

Staff Report

CARB Review of the Ozone Attainment Plan for Western Nevada County for the 70 ppb 8-Hour Ozone Standard

Release Date: February 10, 2023

Hearing Date: March 23, 2023



This document has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the California Air Resources Board, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

Electronic copies of this document are available for download from the California Air Resources Board's Internet site at: <https://ww2.arb.ca.gov/our-work/programs/california-state-implementation-plans/nonattainment-area-plans/northern-sierra-1>. In addition, written copies may be obtained from the Public Information Office, California Air Resources Board, 1001 I Street, 1st Floor, Visitors and Environmental Services Center, Sacramento, California 95814. Because of current travel, facility, and staffing restrictions, the California Air Resources Board's offices may have limited public access. Please contact Candace Clawson, Office Technician, at candace.clawson@arb.ca.gov if you need physical copies of the documents.

For individuals with sensory disabilities, this document is available in Braille, large print, audiocassette, or computer disk. Please contact CARB's Disability Coordinator at (916) 323-4916 by voice or through the California Relay Services at 711, to place your request for disability services. If you are a person with limited English and would like to request interpreter services, please contact CARB's Bilingual Manager at (916) 323-7053.

For questions, contact:

Leah Mathews

Air Pollution Specialist
Central Valley Air Quality Planning Section
California Air Resources Board
Phone: (279) 208-7830
Email: leah.mathews@arb.ca.gov

Or

Alicia Adams

Manager
Central Valley Air Quality Planning Section
California Air Resources Board
Phone: (279) 208-7154
Email: alicia.adams@arb.ca.gov

Table of Contents

Executive Summary	4
I. Background	6
II. Nature of the Ozone Problem in Western Nevada County.....	7
III. Emission Inventory.....	9
IV. Attainment Demonstration.....	11
A. Control Strategy.....	13
i) CARB Current Control Program.....	13
ii) District Control Program	13
B. Reasonably Available Control Measures Demonstration	13
C. Modeled Results	14
V. Additional Clean Air Act Requirements	14
A. Reasonable Further Progress Demonstration	15
B. Motor Vehicle Emissions Budgets.....	15
C. Contingency Measures.....	16
VI. Requirements Addressed Through Separate Submittals	17
A. Emissions Statement	17
B. Nonattainment New Source Review	18
C. Reasonably Available Control Technology.....	18
D. Vehicle Inspection and Maintenance Program.....	19
E. Clean Fuels for Fleets Program.....	19
VII. Environmental Impacts	20
VIII. Staff Recommendation	20

Executive Summary

This report presents the Air Resources Board (CARB or Board) staff's assessment of the Ozone Attainment Plan for Western Nevada County (2023 Plan) prepared by the Northern Sierra Air Quality Management District (Northern Sierra AQMD 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 Board is scheduled to consider the 2023 Plan on March 23, 2023. If approved, 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 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 the Western Nevada County nonattainment area as Moderate nonattainment for the federal 70 ppb ozone standard¹. Per a request from the State, U.S. EPA reclassified Western Nevada County as a Serious nonattainment area effective November 29, 2021 for the 70 ppb ozone standard, requiring attainment by August 3, 2027. CARB and the District have developed a series of SIPs which 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 Western Nevada County.

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. Western Nevada County is regularly impacted by emissions and polluted air masses coming from the Sacramento Federal Ozone Nonattainment Area and San Francisco Bay Area. Over the past two decades, ozone levels in

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

Western Nevada County have shown significant improvement in response to reductions in emissions of NOx and ROG from current control programs despite a 10 percent increase in population. Most 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 program 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 40 percent and ROG emissions by 31 percent in 2026.

Table 1 – 70 ppb ozone standard SIP Elements included in the Ozone Attainment Plan for Western Nevada 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

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 NO_x 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 standard in 2008, and 70 ppb standard in 2015.

Effective August 3, 2018, U.S. EPA designated Western Nevada County as a nonattainment area with a Moderate classification². During the SIP development process, the District determined that the Western Nevada County nonattainment area could not meet the Moderate attainment deadline and requested to be reclassified as a Serious nonattainment area. Effective November 29, 2021, U.S. EPA reclassified Western Nevada County as a Serious nonattainment area with an August 3, 2027 attainment date³. To address the 70 ppb ozone standard, Northern Sierra AQMD will consider adoption of the 2023 Plan on February 27, 2023. Due to the timing of the ozone season, Northern Sierra AQMD must demonstrate the Western Nevada County nonattainment area will attain the standard by 2026, the last full ozone season prior to the attainment date. The 2023 Plan also addresses

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

³ 86 FR 23454, Posted October 28, 2021 and effective November 29, 2021, "Designation of Areas for Air Quality and Planning Purposes; California; Eastern Kern, Sacramento Metro, and Western Nevada 2015 Ozone Nonattainment Areas; Reclassification to Serious", <https://www.govinfo.gov/content/pkg/FR-2021-10-28/pdf/2021-23454.pdf>

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

II. Nature of the Ozone Problem in Western Nevada County

Nevada County is located in northern California's Sierra Nevada foothills and straddles the northern crest of the Sierra Nevada Mountains, encompassing approximately 978 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 river valleys separated by mountain ridges and high mountain peaks on the eastern side. Elevations within Nevada County increase from roughly 300 feet above average sea level in the west to over 9,000 feet in the east. Only the western portion of Nevada County is designated nonattainment for the 70 ppb ozone standard. The Western Nevada County nonattainment area comprises the portion of Nevada County from the western boundary with Yuba and Placer counties to a north-south line approximately 20 miles from the crest of the Sierra Nevada Mountains in the east. The 2020 Census recorded the population of Western Nevada County as approximately 85,000.

Air quality in Western Nevada 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, as well as the meteorological conditions that facilitate transport of ozone and its precursors. Elevated ozone concentrations occur in Western Nevada County during the late spring through early fall, when high temperatures and atmospheric conditions favor ozone formation. Western Nevada County is regularly impacted by emissions and polluted air masses from within the Sacramento Federal Ozone Nonattainment Area and San Francisco Bay Area, as ozone can be transported up into the nonattainment area and become trapped in mountain valleys. The foothills of the Sierra Nevada allow air to transport ozone and ozone precursors into the basin from the west under normal summertime Delta breeze conditions. 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 Western Nevada County.

The city of Grass Valley is the largest city in the nonattainment area and sole site in Western Nevada County at which ozone has been monitored continuously over the past decade. As of the 2020 United States Census, the population of Grass Valley was 14,016. Situated at roughly 2,500 feet elevation in the Sierra Nevada foothills, the city is located about 60 miles north northwest from the State capitol in Sacramento. Grass Valley has a hot summer Mediterranean climate with warm to hot, dry summers and wet, cool, winters.

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

Design values are used to demonstrate an area's ozone compliance status in relation to the standard. The design value is the 4th high, 8-hour ozone value averaged over three years. Between 2001 and 2021, ozone concentrations overall declined with some annual variability due to differences in seasonal weather patterns. Figure 1 shows the design value concentrations and number of exceedance days at Grass Valley from 2001 to 2021. Between 2001 and 2021, the design value decreased by 17 percent from 96 ppb to 80 ppb. The number of exceedance days reduced from 80 in 2000 to 16 in 2012, an 80 percent decrease, then increased from 19 in 2013 to 78 in 2017 before declining beginning in 2018. The number of exceedance days in 2021 was 38.

Although there was a slight increase in ozone concentrations in the Grass Valley region from 2013 through 2017, likely due to meteorological patterns conducive to ozone formation and buildup, the ozone concentrations began to trend downward again in 2018. Atypically high ozone concentrations were also recorded at the Grass Valley site in 2017, with concentrations much higher than all neighboring sites and significantly higher than recent year trends. CARB staff analyses did not point to specific anthropogenic or biogenic emission increases or meteorology as likely causes for the unusual number of exceedances in 2017, suggesting a potential positive bias in the monitoring at the Grass Valley site in 2017.

In recent years, the prevalence of wildfires during the summer ozone season significantly impacted the air quality in Western Nevada County. High ozone concentrations were observed on days affected by forest fires, particularly in 2018, 2020 and 2021. The number of exceedance days in 2018 and 2020, 22 and 16, respectively, drops down to 7 and 3 when excluding wildfire impacted days, respectively. Although there was a slight increase in exceedance days in 2021 with a total of 38 exceedance days, that number drops to 18 when accounting for wildfire impacted days⁵.

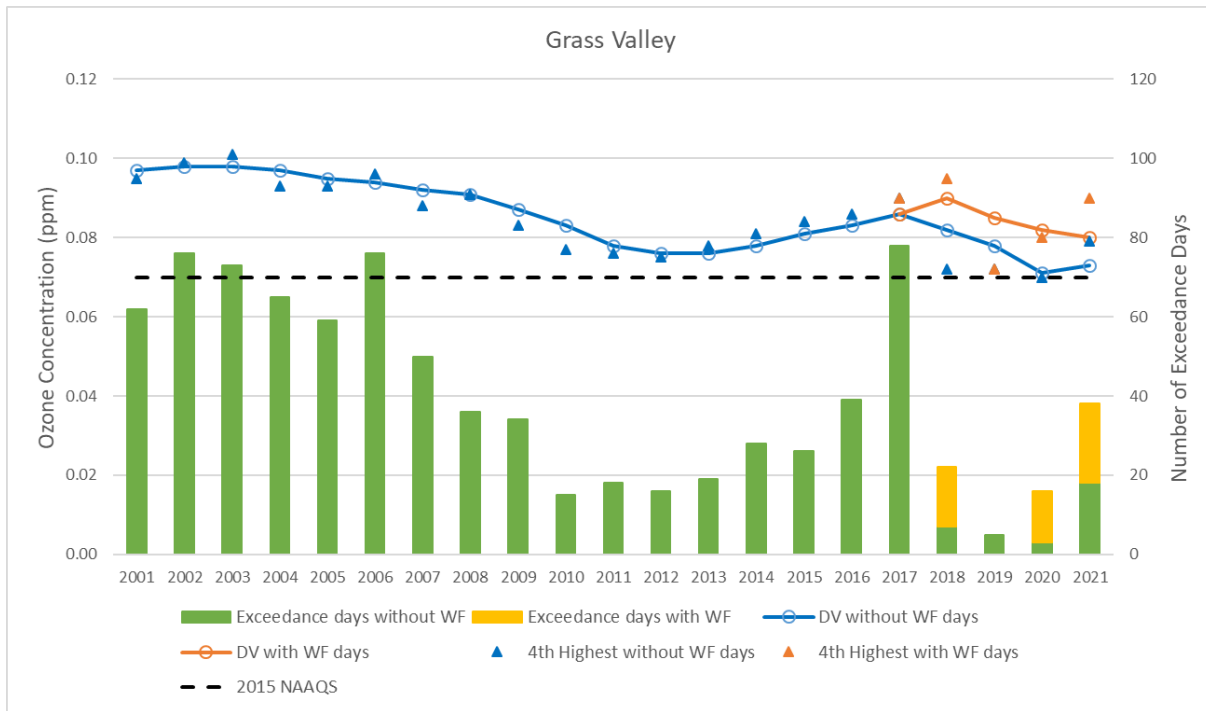
CARB and the District submitted an Exceptional Events Demonstration⁶ to U.S. EPA, requesting exclusion of fire impacted days from the design value calculations for years 2018 and 2020 for purposes of attainment of the 75 ppb ozone standard. U.S. EPA concurred with these findings, and determined Western Nevada County attained the 75 ppb ozone standard by the July 20, 2021 attainment date⁷. The effect of wildfire impacted days on the ozone design values and exceedance days is highlighted in Figure 1.

⁵ Preliminary analysis by CARB staff have identified 20 wildfire impact days in 2021 at the Grass Valley ozone monitoring site.

⁶ California Air Resources Board, Exceptional Events webpage. <https://ww2.arb.ca.gov/our-work/programs/state-and-federal-area-designations/exceptional-events>

⁷ 87 FR 63698, Posted October 20, 2022, "Determinations of Attainment by the Attainment Date, California Areas Classified as Serious for the 2008 Ozone National Ambient Air Quality Standards and Marginal for the 2015 Ozone National Ambient Air Quality Standards", available at <https://www.govinfo.gov/content/pkg/FR-2022-10-20/pdf/2022-22192.pdf>

Figure 1 - Ozone Design Values and Exceedance Days at Grass Valley Monitoring site (ppb)



Source: 2023 Plan, Appendix G

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 Western Nevada County.

The 2023 Plan uses a 2017 baseline inventory; the inventory uses 2017 emissions and activity levels, and inventories for other years are back-cast or forecast from that base inventory. The inventories reflect CARB rules submitted through December 2021. As discussed in Section II 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 milestone year (2023), and attainment year (2026).

On-road motor vehicle emissions were generated using CARB’s mobile source emissions model, EMFAC2017. On-road motor vehicle activity data reflect the 2016 Nevada County Regional Transportation Plan activity data provided by the Nevada County Transportation Commission. Off-road mobile source emissions were generated using CARB’s OFFROAD model. Both models were developed for use in the 70 ppb standard ozone SIP revisions, and represent significant improvements over models used in prior SIP updates.

Table 2 and Table 3 summarize the NOx and ROG emissions in Western Nevada County. Within these categories, recreational boats, off-road equipment, and heavy-duty diesel trucks contribute the largest portions of NOx emissions in the WNNA 2017 baseline inventory.

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

Source Category	2017	2023	2026
Stationary and Area-wide	0.26	0.26	0.25
On-Road Motor Vehicles	1.98	1.15	0.99
Off-Road Vehicles and Equipment	0.90	0.80	0.74
TOTAL	3.13	2.20	1.98

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

Table 3 – Western Nevada County ROG Emissions
(tpd, summer planning inventory)

Source Category	2017	2023	2026
Stationary and Area-wide	2.23	2.45	2.47
On-Road Motor Vehicles	0.86	0.59	0.52
Off-Road Vehicles and Equipment	2.12	1.75	1.55
TOTAL	5.21	4.78	4.54

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

Section III, 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 (2017 for this plan) must be explicitly treated as emissions in the air. Northern Sierra AQMD 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. The Western Nevada County nonattainment area is located within the Mountain Counties Air Basin, but is subject to pollutant transport from the Sacramento Federal Ozone Nonattainment Area and San Francisco Bay Area. The photochemical modeling domain used in the 2023 Plan covers all of California, with a smaller Northern California nested domain of 4 kilometer grids which includes the Western Nevada County ozone nonattainment area 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 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 COVID19 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 2018 and 2020, the prevalence of forest fires during the summer ozone season heavily impacted air quality in Western Nevada County and high ozone concentrations were observed at the Grass Valley 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. Details about fire impact days can be found in the Weight of Evidence analysis in Appendix G 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

guidelines⁸, and recommendations from air quality modeling experts. The model uses emission inventories, with measurements of meteorology and air quality, to establish the relationship between emissions and air quality. The modeling is used to identify the benefits of controlling ozone precursors and the most expeditious attainment date.

The year 2018 was 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 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 and District regulations submitted through February 2020. Photochemical modeling analyses indicate that Western Nevada County will be able to meet the 2026 attainment deadline with currently adopted control measures, which will continue to yield additional emission reductions in future years. No new emission control measures are required for attainment, as existing measures alone provide the necessary control strategy. The Western Nevada County nonattainment area will meet the 70 ppb ozone standard by 2026 with no additional action. Table 4 summarizes the 2026 emissions modeled in the attainment demonstration.

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

2026 Emissions	NOx	ROG
Attainment Emissions Inventory	3.0	1.7

Source: 2023 Plan, Section XI

Further detail on the modeled attainment demonstration is provided in Section XI 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 G 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 Western Nevada County is on track to attain the 70 ppb

⁸ 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

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 Western Nevada County; and that current control measures implemented in Western Nevada 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 2026.

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 C 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_x and ROG prohibitory rules were fully addressed in the Reasonably Available Control Technology (RACT) evaluation adopted by the District Board on January 25, 2021 and approved by U.S. EPA on August 3, 2022⁹. 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_x, 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

⁹ 87 FR 47354, Posted August 3, 2022, "Air Plan Approval; California; Northern Sierra Air Quality Management District; Reasonably Available Control Technology", available at <https://www.govinfo.gov/content/pkg/FR-2022-08-03/pdf/2022-16019.pdf>

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 XI and Appendix E of the 2023 Plan) demonstrates that ozone concentrations in Western Nevada County are overwhelmingly impacted by the transport of ozone and precursor emissions from upwind areas, primarily the Sacramento Federal Ozone Nonattainment Area. Relatively few stationary and areawide source categories in the emission inventory for Western Nevada County report non-zero emissions. As a result, the reduction of NOx and ROG emissions in Western Nevada County will not significantly impact ozone concentrations in the nonattainment area. The District conducted an analyses 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 IX of the 2023 Plan.

C. Modeled Results

Future year design values for the Grass Valley site in the Western Nevada 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 the air quality in Western Nevada County. High ozone concentrations were observed on days affected by forest fires, particularly in 2018, 2020 and 2021. When fire impacted days are excluded in the baseline design value, the projected ozone design value in 2026 is 69.8 ppb. Therefore, the attainment demonstration modeling predicts that Western Nevada County will attain the 70 ppb ozone standard in 2026. Further information on the modeled attainment demonstration is included in Section IX and Appendices D and F 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)
Grass Valley (all days)	86.0	77.7
Grass Valley (fire days excluded)	77.3	69.8

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. For the 70 ppb ozone standard, this year is 2017. Federal law and U.S. EPA guidance requires a three percent per year reduction in ROG emissions from the baseline year, averaged over the first 6 years and then each subsequent 3-year period until the attainment year. Where both ROG and NO_x emissions have been shown to contribute to high ozone levels, the Act allows NO_x emission reductions to augment ROG emission reductions in order to demonstrate RFP.

The 2023 Plan includes an RFP demonstration that meets the Act's requirements based on the baseline year of 2017. The analysis demonstrates that the cumulative ROG and NO_x emission reductions from adopted measures in the current control program in Western Nevada County meets the RFP targets in the 2023 milestone year 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 X 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 rule¹⁰ 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 Western Nevada 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 NO_x 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

¹⁰ 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.

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 V of the 2023 Plan.

C. Contingency Measures

Contingency measures are required by the Clean Air Act to be implemented should an area fail to make RFP or attain the NAAQS 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 needed for RFP and attainment, multiple court decisions over the last few years in the 9th circuit and nation-wide 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_x emissions by 2026.¹¹ 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 national ambient 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 and fully intend to meet the contingency requirement as required by the Clean Air Act.

Additionally, given the limited number of emissions sources under the regulatory authority of Northern Sierra AQMD, and the overwhelming impact of transport on local ozone

¹¹ Source: CARB 2019 CEPAM v1.04; based on 2026 emissions totals.

concentrations, options for additional emissions reduction measures in Western Nevada 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.

The District investigated reasonable potential contingency measures and identified and committed to adopting the CARB Suggested Control Measure for Architectural Coatings. The District determined no other measure would result in larger emission reductions in the nonattainment area. The District also determined no measures could be implemented in the nonattainment area that would achieve the full one year of RFP emissions reductions needed for a contingency measure. The District plans to adopt Rule 230, Architectural Coatings, as its contingency measure to meet SIP requirements for the 70 ppb ozone standard. Further discussion of contingency measures can be found in Section XII of the 2023 Plan.

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 SIP Elements Addressed in Separate Submittals

SIP Element	Submittal Title	Submittal Date
Emissions Statement	Certification of Emissions Statements Rule Adequacy	March 23, 2021
Nonattainment New Source Review	New Source Review Requirements for New and Modified Major Sources in Nonattainment Areas	February 19, 2020
Reasonably Available Control Technology	Evaluation of Adequacy for Reasonably Available Control Technology for the 2015 Ozone Standard and Negative Declarations for Control Techniques Guidelines	March 23, 2021
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	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 NO_x emissions; the program must mandate stationary sources, with emissions over 50 tons per year of NO_x or ROG, report and certify the accuracy of NO_x and ROG emissions annually. District Rule 513, *Emission Statements and Recordkeeping*, addresses this requirement as stated in Section VI of the 2023 Plan. To meet requirements under the 75ppb ozone standard, the District amended District Rule 513 on June 27, 2016 and submitted it to U.S. EPA for inclusion in the California SIP on September 6, 2016. U.S. EPA approved District Rule 513 into the SIP on June 21, 2017. On March 23, 2021, the District submitted the *Certification of Emissions Statements Rule Adequacy*, certifying that Rule 513 meets the Emissions Statement requirements under the 70 ppb ozone standard. U.S. EPA approved the Emissions Statement certification on December 14, 2021.

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 Rule 428, *New Source Review Requirements for New and Modified Major Sources in Nonattainment Areas*, addresses this requirement as stated in Section VII of the 2023 Plan. To meet requirements under the 70 ppb ozone standard, the District amended District Rule 428 on November 25, 2019 and submitted it to U.S. EPA for inclusion in the California SIP on February 19, 2020. U.S. EPA approved District Rule 428 into the SIP on November 20, 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 *Evaluation of Adequacy for Reasonably Available Control Technology for the 2015 Ozone Standard and Negative Declarations for Control Techniques Guidelines* (RACT SIP) and reviewed existing stationary source rules to determine if those rules meet RACT requirements under the 70 ppb ozone standard. The RACT SIP was adopted by the District on January 25, 2021 and submitted to U.S. EPA for inclusion in the California SIP on March 23, 2021. U.S. EPA approved the RACT SIP on August 3, 2022. The RACT SIP concluded that all of the existing SIP-approved District rules meet RACT requirements or are not subject to RACT requirements for the 70 ppb ozone standard, and included negative declarations certifying that no sources are present in the nonattainment area for the applicable CTGs.

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 Western Nevada County nonattainment area does not meet the applicable population threshold for an Enhanced I/M program and only a Basic I/M program is required in the nonattainment area. 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, CARB released the California Smog Check Performance Standard Modeling and Program Certification for the 70 Parts Per Billion (ppb) 8-Hour Ozone Standard on February 10, 2023 for Board consideration 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 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 Western Nevada 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, 1994 California State Implementation Plan, was submitted to U.S. EPA on November 15, 1994, and approved on September 27, 1999¹². 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

¹² 1 64 FR 46849, published on August 27, 1999 and effective on September 27, 1999, Approval and Promulgation of State Implementation Plans; California

regulations include increasingly stringent emission standards for criteria pollutants and greenhouse gases for new passenger vehicles through the 2025 model year.

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 State Implementation Plan is a ministerial activity by CARB for purposes of CEQA (14 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 Board:

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. Direct the Executive Officer to submit the 2023 Plan to U.S. EPA as a revision to the California SIP.