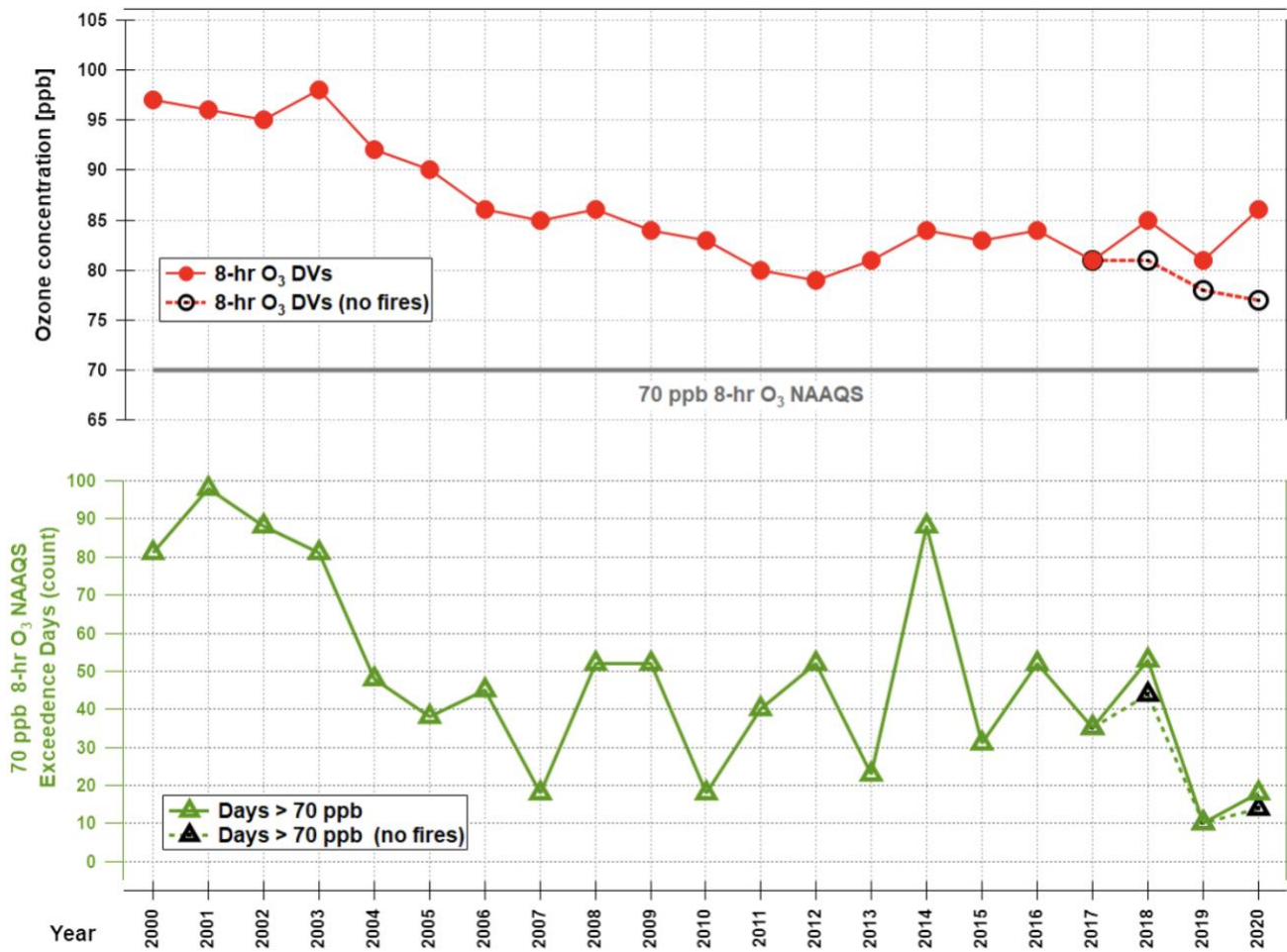


Much of Eastern Kern is open space and undeveloped, which limits ozone precursor emissions from existing sources in the nonattainment area. Prevailing winds through the Tehachapi Pass are suitable for supporting extensive wind farms in Eastern Kern. Other land uses include mineral mining, cement plants, aeronautic- and aerospace-related industries, utility-scale solar panel arrays, and residential development for employees at Edwards Air Force Base and other industries. Ranching and agriculture occur along the tributaries to the Kern River flowing from the Sierra Nevada into the San Joaquin Valley, but agricultural activities are limited in the desert portion of Eastern Kern.

Design values are used to demonstrate an area's ozone compliance status in relation to the standard. The design value is the 4<sup>th</sup> high, 8-hour ozone value averaged over three years.

Figure 3 shows the design value concentrations at the Mojave monitoring site in Eastern Kern from 2000 to 2020. Between 2000 and 2020, the design value decreased by 17 percent from 97 ppb to 78 ppb (wildfire days were removed consistent with U.S. EPA's exceptional events policy). The number of days in Eastern Kern that exceeded the 70 ppb standard declined from 81 days in 2000 to 15 days in 2020 (wildfire days removed), which is an 81 percent decrease.

Figure 3 - Ozone Design Values and 70-ppb 8-hour Ozone NAAQS exceedance days between 2000-2020 at Mojave-923 Poole St. Monitoring Sites



### III. Emission 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 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 Eastern Kern.

The 2023 Plan uses a 2017 baseline inventory of actual emissions and activity levels. The 2017 emissions are used to back-cast or forecast other inventories from the baseyear. The inventories reflect District rules submitted through December 2021. As discussed in Section II of the 2023 Plan, the area's attainment challenges occur in the summer months, when meteorological patterns and hot, dry days, encourage the transport of ozone and ozone precursors from upwind metropolitan areas. The 2023 Plan focuses on summer (May through October) average daily emissions inventories, with emissions presented as tons per day (tpd). The emission inventories in the 2023 Plan include emissions for the base year (2017), RFP milestone years (2023, 2026 and 2029), and attainment years for the 75 and 70 ppb standards (2026 and 2032).

On-road motor vehicle emissions were generated using CARB's mobile source emissions model, EMFAC2017. On-road motor vehicle activity data reflect projections provided based on Kern Council of Governments (COG) 2019 Federal State Transportation Improvement Program (FSTIP) amendment.<sup>8</sup> Off-road mobile source emissions were generated using CARB's OFFROAD model. Both models were developed for use in the 2023 Plan, and represent significant improvements over models used in prior SIP updates.

Table 2 and Table 3 summarize the NO<sub>x</sub> and ROG emissions in Eastern Kern. Within these categories, mineral process, heavy heavy duty diesel trucks (HHDDT), and trains contribute the largest portions of NO<sub>x</sub> emissions in the Eastern Kern 2017 baseline inventory.

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<sup>8</sup> <https://dot.ca.gov/-/media/dot-media/programs/financial-programming/documents/201812-ct-2019-fstip-a11y.pdf>



Table 2 – Eastern Kern NOx Emissions (tons per day (tpd), summer planning inventory)

Source Category	2017	2026	2032
Stationary and Area-wide	12.8	12.5	12.5
On-Road Motor Vehicles	1.3	1.4	1.0
Off-Road Vehicles and Equipment	4.1	3.9	3.9
<b>TOTAL</b>	<b>21.6</b>	<b>17.8</b>	<b>17.5</b>

Source: CARB CEPAM2019 v1.04 with approved external adjustment factors (2023 Plan Appendix A)  
 Numbers may not add due to rounding

Table 3 – Eastern Kern ROG Emissions (tpd, summer planning inventory)

Source Category	2017	2026	2032
Stationary and Area-wide	2.5	2.7	2.8
On-Road Motor Vehicles	3.9	0.7	0.6
Off-Road Vehicles and Equipment	4.8	3.6	3.4
<b>TOTAL</b>	<b>7.9</b>	<b>7.9</b>	<b>6.6</b>

Source: CARB CEPAM2019 v1.04 with approved external adjustment factors (2023 Plan Appendix A)  
 Numbers may not add due to rounding

Chapter III, Chapter V and Appendix A of the 2023 Plan present a summary of the data sources, along with revisions and improvements made to the emission inventory.

Federal New Source Review (NSR) rules require new and modified major stationary sources that increase emissions in amounts exceeding specified thresholds to provide emission reduction offsets to mitigate emission growth. Emission reduction offsets represent either on-site emission reductions or the use of banked emission reduction credits (ERC). ERCs are voluntary, surplus emission reductions, which are registered, or banked, with the District for future use as offsets.

Per U.S. EPA policy, ERCs banked before the plan’s emission inventory base year (2017 for this plan) must be explicitly treated as emissions in the air. Table 4 shows the ERCs registered with the District for future use as offsets. Further detail on ERCs is provided in Chapter X on Page 50 of the 2023 Plan.

Table 4 – Eastern Kern Emission Reduction Credits (ERC)  
 Balance as of December 2022 (tpd, summer planning inventory)

Pollutant	ERC Total
NOx	0.12
ROG	0.04

#### IV. Attainment Demonstration

SIPs must identify both the magnitude of reductions and the actions necessary to achieve those reductions as part of demonstrating the attainment of the standard. The District has prepared an attainment demonstration that provides for expeditious attainment of the 75 and 70 ppb standards.

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 Strategy for the State Implementation Plan (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 Eastern Kern nonattainment area is located in the Mojave Desert Air Basin, but is subject to pollutant transport from the San Joaquin Valley Air Basin and South Coast Air Basin. The photochemical modeling domain used in the 2023 Plan covers all of California, with a smaller domain of 4-kilometer grids that covers Central California and the entire Eastern Kern nonattainment area.<sup>9</sup>

The starting point for the attainment demonstration is the monitored base design value, which is used to determine compliance with the ozone standards. The design value for a specific monitor and year represents the three-year average of the annual 4th highest 8-hour ozone level. U.S. EPA recommends using an average of three design values to better account for the year-to-year variability in ozone levels due to meteorology. After consultation with U.S. EPA Region 9 staff, CARB decided to use 2018 as the reference year for modeling for the northern portion of the State. 2018 also represents the reference year for projecting design values into the future. Site-specific design values should be calculated for the three-year periods ending in 2018, 2019, and 2020, and then these three design values are averaged. However, 2020 was an atypical year with large societal changes in response to the COVID-19 pandemic. To remove the impact from 2020 observations, CARB utilized an alternative methodology for calculating the average design values by excluding the year 2020. In this method, the 8-hour ozone design values for the year 2020 was replaced by the two-year average of the 4th highest 8-hour ozone concentrations from 2018 and 2019.

In 2018 and 2020, the prevalence of forest fires during the summer ozone season heavily impacted air quality in Kern County, and high ozone concentrations were observed at the Mojave site during fire-impacted days. To remove the impact of forest fires, ozone design values were calculated by excluding days in 2018 and 2020 that were impacted by forest fires consistent with U.S. EPA's Exceptional Events policy. Details about fire impact days can be found in the Weight of Evidence analysis in Appendix L of the 2023 Plan.

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<sup>10</sup>, 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

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<sup>9</sup> 2023 Plan Appendix M, Page M-12

<sup>10</sup> 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](https://www.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf)

quality. The modeling is used to identify the benefits of controlling ozone precursors and the most expeditious attainment date.

The year 2018 was chosen as the modeling base (or reference) year. Wildfire events in 2018 and 2020 were excluded from the modeling reference year and design value calculations. The future years modeled were 2026 and 2032, the years attainment must be demonstrated for a Severe ozone nonattainment area for 75 ppb standard and 70 ppb standard, respectively. The attainment demonstration modeling includes the benefits of CARB’s existing mobile source control program and District regulations submitted through February 2020. The attainment demonstration further includes emissions reductions from new measures committed to as a part of the 2022 State SIP Strategy. These new measures provide the necessary control strategy, demonstrating that Eastern Kern will meet the 70 ppb standard by 2032. Table 5 summarizes the 2026 emissions modeled in the attainment demonstration, and Table 6 summarizes the 2032 emissions modeled in the attainment demonstration (including emissions reductions from the CARB and District measures). Further detail on the modeled attainment demonstration is provided in Chapter XVII and Appendix M of the 2023 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 WOE, which is provided in Chapter XVI and Appendix L of the 2023 Plan. WOE analyses include an assessment of trends in ozone air quality, ozone precursor emission trends, meteorology impacts on ozone air quality trends, and a summary of corroborating analyses.

Table 5 - 2026 Modeled Eastern Kern NOx and ROG Emissions  
(tpd, summer planning inventory)

2026 Emissions	NOx	ROG
Attainment Emissions Inventory	17.8	7.0

Source: 2023 Plan, Chapter XVII, Table 17  
Numbers may not add up due to rounding

Table 6 - 2032 Modeled Eastern Kern NOx and ROG Emissions  
(tpd, summer planning inventory)

2032 Emissions	NOx	ROG
Baseline Emissions Inventory	17.5	6.8
CARB Emissions Reductions Commitment	1.8	0.3
Attainment Emissions Inventory	15.7	6.5

Source: 2023 Plan, Chapter XVII, Table 17  
Numbers may not add up due to rounding

The WOE supports the conclusion that Eastern Kern will attain the 75 ppb and 70 ppb standards by 2026 and 2032, respectively. Local emissions of ozone precursors and the ozone design values have

both declined significantly for the past two decades. The upwind South Coast and San Joaquin Valley Air Basins have a significant impact on air quality in Eastern Kern. Further emission reductions in South Coast and San Joaquin Valley are expected in the near future and can be helpful in reducing the ozone level in the downwind Eastern Kern. Although the current air quality progress alone is not sufficient to attain the 70 ppb standard by 2026 (Serious attainment date), attainment can be achieved by 2032 (Severe nonattainment date) with the planned control strategy.

## 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, provide the attainment control strategy for the 2023 Plan. The following sections describe the ongoing and new CARB and District control measures that provide the emission reductions included in the attainment demonstration.

### 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 H of the 2023 Plan.

### 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 Eastern Kern based on the measures identified and quantified to date. Adoption of the 2022 State SIP Strategy and the measure schedule by the CARB Board forms the basis of the commitments for emission reductions by the attainment deadlines for each region that will be proposed for CARB Board consideration alongside the respective nonattainment area's SIP. CARB adopted the measure schedule in September 2022. The commitments consist of two components:

1. A commitment to bring an item to the CARB 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 CARB Board or take other actions within CARB's authority specified in the 2022 State SIP Strategy would become federally 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 CARB Board takes action.

### Commitment to Act on Measures

For each of the SIP measures shown in Table 7, CARB commits to address each measure as described in this document to benefit air quality across the state. 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 CARB Board that is either a proposed rule, or is a recommendation that the CARB Board direct staff to not pursue a rule covering that subject matter at that time.

Table 7: Measures and Schedule

Measure	Agency	Action	Implementation Begins
<b>On Road Heavy Duty</b>			
Advanced Clean Fleets Regulation	CARB	2023	2024
Zero-Emissions Trucks Measure	CARB	2028	2030
<b>On Road Light Duty</b>			
On-Road Motorcycle New Emissions Standards	CARB	2022	2025
Clean Miles Standard	CARB	2021	2023
<b>Off Road Equipment</b>			
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
<b>Other</b>			
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
<b>Primarily Federally and Internationally Regulated Sources CARB Measures</b>			
In-Use Locomotive Regulation	CARB	2023	2024
Future Measures for Aviation Emission Reductions	CARB	2027	2029

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 CARB Board or adopted by the CARB Board, may provide more or less than the initial emission reduction estimates. In addition, action by the CARB Board may include any action within its discretion.

**Commitment to Achieve Emission Reductions**

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.

Air quality modeling indicates that NOx emissions reductions are needed within Eastern Kern by 2032 in order to provide for attainment by the Severe area attainment date. 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 CARB 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  
(Numbers may not add up due to rounding)

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

Table 9 shows 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 Eastern Kern. The measures in Table 9 reflect CARB commitments for State actions and the estimated emissions reductions for Eastern Kern.

Table 9 – 2032 NOx Emission Reductions from CARB Programs  
(Numbers may not add up due to rounding)

CARB Programs in Eastern Kern	2032 NOx Emission Reductions (tpd)
Current Mobile Source Control Program <sup>11</sup>	3.1
CARB Emissions Reductions Commitments	1.8
2016 State SIP Strategy Measures (Not yet in baseline inventory)	<0.1
2022 State SIP Strategy Measures	1.8
<b>Total Reductions</b>	<b>4.9</b>

As a part of the aggregate emission reduction commitment for Eastern Kern, 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 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.

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<sup>11</sup> Source: 2022 CEPAM v1.01; represents the current baseline emissions out to 100 nautical miles with adopted CARB and district measures

Table 10: Eastern Kern Expected Emissions Reductions from the 2022 State SIP Strategy Measures  
(Numbers may not add up due to rounding)

Measure	2032 NOx (tpd)	2032 ROG (tpd)
<b>On Road Heavy Duty</b>		
Advanced Clean Fleets Regulation		<0.1
Zero-Emissions Trucks Measure		NYQ
<b>Total On-Road Heavy-Duty Reductions</b>	<b>0.1</b>	<b>&lt;0.1</b>
<b>On Road Light Duty</b>		
On-Road Motorcycle New Emissions Standards		<0.1
Clean Miles Standard		<0.1
<b>Total On-Road Light-Duty Reductions</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>
<b>Off Road Equipment</b>		
Tier 5 Off-Road Vehicles and Equipment		NYQ
Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation		<0.1
Transport Refrigeration Unit Regulation Part 2		<0.1
Cargo Handling Equipment Amendments		<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
<b>Total Off-Road Equipment Reductions</b>	<b>0.2</b>	<b>&lt;0.1</b>
<b>Other</b>		
Consumer Products Standards	-	NYQ
Zero-Emission Standard for Space and Water Heaters		NYQ
Enhanced Regional Emission Analysis in State Implementation Plans		NYQ
<b>Total Other</b>	<b>NYQ</b>	<b>NYQ</b>
<b>Primarily Federally and Internationally Regulated Sources – CARB Measures</b>		
In-Use Locomotive Regulation		<0.1
Future Measures for Aviation Emission Reductions		NYQ
<b>Total Primarily-Federally and Internationally Regulated Sources – CARB Measures Reductions</b>	<b>1.5</b>	<b>&lt;0.1</b>
<b>Aggregate Emissions Reductions</b>	<b>1.8</b>	<b>0.1</b>

Table 11 – Emissions Reduction from On-Road Mobile Source Measures

On Road Mobile Source Reductions	2032 NOx (tpd)	2032 ROG (tpd)
Eastern Kern	0.2	0.03

<sup>12</sup> Not yet quantified

## 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. The District's stationary source NOx and ROG prohibitory rules were fully addressed in the Reasonably Available Control Technology (RACT) evaluation adopted by the District Board on May 11, 2017 for the 75 ppb standard<sup>13</sup>, and on September 3<sup>rd</sup>, 2020 for the 70 ppb standard<sup>14</sup>.

The 2017 RACT SIP revealed deficiencies in the following three District rules designed to regulate NOx at major stationary sources: 425 (Cogeneration Gas Turbine Engines)<sup>15</sup>, 425.2 (Boilers, Steam Generators, and Process Heaters)<sup>16</sup>, and 425.3 (Portland Cement Kilns)<sup>17</sup>. The District amended all three rules in 2018 to fulfill RACT requirement for the 75 ppb standard as a Serious nonattainment area.

The 2020 RACT SIP analysis followed RACT requirements for major sources with a potential to emit 50 tons per year or greater of ROG or NOx, the threshold for the 70 ppb standard as a Serious nonattainment areas. The 2020 RACT SIP concluded that all rules were determined to meet RACT requirements.

The District also included an alternative RFP analysis in Chapter XV of the 2023 Plan that examines sources over 10 tpy according to requirements for Extreme nonattainment areas. The District concluded that almost all the rules in Eastern Kern for these source categories are comparable to those in place in South Coast and San Joaquin Valley nonattainment areas. The alternative RFP analysis also requires the District to examine that the rules still meet RACT requirements since the RACT SIPs were adopted. Details of this analysis can be found in the Further Reasonable Progress Demonstration section of this Staff Report and in Chapter XV of the 2023 Plan.

## Reasonably Available Control Measures Demonstration

As specified in the Act, the SIP shall provide for the implementation of RACM as expeditiously as practicable to provide for the 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.

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<sup>13</sup> <http://www.kernair.org/Documents/Announcements/Attainment/EK%20RACT%20SIP%20Adopted%205-11-17.pdf>

<sup>14</sup> [http://www.kernair.org/Documents/Announcements/Attainment/EK%202015%20RACT%20SIP%20\(70ppb\)%20Adopted%209-3-20.pdf](http://www.kernair.org/Documents/Announcements/Attainment/EK%202015%20RACT%20SIP%20(70ppb)%20Adopted%209-3-20.pdf); approved by EPA effective December 6, 2021 (86 Fed. Reg. 60,771, November 4, 2021)

<sup>15</sup> [http://www.kernair.org/Rule%20Book/4%20Prohibitions/425\\_Cogeneration\\_Gas\\_Turbine\\_Engines.pdf](http://www.kernair.org/Rule%20Book/4%20Prohibitions/425_Cogeneration_Gas_Turbine_Engines.pdf)

<sup>16</sup> [http://www.kernair.org/Rule%20Book/4%20Prohibitions/425-2\\_Boilers\\_Steam\\_Generators\\_&\\_Process\\_Heaters.pdf](http://www.kernair.org/Rule%20Book/4%20Prohibitions/425-2_Boilers_Steam_Generators_&_Process_Heaters.pdf)

<sup>17</sup> [http://www.kernair.org/Rule%20Book/4%20Prohibitions/425-3\\_Portland\\_Cement\\_Kilns\\_\(NOx\).pdf](http://www.kernair.org/Rule%20Book/4%20Prohibitions/425-3_Portland_Cement_Kilns_(NOx).pdf)

California’s long history of comprehensive and innovative emissions control has resulted in the most stringent mobile source control program in the nation. U.S. EPA has previously acknowledged the strength of the program through the waiver process, and in their approvals of CARB’s regulations and District plans. The District’s RACT analysis adopted in 2017 and 2020 evaluated the stationary source ozone precursor control measures and determine that they meet the federal RACT requirements. California’s Consumer Products Program, with the most stringent VOC requirements applicable to consumer products, also meets RACM. Further detail on the RACM analysis is provided in Chapter XIV of the 2023 Plan.

### Modeled Results

Results of the attainment demonstration modeling are shown in Table 12. In recent years, the prevalence of wildfires during the summer ozone season significantly impacted the air quality in Eastern Kern. High ozone concentrations were observed on days affected by forest fires, particularly in 2018 and 2020. When fire-impacted days are excluded from the baseline design value, the projected ozone design value is 74.3 ppb in 2026 and 69.5 in 2032. Therefore, the attainment demonstration modeling predicts that Eastern Kern will attain the 75 ppb ozone standard in 2026 and will attain the 70 ppb ozone standard in 2032. Further information on the modeled attainment demonstration is included in Chapter XVII and Appendices M of the 2023 Plan.

Table 12 - Modeled 8-hour Ozone Design Values Demonstrating Attainment

Site	2018 Base Year Design Value (ppb)	2026 Future Year Design Value (ppb)	2032 Future Year Design Value (ppb)
Mojave-923 Poole St.	82.7	74.3	69.5

### 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);
- Transportation conformity emission budgets to ensure transportation projects are consistent with the SIP;
- Provisions for sufficient contingency measures for RFP and attainment;
- A vehicle-miles-traveled growth offset demonstration.

### Reasonable Further Progress Demonstration

The Act and the Implementation Rule specify that each ozone nonattainment area must demonstrate ongoing emission reductions relative to the base year. Federal law requires a three percent per year reduction in ROG emissions. Where both ROG and NOx emissions have been shown to contribute to

high ozone levels, the Act allows NOx emission reductions to augment ROG emission reductions in order to demonstrate RFP.

The current SIP submittal addresses RFP for both the 75 ppb and 70 ppb standards. For the 75 ppb standard, the District is required to demonstrate RFP from the base year of 2011 to the remaining future milestone year of 2023, and the attainment year of 2026. For the 70 ppb standard, the District must demonstrate RFP in all milestone years until attainment, which are 2023, 2026, 2029, and the attainment year of 2032. The base year for the 70 ppb RFP demonstration is 2017.

The 2023 Plan demonstrates that it meets the three-percent RFP requirements for the 75 ppb plan. While for the 70 ppb standard, the 2023 Plan does not meet the three-percent RFP requirement. However, the Act §182(c)(2)(B)(ii) provides an alternative for meeting RFP requirements if the nonattainment area SIP includes “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 (Extreme).”

In the 2023 Plan, the District documented and demonstrated that its NOx and ROG rules are at least as stringent as the two Extreme nonattainment areas (San Joaquin Valley and South Coast). The District conducted this analysis for major stationary sources (>10 tpy for Extreme nonattainment areas), non-major point sources and area sources. The District found that almost all the rules that apply to these sources in Eastern Kern are comparable or more stringent to the rules in the extreme nonattainment areas. Two source category rules were identified (Graphic Arts and Residential Hot Water Heaters) in the Extreme districts that have slightly more restrictive ROG limits. However, amending these two rules would still not achieve RFP because the emissions reductions would be negligible.

The District’s current rules and regulations reflect technologies and methods that are far beyond any minimum required to control levels. District Rules 410 (Organic Solvents)<sup>18</sup>, 410.8 (Aerospace Coating Operations)<sup>19</sup>, and 432 (Polyester Resin Operations)<sup>20</sup> were identified as the only three rules that could be made more stringent if the District failed to attain the standard. All three rules were listed in a CARB-approved commitment letter as rules to be included in the contingency provisions of the attainment plan. In order to meet the RFP requirement for the 70 ppb standard, the District amended these three rules in 2022 and the combined ROG emission reduction is estimated to be 0.2 tpd.

Although RFP for the 70 ppb standard is achieved in 2029 and 2032, modeling and the attainment demonstration show that, the District will attain the 70 ppb standard by 2032. As detailed throughout the 2023 Plan and in this Staff Report, attainment will be achieved through a combination of mobile source regulations, the 2022 State SIP Strategy, reductions in transport emissions, and CARB’s

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<sup>18</sup> [http://www.kernair.org/Rule%20Book/4%20Prohibitions/410\\_Organic\\_Solvents.pdf](http://www.kernair.org/Rule%20Book/4%20Prohibitions/410_Organic_Solvents.pdf)

<sup>19</sup> [http://www.kernair.org/Rule%20Book/4%20Prohibitions/410-8\\_Aerospace\\_Assembly\\_And\\_Coating\\_Operations.pdf](http://www.kernair.org/Rule%20Book/4%20Prohibitions/410-8_Aerospace_Assembly_And_Coating_Operations.pdf)

<sup>20</sup> [http://www.kernair.org/Rule%20Book/4%20Prohibitions/432\\_Polyester\\_Resin\\_Operations.pdf](http://www.kernair.org/Rule%20Book/4%20Prohibitions/432_Polyester_Resin_Operations.pdf)

commitments for Eastern Kern. Further detail on the RFP demonstration is provided in Chapter XV of the 2023 Plan.

## 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<sup>21</sup> 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 2023 Plan establishes on-road MVEBs for Eastern Kern for the RFP milestone year and attainment year for transportation conformity purposes for the 75 ppb and 70 ppb ozone standards. The MVEBs will apply to all subsequent transportation conformity years, per the federal transportation conformity regulations. MVEBs for NO<sub>x</sub> and ROG were calculated using EMFAC2017 and reflect summer average emissions. The MVEBs also subtracted expected emission reductions from recently adopted and expected control measures that were included in the 2016 and 2022 State SIP Strategies for milestone years and attainment years. The MVEBs established in the 2023 Plan apply as a "ceiling" or limit on transportation emissions for the nonattainment area 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. Further detail on the MVEBs is provided in Section VI of the 2023 Plan.

## Contingency Measures

Contingency measures are required by the Clean Air Act to be implemented should an area fail to make RFP or attain the standard by the required date. U.S. EPA has interpreted this requirement to represent one year's worth of RFP, which amounts to three percent 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 the 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 9th Circuit and nationwide now disallow this approach.

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 achieve one year's

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<sup>21</sup> 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.



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 fewer 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 authority. The few source categories that do not have control measures are primarily -federally and internationally regulated categories which will account for approximately 49 percent of Statewide NOx emissions by 2026, and 54 percent by 2032.<sup>22</sup> 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 standards rather than withhold it for contingency measure purposes. CARB and California air districts are closely reviewing U.S. EPA's latest contingency guidance proposed on March 23, 2023.<sup>23</sup> CARB and the District continue to explore potential contingency measures while awaiting U.S. EPA's final written contingency guidance and fully intend to meet the contingency requirement as required by the Act.

As previously mentioned in the Reasonable Further Progress Demonstration section in the Staff Report, three of the Districts's current rules were identified as the only rules that could be made more stringent if the District failed to attain the standard. However, due to the projected RFP shortfall, the District amended all three rules in 2022 to meet the Act's requirements and therefore left without rules that contained contingency triggers and provisions. Additionally, if the District identified any rule, or combination of rules that could be amended to produce ozone reductions significant enough to achieve RFP, the amendment would have already occurred in order to meet RFP.

In an effort to satisfy Act §182(c)(9) and provide a contingency measure in this attainment plan, the District will commit to removing the small container exemption from Section IV.B. of District Rule 410.1A, Architectural Coating Controls. Removing this exemption from the rule will provide less than 0.1 tpd of ROG reductions but will satisfy the Act requirement of providing a contingency measure in the plan.

Further discussion of contingency measures can be found in Chapter XVIII of the 2023 Plan.

## 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

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<sup>22</sup> Source: CARB 2022 CEPAM v1.01; based on 2026 emissions totals.

<sup>23</sup> 88 Fed. Reg. 17,571, [https://www.epa.gov/system/files/documents/2023-03/Draft%20CM%20Guidance%2088%20FR%2017571\\_3-23-23.pdf](https://www.epa.gov/system/files/documents/2023-03/Draft%20CM%20Guidance%2088%20FR%2017571_3-23-23.pdf)

(VMT) or the number of vehicle trips within two years of designation for ozone nonattainment areas classified as Severe or above. Appendix C of the 2023 Plan includes a VMT offset demonstration and analysis prepared pursuant to the requirements of the Act and consistent 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.” The VMT offset analysis demonstrates that the identified transportation control strategies and measures are sufficient to offset the growth in emissions in Eastern Kern. For completeness, the key mobile source regulations and emission reduction programs that were used in the VMT offset demonstration and analysis are also included in Appendix C, Page C-8.

## VI. Requirements Addressed Through Separate Submittals

In addition to all of the SIP requirements that are addressed in the 2023 Plan, there are many other requirements under the 75 ppb and 70 ppb standards that have been addressed through separate submittals in recent years, or will be in the future, as listed in Table 13 and described in more detail below.

Table 13 – 75 ppb and 70 ppb standard SIP Elements Addressed in Separate Submittals

SIP Element	Submittal Title	Submittal Date
Emissions Statement		December 7, 2022
Nonattainment New Source Review	District Rule 210.1 Amendment, New and Modified Stationary Source Review (NMSR) (Latest version adopted August 8, 2022)	October 5, 2022
Reasonably Available Control Technology		August 9, 2017 and March 30, 2021
Vehicle Inspection and Maintenance Program	California Smog Check Performance Standard Modeling and Program Certification for the 70 ppb Standard	2023
Clean Fuels for Fleets Program	California Clean Fuels for Fleets Certification for the 70 ppb Ozone Standard (Adopted January 27, 2022)	February 3, 2022
Severe/Extreme Area Fee Program	185 Fee Rule (if applicable)	TBD

### 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 the potential to emit ROG and/or NOx emissions; the program must mandate 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 108.2, Emission Statement Requirements, addresses this requirement as stated in Chapter XI of the 2023 Plan. To meet requirements under the 75 ppb and 70 ppb standards, the District amended District Rule 108.2 on August 4, 2022 and is awaiting U.S. EPA’s approval of the amendment into the California SIP.

## 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. District Rule 210.1, New and Modified Stationary Source Review (NMSR), addresses this requirement as stated in Chapter XII of the 2023 Plan. To meet requirements under the 75 ppb ozone standard as a Severe nonattainment area, the District adopted District Rule 210.1A on August 8, 2022. The District plans to amend Rule 210.1 in the near future to include components for Severe nonattainment area for the 70 ppb ozone standard.

## Reasonably Available Control Technology

Section 182(b)(2) of the Act requires the 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 District developed the 2017 Eastern Kern RACT SIP for the 75 ppb standard (2017 RACT SIP) and reviewed existing stationary source rules to determine if those rules meet RACT requirements under the 75 ppb ozone standard<sup>24</sup>. The 2017 RACT SIP was adopted by the District on May 11, 2017 and submitted to U.S. EPA for inclusion in the California SIP on August 9, 2017. U.S. EPA approved this submittal effective December 5, 2021.<sup>25</sup> The District also developed the 2020 Eastern Kern RACT SIP for the 70 ppb standard (2020 RACT SIP) and reviewed existing stationary source rules to determine if those rules meet RACT requirements under the 70 ppb standard<sup>26</sup>. The 2020 RACT SIP was adopted by the District on September 3, 2020, and submitted to U.S. EPA for inclusion in the California SIP on March 30, 2021. The 2020 RACT SIP concluded that all of the existing SIP-approved District rules meet RACT requirements or are not subject to RACT requirements for the 75 ppb and 70 ppb standards, and included negative declarations certifying that no sources are present in the nonattainment area for the applicable CTGs. Both the 2017 and 2020 RACT SIPs addressed the requirements for Serious nonattainment areas, while the requirements for Severe nonattainment areas are satisfied through the District's alternative RFP analysis which compares applicable rules to those in Extreme nonattainment areas. The alternative RFP analysis also examines if the applicable rules are still RACT since the RACT SIPs were adopted.

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<sup>24</sup> <http://www.kernair.org/Documents/Announcements/Attainment/EK%20RACT%20SIP%20Adopted%205-11-17.pdf>

<sup>25</sup> 86 Fed. Reg. 60,771, <https://www.govinfo.gov/content/pkg/FR-2021-11-04/pdf/2021-23376.pdf>

<sup>26</sup> [http://www.kernair.org/Documents/Announcements/Attainment/EK%202015%20RACT%20SIP%20\(70ppb\)%20Adopted%209-3-20.pdf](http://www.kernair.org/Documents/Announcements/Attainment/EK%202015%20RACT%20SIP%20(70ppb)%20Adopted%209-3-20.pdf)

## 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 program (I/M) to implement Basic and Enhanced I/M in applicable areas that are 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 standard, CARB worked with BAR to conduct a performance standard evaluation in order to certify that California's existing program continues to meet requirements. CARB adopted the certification that California's existing program continues to meet the requirements on March 23, 2023 and submitted it to U.S. EPA on April 26, 2023 for inclusion in the California SIP.

## 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 the implementation of the U.S. EPA Program. As such, California ozone NAAs 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<sup>27</sup>. 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.

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<sup>27</sup> 1 64 FR 46849, published on August 27, 1999 and effective on September 27, 1999, Approval and Promulgation of State Implementation Plans; California

To meet requirements under the 70 ppb 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 into the California SIP.

## 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<sub>x</sub> or ROG. In the event that (1) the District fails to attain the 75 ppb or 70 ppb standard by 2026 and 2032, (2) if the District cannot demonstrate that ozone precursor emissions transported from other areas are a major contributing factor to the District not attaining the standards, and (3) Eastern Kern has a population over 200,000 in the attainment years, the District will adopt and implement a 185 fee rule pursuant to the requirements of Act §185 and consistent with guidance issued by U.S. EPA.

## 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 2022 Ozone Plan, with the CARB Staff Report (“project”). A brief explanation of this determination is provided in subsection C 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

The District prepared a Notice of Exemption (NOE) for the 2023 Plan.<sup>28</sup> The District’s NOE determined the 2023 Plan is exempt from CEQA under the Application by Public Agencies exemption (California Code of Regulations, title 14, section 15300.4). The District’s NOE 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

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<sup>28</sup> <http://www.kerncountyclerk.com/en/CEQA/ViewImageGoBack.aspx?Id=78400>

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 for the proposed 2022 State Strategy for the State Implementation Plan, dated September 16, 2022, 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

#### 1. Legal Standards

When considering further action on an activity 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 35 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)).

a. Basis for Determination

As noted above, the District evaluated the potential environmental impacts from the 2023 Plan and determined it is exempt from CEQA. 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, quantifying the emissions reductions associated with them, and submitting them to U.S. EPA for inclusion into the 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 2023 Plan 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 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 SIP Strategy EA and the District's NOE 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 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 NOE for the 2023 Plan and the Final EA for the 2022 State SIP Strategy fully address the implementation of the 2023 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 that document. The proposed project involves compiling these existing measures from the 2023 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 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 or the District's 2023 Plan. The proposed project involves compiling these existing measures from the District's 2023 Plan and CARB's State SIP Strategy, quantifying the emissions reductions associated with them, and submitting them to U.S. EPA for inclusion into the 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 NOE. As noted above, CARB does not propose to modify any of the commitments previously analyzed. The proposed project involves compiling these existing measures from the District's 2023 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 SIP. As noted above, this exercise does not involve any modifications to any of the previously approved measures.

The District adopted its NOE on May 4, 2023, 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 State SIP Strategy or 2023 Plan. 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 elements of the 2023 Plan and concludes that it meets all the requirements of the Act for the 75 and 70 ppb 8-hour ozone standards for Severe areas. CARB staff recommends that the Board:

1. Approve the District’s request to reclassify Eastern Kern as Severe for the 70 ppb standard;
2. Adopt the commitment to achieve aggregate emissions reductions of 1.8 tpd of NO<sub>x</sub> and 0.1 tpd of ROG in the Eastern Kern nonattainment area by 2032, including a subset to come specifically from on-road mobile source measures of 0.2 tpd NO<sub>x</sub> and 0.03 tpd ROG as included in the CARB Staff Report;
3. Adopt the 2023 Plan, including the emission inventories, attainment demonstration, RACM demonstration, RFP demonstration, contingency measures, VMT offset demonstration and transportation conformity budgets, as a revision to the California SIP; and
4. Direct the Executive Officer to submit the 2023 Plan and the CARB Staff Report to U.S. EPA as a revision to the California SIP.