

# **Staff Report**

## **CARB Review of the 2023 Plan for Attaining the National Ambient Air Quality Standard for Ozone in Mariposa County**

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**CALIFORNIA**  
AIR RESOURCES BOARD

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## Executive Summary

This report presents the Air Resources Board (CARB or Board) staff's assessment of the *2023 Plan for Attaining the National Ambient Air Quality Standard for Ozone in Mariposa County* (2023 Plan) prepared by the Mariposa County Air Pollution Control District (Mariposa APCD or District) for the 70 parts per billion 8-hour ozone standard (70 ppb ozone standard). 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, and contingency measures for progress and attainment as shown in Table 1 below. The District Board adopted the 2023 Plan on November 21, 2023, and directed CARB to 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 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. On June 4, 2018, U.S. EPA designated Mariposa County as a Marginal nonattainment area for the 70 ppb ozone standard<sup>1</sup>. Mariposa County failed to meet the standard by the Marginal area deadline. U.S. EPA classified Mariposa County as a Moderate nonattainment area effective November 7, 2022 for the 70 ppb ozone standard with an attainment deadline of August 3, 2024. During the SIP development process, the District determined that Mariposa County could not attain by the Moderate attainment deadline and is requesting in the 2023 Plan to be classified as a Serious nonattainment area with an attainment deadline of August 3, 2027. To meet the Serious area attainment date, Mariposa County needs to demonstrate attainment in the calendar year of 2026.

The 2023 Plan addresses the federal 8-hour ozone standard of 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. Mariposa County is regularly impacted by emissions and

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<sup>1</sup> 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>

polluted air masses coming from the Central Valley air basins, particularly the San Joaquin Valley Air Basin. Over the past two decades, ozone levels in Mariposa County have shown significant improvement in response to reductions in emissions of NOx and ROG from current control programs both statewide and in the nonattainment area. Many of these reductions come from on-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 mobile source programs will reduce NOx emissions by 48 percent and ROG emissions by 32 percent in 2026.

Table 1 - 70 ppb ozone standard SIP Elements included in the 2023 Plan for Mariposa County

SIP Element	District Plan
Attainment Demonstration	X
Photochemical Modeling Analysis	X
Weight of Evidence Analysis	X
Reasonable Available Control Measures Analysis	X
Transportation Conformity	X
Emissions Inventories	X
Reasonable Further Progress Demonstration	X
Contingency Measures	X

CARB staff has reviewed the 2023 Plan and concludes that it meets all the requirements of the Act for the 70 ppb ozone standard for a Serious nonattainment area. CARB staff recommends the Executive Officer submit the 2023 Plan and the CARB 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 lining of the human lungs. This pollutant forms in the atmosphere through complex reactions between NO<sub>x</sub> 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 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 Mariposa County as nonattainment with a Marginal classification<sup>2</sup>. Effective November 7, 2022, U.S. EPA classified Mariposa County as a Moderate nonattainment area with an August 3, 2024 attainment date<sup>3</sup>. During the SIP development process, the District determined that the Mariposa County nonattainment area could not attain by the Moderate attainment deadline and is requesting in the 2023 Plan to be classified as a Serious nonattainment area with an attainment deadline of August 3, 2027. To address the 70 ppb ozone standard, the District adopted the 2023 Plan on November 21, 2023. Due to the timing of the ozone season, the District must demonstrate the Mariposa County nonattainment area will attain the standard by 2026, the last full ozone season prior to the attainment date. The 2023 Plan also addresses Act requirements

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<sup>2</sup> 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>

<sup>3</sup> 87 FR 60897; Posted October 7, 2022 and effective November 7, 2022, "Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Areas Classified as Marginal for the 2015 Ozone National Ambient Air Quality Standards", <https://www.govinfo.gov/content/pkg/FR-2022-10-07/pdf/2022-20458.pdf>

applicable to a Serious ozone nonattainment area, consistent with U.S. EPA's 2018 Implementation Rule for the 70 ppb ozone standard (Implementation Rule)<sup>4</sup>.

## **II. Nature of the Ozone Problem in Mariposa County**

Mariposa County is located in California's Sierra Nevada foothills and mountains, encompassing approximately 1,463 square miles. The area consists of gradual foothills rising out of California's Central Valley on the western side of the county that transition to steeper, more complex terrain characterized by deep river valleys separated by mountain ridges and tall mountain peaks on the eastern side. Elevations within Mariposa County increase from roughly 200 feet above average sea level in the west to over 12,000 feet in the east. The 2020 Census recorded the population of Mariposa County as approximately 17,131. There are no incorporated cities in Mariposa County, however, there are communities recognized as census designated places for statistical purposes. Mariposa County has an arid summer climate with warm, dry summers and wet, cold, winters. Mariposa County is also the home of Yosemite National Park, with tourism generating most of the vehicular traffic.

Air quality in Mariposa County is affected by various factors, including its complex terrain and topographic features, precursor emissions in the upwind source regions, local emissions from anthropogenic and naturally occurring biogenic sources, ozone chemistry along the transport pathways, and meteorological conditions that facilitate transport of ozone and its precursors. Elevated ozone concentrations occur in Mariposa County during the late spring through early fall, when high temperatures and atmospheric conditions favor ozone formation. Mariposa County is regularly impacted by emissions and polluted air masses from within the Central Valley, particularly the San Joaquin Valley Air Basin, as ozone can be transported up into the nonattainment area and become trapped in mountain valleys. Ozone during this season generally reaches peak levels by early evening and remains elevated through the night, both of which are evidence of the transported nature of ozone recorded in Mariposa County.

Ozone is monitored in Mariposa County at two air monitoring sites; Jerseydale and Turtleback Dome in Yosemite National Park. The Jerseydale ozone monitoring site is located approximately 3,770 feet above average sea level and is in an unincorporated community. The Jerseydale site is operated seasonally April through October, when peak ozone is expected and the site is accessible. The Yosemite-Turtleback Dome ozone monitoring site is located in Yosemite National Park at 5,280 feet above average sea level and is operated by the National Park Service (NPS) year-round.

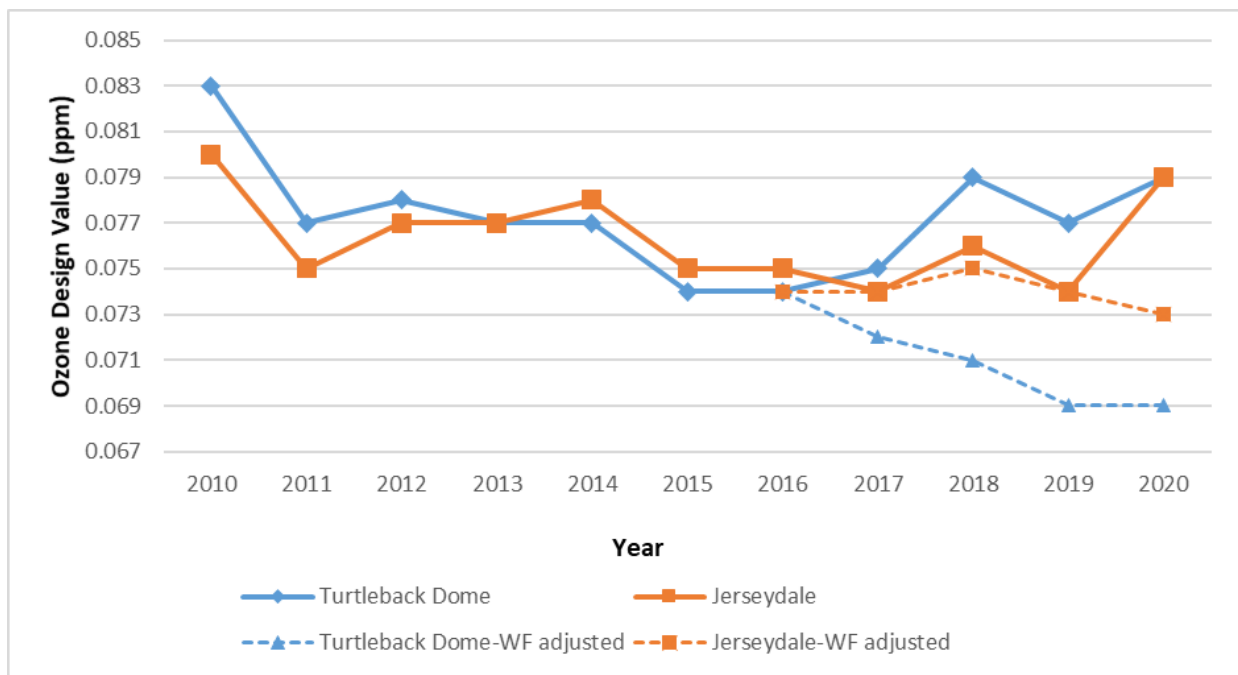
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<sup>4</sup> 83 FR 62998, Posted December 6, 2018, "Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements", <https://www.govinfo.gov/content/pkg/FR-2018-12-06/pdf/2018-25424.pdf>

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. From 2000 to 2020, the 8-hour ozone design value within Mariposa County declined steadily, but also exhibited a fair amount of variability due to year-to-year differences in meteorology, which impacts the transport of pollutants from upwind sources, along with wildfire. Overall, the area-wide design values have declined by ~15 ppb from 94 ppb in 2000 to 79 ppb in 2020. Exceedances of the 70 ppb ozone standard have also substantially declined over time from 68 days in 2000 to 24 days in 2020 indicating significant improvements in ozone air quality across the region. Ozone design values are generally similar at both sites; with both having a design value of 79 ppb in 2020.

Design value trends have increased slightly since 2017, largely due to wildfire impacts. In recent years, the prevalence of forest fires during the summer ozone season significantly impacted the air quality in Mariposa County. High ozone concentrations were observed at the Jerseydale and Yosemite National Park - Turtleback Dome monitors and other surrounding sites in the region on days impacted by forest fires and likely caused the increase in the design values seen from 2018 to 2020. Removal of high ozone values from design value calculations for days impacted by wildfires led to a reduction in design values for both Jerseydale and Yosemite-Turtleback Dome, as shown in Figure 1. The number of exceedance days also dropped to 9 (from 31) and 13 (from 24) in 2018 and 2020 when the forest fire impacted days were excluded. Details and analysis of the fire impacted ozone days can be found in the Weight of Evidence analysis in Appendix F of the 2023 Plan.

Figure 1 - Mariposa County Ozone Design Value Trends (ppb)



Source: 2023 Plan, Section II



### 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 Mariposa County.

CARB submitted the 2017 base year inventory for Mariposa County to U.S. EPA on July 27, 2020 and U.S. EPA approved it effective October 31, 2022. The 2023 Plan uses an updated 2017 base year inventory; the inventory uses 2017 emissions and activity levels, and inventories for other years are back-cast or forecast from that base year inventory. The inventories reflect CARB rules submitted through December 2021. As discussed in Section 2 of the 2023 Plan, the area's attainment challenges under the 70 ppb ozone standard occur in the summer months, when meteorological patterns and hot, dry days, encourage 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. The emission inventories in the 2023 Plan include emissions for the base year (2017), RFP baseline year (2018), RFP milestone year (2024), and attainment year (2026).

On-road motor vehicle emissions and activity data were generated using CARB's mobile source emissions model, EMFAC2017. Off-road mobile source emissions were generated using CARB's OFFROAD model. Both models were developed for use in the 70 ppb ozone standard SIP revisions 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 Mariposa County. Within these categories, light heavy-duty diesel trucks, off-road equipment, and recreational boats contribute the largest portions of NO<sub>x</sub> emissions in Mariposa County's inventory.

Table 2 - Mariposa County NOx Emissions  
(tpd, summer planning inventory)

Source Category	2017	2018	2024	2026
Stationary and Area-wide	0.03	0.15	0.07	0.07
On-Road Motor Vehicles	0.48	0.44	0.23	0.19
Off-Road Vehicles and Equipment	0.19	0.25	0.19	0.17
<b>TOTAL</b>	0.70	0.84	0.49	0.43

Source: Appendix A, 2023 Plan  
Numbers may not add due to rounding

Table 3 - Mariposa County ROG Emissions  
(tpd, summer planning inventory)

Source Category	2017	2018	2024	2026
Stationary and Area-wide	1.36	3.77	2.31	2.32
On-Road Motor Vehicles	0.34	0.31	0.22	0.20
Off-Road Vehicles and Equipment	0.49	0.49	0.38	0.35
<b>TOTAL</b>	2.19	4.57	2.91	2.87

Source: Appendix A, 2023 Plan  
Numbers may not add due to rounding

Section IV and Appendix A of the 2023 Plan presents 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 the 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 must be explicitly treated as emissions in the air. The District has no banked emission reduction credits, and therefore no emission reduction credit balance is included in the 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. The District has prepared an attainment demonstration that provides for expeditious attainment of the 70 ppb 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 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. Mariposa County is located at the southern tip of the Mountain Counties Air Basin, but is subject to pollutant transport from the Central Valley, particularly the San Joaquin Valley. The photochemical modeling domain used in the 2023 Plan covers all of California, with a smaller Central California nested domain of 4 kilometer grids which includes Mariposa County in its entirety.

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 used 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 year 2020. In this method, the 8-hour ozone design values for year 2020 was replaced by the two-year average of the 4th highest 8-hour ozone concentrations from 2018 and 2019.

In 2016 - 2020, the prevalence of forest fires during the summer ozone season heavily impacted air quality in Mariposa County and high ozone concentrations were observed at both the Jerseydale and Yosemite - Turtleback Dome sites during fire impacted days. To remove the impact of forest fires, ozone design values were calculated by excluding days in 2016-2020 that were impacted by forest fires. Details about and analysis of fire impact days can be found in the Weight of Evidence analysis in Appendix F 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>5</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 quality. The modeling is used to identify the benefits of controlling ozone precursors and the most expeditious attainment date.

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<sup>5</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)

The year 2018 was chosen as the modeling base (or reference) year. Wildfire events in 2016-2018 and were excluded from the modeling reference year and design value calculations. The future year modeled was 2026, the year attainment must be demonstrated for a Serious ozone nonattainment area. The attainment demonstration modeling includes the benefits of CARB’s existing mobile source control program. Photochemical modeling analyses indicate that Mariposa County will be able to attain in 2026 and meet the Serious area attainment deadline with currently adopted control measures that continue to yield additional emission reductions in future years. No new emission control commitments are required for attainment. The Mariposa County nonattainment area will meet the 70 ppb ozone standard in 2026. Table 4 summarizes the 2026 emissions modeled in the attainment demonstration.

Table 4 - 2026 Modeled Mariposa County NOx and ROG Emissions  
(tpd, summer planning inventory)

2026 Emissions	NOx	ROG
<b>Attainment Emissions Inventory</b>	0.427	2.867

Source: 2023 Plan, Section X, Table 11-1

Further detail on the modeled attainment demonstration is provided in Section X and Appendix D 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 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 Appendix F of the 2023 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. The WOE indicates that Mariposa County is on track to attain the 70 ppb ozone standard by 2026, which is consistent with design value projections derived from the regional photochemical modeling assessment conducted by CARB. Collectively, the air quality analyses included in the WOE indicate that substantial air quality progress has been accomplished in Mariposa County; and that current control measures implemented in Mariposa County and in the upwind urban areas should lead the region to attain the 8-hour ozone standard of 70 ppb by the Serious attainment deadline of August 3, 2027.

## **A. Control Strategy**

The ongoing emission reductions from continued implementation of CARB and District current control programs and in upwind areas 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.

### **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 B of the 2023 Plan.

### **ii) 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 NO<sub>x</sub> and ROG prohibitory rules were addressed in the Reasonably Available Control Technology (RACT) SIP adopted by the District Board on November 21, 2023. The District commits to revising district rules to meet RACT requirements. The RACT SIP analysis followed RACT requirements for major sources with a potential to emit 50 tons per year or greater of ROG or NO<sub>x</sub>, the threshold for Serious attainment areas.

## **B. 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 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 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.

Air quality modeling (Section X and Appendix D of the 2023 Plan) demonstrates that ozone concentrations in Mariposa County are overwhelmingly impacted by the transport of ozone and precursor emissions from upwind areas, primarily the San Joaquin Valley. Relatively few stationary and areawide source categories in the emission inventory for Mariposa County report non-zero emissions. As a result, the reduction of NO<sub>x</sub> and ROG emissions in Mariposa County will not significantly impact ozone concentrations in the nonattainment area. The District conducted an analysis of potential control measures for emission

reduction opportunities, as well as economic and technological feasibility. Based on this analysis, the District found that there are no potential additional measures that can alone or collectively reduce emissions to 2026 levels by 2025. Further detail on the RACM analysis is provided in Section VII of the 2023 Plan.

### C. Modeled Results

Future year design values for the Jerseydale and Yosemite - Turtleback Dome site in the Mariposa nonattainment area were calculated and results of the attainment demonstration modeling are shown in Table 5.

In recent years, the prevalence of wildfires during the summer ozone season significantly impacted air quality in Mariposa County. High ozone concentrations were observed on days affected by forest fires, particularly in 2016-2018, and 2020. When fire impacted days are excluded in the baseline design value, the projected ozone design value in 2026 is 68.1 ppb for Jerseydale and 66.5 ppb for Yosemite - Turtleback Dome. Therefore, the attainment demonstration modeling predicts that Mariposa County will attain the 70 ppb ozone standard in 2026. Further information on the modeled attainment demonstration is included in Section X and Appendices D and E of the 2023 Plan.

Table 5 - Modeled 8-hour Ozone Design Values Demonstrating Attainment

Site	2018 Base Year Design Value (ppb)	2026 Future Year Design Value (ppb)
Jerseydale (all days)	74.7	68.7
Jerseydale (fire days excluded)	74.0	68.1
Yosemite-Turtleback Dome (all days)	77.3	73.7
Yosemite-Turtleback Dome (fire days excluded)	69.7	66.5

Source: Appendix D, 2023 Plan

### 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 Serious ozone nonattainment areas to address the following elements:

- Provisions that demonstrate RFP;
- Motor vehicle emission budgets (MVEB) 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 or an alternative RFP baseline year that corresponds with the year of the effective date of an area's designation<sup>6</sup>. The Act and U.S. EPA guidance also specify two separate RFP requirements for ozone nonattainment areas depending upon their classification. For ozone nonattainment areas classified as Moderate or above, there is a one-time requirement to demonstrate a 15 percent reduction in ROG emissions over the first six years of the planning period, historically known as rate of progress. Ozone nonattainment areas classified as Serious or higher have an additional requirement to demonstrate 3 percent per year cumulative reduction of ozone precursors averaged over each consecutive three-year period until attainment. Where both ROG and NO<sub>x</sub> emissions have been shown to contribute to high ozone levels, the Act allows NO<sub>x</sub> emission reductions to augment ROG emission reductions in order to demonstrate the annual 3 percent reductions of ozone precursors once the 15 percent ROG only requirement has been met if NO<sub>x</sub> reductions have been demonstrated to be as effective or more than ROG reductions in reducing ozone levels.

Effective August 3, 2018, Mariposa County was designated nonattainment for the 70 ppb ozone standard. For Mariposa County, CARB and the District determined it was more appropriate to use the year that Mariposa was designated nonattainment, 2018, as the RFP baseline year inventory to demonstrate the 15 percent ROG only rate of progress requirement that must be achieved prior to allowing the use of NO<sub>x</sub> substitution. Additionally, the 2018 RFP baseline year inventory and the 2017 inventory are consistent with each other as required by the Implementation Rule. For both, emissions reflect actual areawide prescribed fire emissions and similar stationary source emissions. Stationary emissions also include stationary aggregate sources, such as gasoline dispensing facilities, that are estimated as a group and reported as an aggregated total. The 2018 RFP baseline year emissions for areawide, stationary aggregate sources and mobile are forecasted from the 2017 year, relying on the same growth and control methodology as is used for future years.

The 2023 Plan includes an RFP demonstration that meets the Act's requirements based on the RFP baseline year of 2018. The analysis demonstrates the one-time requirement for a 15 percent reduction in ROG emissions over the first six years of the planning period (in

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<sup>6</sup> 83 FR 63005, 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>

2024), and further demonstrates that the cumulative ROG and NOx emission reductions from adopted measures in the current control program in Mariposa County meets the RFP targets in both the milestone year, 2024, and the attainment year, 2026. A detailed emissions inventory, including emissions for the RFP milestone year and attainment, is available in Appendix A of the 2023 Plan. Further detail on the RFP demonstration is provided in Section IX of the 2023 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 rule<sup>7</sup> details requirements for establishing 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 Mariposa County for the RFP milestone year and attainment year for transportation conformity purposes for a Serious area classification under the 70 ppb ozone standard. The MVEBs will apply to all subsequent transportation conformity years, per the federal transportation conformity regulations. MVEBs for NOx and ROG were calculated using EMFAC2017 and reflect summer average emissions. 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 VIII of the 2023 Plan.

## **C. Contingency Measures**

Contingency measures are required by the Act to be implemented should an area fail to make RFP or attain the air quality 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 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

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<sup>7</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.



needed for RFP and attainment, multiple court decisions over the last few years in the 9th Circuit and nationwide have effectively disallowed this SIP-approved 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 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 49 percent of Statewide NO<sub>x</sub> emissions by 2026.<sup>8</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 air quality standards rather than withhold it for contingency measure purposes. That said, CARB and the District continue to explore potential contingency measures while awaiting U.S. EPA's written guidance (which was proposed in March 2023 but is not yet finalized) and fully intend to meet the contingency requirement as required by the Act.

Additionally, given the limited number of emissions sources under the regulatory authority of the District, and the overwhelming impact of transport on local ozone concentrations, options for additional emissions reduction measures in Mariposa County are scarce. The District relies on emission reductions from upwind areas and mobile source control measures at the State level to achieve many of its emissions reductions, programs which notably continue to achieve emissions reductions in future years in excess of what is needed for RFP and attainment.

Based on the evaluation of possible measures to address contingency measure requirements, CARB developed the California Smog Check Contingency Measure to fulfill contingency measure requirements for Mariposa County and other nonattainment areas. This measure was adopted by the Board in October 2023, and was submitted to U.S. EPA for incorporation into the SIP on November 13, 2023.

Further discussion of contingency measures can be found in Section XI of the 2023 Plan.

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<sup>8</sup> Source: CARB 2019 CEPAM v1.04; based on 2026 emissions totals.

## VI. Requirements Addressed Through Separate Submittals

In addition to all of the SIP requirements that are addressed in the 2023 Plan, there are other requirements under the 70 ppb ozone standard that have been addressed through separate submittals in recent years, or will be in the future, as listed in Table 6 and described in more detail below.

Table 6 - 70 ppb ozone standard SIP Elements Addressed in Separate Submittals

SIP Element	Submittal Title	Submittal Date
Emissions Statement	Certification of Emissions Statements Rule Adequacy	April 30, 2019
Nonattainment New Source Review	New Source Review Requirements for New and Modified Major Sources in Nonattainment Areas	April 5, 2019
Base Year Emissions Inventory	70 ppb Ozone SIP Submittal (Approved by U.S. EPA effective October 31, 2022 <sup>9</sup> )	July 24, 2020
Reasonably Available Control Technology	Reasonably Available Control Technology State Implementation Plan for the 2015 and 2008 Ozone National Ambient Air Quality Standards (District Adopted November 21, 2023)	2023
Vehicle Inspection and Maintenance Program	California Smog Check Performance Standard Modeling and Program Certification for the 70 Parts Per Billion (ppb) 8-Hour Ozone Standard (CARB adopted March 23, 2023)	June 23, 2023
Clean Fuels for Fleets Program	California Clean Fuels for Fleets Certification for the 70ppb Ozone Standard (CARB Adopted January 27, 2022)	February 3, 2022

### A. Emissions Statement

Section 182(a)(3)(B) of the Act requires ozone nonattainment areas submit into the SIP an Emissions Statement rule or program for stationary sources with potential to emit ROG and/or NOx emissions; the program must mandate stationary sources, with emissions over 50 tons per year of NOx or ROG, report and certify the accuracy of NOx and ROG emissions annually. District Rule 513, *Emission Statements*, addresses this requirement as stated in Section V of the 2023 Plan. To meet requirements under the 75 ppb ozone standard, the District adopted District Rule 513 on May 15, 2018 and submitted it to U.S. EPA for inclusion

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<sup>9</sup> 87 FR 59015, effective October 31, 2022, "Clean Air Plans; Base Year Emissions Inventories for the 2015 Ozone Standards; California" <https://www.govinfo.gov/content/pkg/FR-2022-09-29/pdf/2022-20586.pdf>

into the California SIP on April 30, 2019. U.S. EPA approved District Rule 513 into the SIP on July 13, 2020.

## **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. District Regulation XI, *NSR Requirements for New and Modified Major Sources in the Mariposa County Air Pollution Control District*, addresses this requirement as stated in Section VI of the 2023 Plan. To meet requirements under the 70 ppb ozone standard, the District amended District Regulation XI on March 12, 2019 and submitted it to U.S. EPA for inclusion into the California SIP on April 5, 2019. U.S. EPA approved District Regulation XI into the SIP on November 19, 2020.

## **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 District developed the *Reasonably Available Control Technology State Implementation Plan for the 2015 and 2008 Ozone National Ambient Air Quality Standards* (RACT SIP) and reviewed existing stationary source rules to determine if those rules meet RACT requirements under the 70 ppb and 75 ppb ozone standards. The RACT SIP concluded that a District rule will need to be amended to be consistent with RACT requirements, and included a commitment to amend that rule. The District also included negative declarations certifying that no sources are present in the nonattainment area for the applicable CTGs. The District Board adopted the RACT SIP on November 21, 2023 and directed CARB to submit the RACT SIP to U.S. EPA for inclusion in the California SIP.

## **D. Vehicle Inspection and Maintenance Program**

Sections 182(a)(2)(B), 182(b)(4), and 182(c)(3) of the Act require ozone nonattainment areas to have in place a vehicle inspection and maintenance program (I/M) to implement Basic and Enhanced I/M in applicable areas that is at least as stringent as the federal program. The Mariposa County nonattainment area does not meet the applicable population threshold for an Enhanced I/M program. A Basic I/M program is required and has been implemented in Mariposa County. In California, the Bureau of Automotive Repair (BAR) develops and implements the I/M program. California's I/M program was first submitted and approved by U.S. EPA for inclusion in the California SIP in 1997, and subsequent revisions were approved in 2007 and 2010. To meet requirements under the 70 ppb ozone standard,

the Board adopted the *California Smog Check Performance Standard Modeling and Program Certification for the 70 Parts Per Billion (ppb) 8-Hour Ozone Standard* on March 23, 2023. CARB worked with BAR to conduct this performance standard evaluation in order to certify that California's existing program continues to meet requirements.

## **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 human 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.

The Clean-Fuel Vehicle Fleet Program is not applicable to the Mariposa County nonattainment area since they are below the applicable population threshold to require this program. However, CARB's 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, 1999<sup>10</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. U.S. EPA approved a revision to the California SIP for the Clean Fuels for Fleets Program for the 70 ppb standard, effective June 26, 2023<sup>11</sup>.

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<sup>10</sup> 64 FR 46849, effective on September 27, 1999, "Approval and Promulgation of State Implementation Plans; California" <https://www.govinfo.gov/content/pkg/FR-1999-08-27/pdf/99-22187.pdf>

<sup>11</sup> 88 FR 33830, effective June 26, 2023 "Clean Air Plans; 2015 8-Hour Ozone Nonattainment Area Requirements; Clean Fuels for Fleets; California" <https://www.govinfo.gov/content/pkg/FR-2023-05-25/pdf/2023-11006.pdf>

## VII. Environmental Impacts

The California Environmental Quality Act (CEQA) requires that State and local agency projects be assessed for potential environmental impacts. An air quality plan is a “project” that is potentially subject to CEQA requirements. The District found that the 2023 Plan will not result in any potentially significant adverse effects on the environment and is exempt from CEQA under the provisions of section 15061 (b)(3) (the general rule that CEQA only applies to projects which have the potential for causing a significant effect on the environment) and section 15308 (actions taken by a regulatory agency for protection of the environment) of the CEQA Guidelines.

CARB has determined that its review and approval of the 2023 Plan submitted by the District for inclusion in the California SIP is a ministerial activity by CARB for purposes of CEQA (14 California Code of Regulations (CCR) § 15268). A “ministerial” decision is one that involves fixed standards or objective measurements, and the agency has no discretion to shape the activity in response to environmental concerns. (14 CCR § 15369; *San Diego Navy Broadway Complex Coalition v. City of San Diego* (2010) 185 Cal.App.4th 924, 934.)

CARB’s review of the 2023 Plan is limited to determining if it meets all the requirements of the Act. CARB is prohibited from approving it or changing it unless CARB finds that it does not comply with the Act (Health and Safety Code § 41650 and 41652). Since CARB lacks authority to not adopt the plan, or modify it, in response to environmental concerns raised through the CEQA process, CARB’s action on the plan is ministerial for purposes of CEQA.

## VIII. Staff Recommendation

CARB staff has reviewed the 2023 Plan and has concluded that it meets the requirements of the Act for the 70 ppb ozone standard. CARB staff recommends that the Executive Officer:

1. Approve the 2023 Plan, including the emission inventories, attainment demonstration, RACM demonstration, RFP demonstration, contingency measures, and transportation conformity budgets, as a revision to the California SIP; and
2. Submit the 2023 Plan to U.S. EPA as a revision to the California SIP and take appropriate action to resolve any completeness or approvability issues that may arise regarding the SIP submission; and
3. Include in the SIP submittal any technical corrections, clarifications, or additions that may be necessary to secure U.S. EPA approval.