

Appendix J

Triennial Progress Report for State Standards



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Appendix J: Triennial Progress Report for State Standards

J.1 INTRODUCTION

California sets ambient air quality standards for several pollutants, including ozone. California's 1-hour ozone standard is 0.09 parts per million (ppm), and its 8-hour ozone standard is 0.070 ppm. With the exception of the 1-hour and 8-hour ozone standards, the California Air Resources Board (CARB) designated the San Joaquin Valley (Valley) air basin as attainment of each of the state standards pursuant to California Health and Safety Code (CH&SC) Section (§) 40921.5. CH&SC §39607(e) requires CARB to establish and periodically review criteria for designating areas as attainment or nonattainment for the State standards.

The California Clean Air Act (CCAA) requires that areas designated as nonattainment prepare plans to attain these state air quality standards by the earliest practicable date, and then to submit progress reports every three years after the state board's approval of the district's plan.¹ This report, due every three years, also referred to as a triennial report, summarizes progress in meeting the schedules for developing, adopting, and implementing the air pollution control measures contained in each district's plan. In addition to assessing the progress made in the reporting period, the CH&SC also requires air districts designated as nonattainment of state standards to submit attainment plan revisions to correct for deficiencies in meeting the air quality standard and to incorporate new data and projections into the attainment plan.²

Following CARB guidance,^{3,4} this *2022 Triennial Progress Report (Triennial Report)* satisfies requirements of the CH&SC with respect to ozone, and documents progress toward attainment of the state ozone standards. This *Triennial Report* also documents that the *2022 Plan for the 2015 8-Hour Ozone Standard (2022 Ozone Plan)* meets the requirements for the triennial plan update, thus preventing backsliding. This *Triennial Report* demonstrates the District's continued compliance with state requirements for continued progress toward attainment of the state ozone standards and for related triennial progress report requirements over the course of the three-year reporting period of 2018 through 2020. Based on the information and analysis herein, the District continues to make progress toward attainment of the state 1-hour and 8-hour ozone ambient air quality standards.

¹ CH&SC §40911(a) and §40924(b)

² CH&SC §40925

³ CARB. *Guidance for Annual and Triennial Progress Reports under the California Clean Air Act*. Sacramento, CA. (1993, August).

⁴ CARB. *Updated Guidance for Annual and Triennial Progress Reports Under the California Clean Air Act*. Sacramento, CA. (1997, January).

J.2 MEETING STATE REQUIREMENTS FOR PLAN REVISIONS

In combination with this report, the *2022 Ozone Plan*, including appendices, meets the requirements of CCAA §40925 for plan revisions required to show continued progress in attainment of state 1-hour and 8-hour ambient standards for ozone. Table J-1 identifies each of the CCAA requirements and the chapter or appendix in which the information or analyses are located.

Table J-1 CCAA Requirements for Triennial Plan Revisions

Mandate for Severe Areas	Source of Requirement (CH&SC §)	Section in 2022 Ozone Plan or 2022 Triennial Report
Emissions Inventory	40913(a)(4-5)	Appendix B
Air Quality Analysis, including population exposure	40913(a)(1-2)	Chapter 2 Appendix A <i>Triennial Report</i>
Control Measures, including Reasonably Available Control Technology (RACT), Best Available Retrofit Control Technology (BARCT), area and indirect source controls	40913(a)(6-7) 40920(a)(1) 40918(3-4)	Chapter 3 Appendix C <i>Triennial Report</i>
Emission Reductions/All Feasible Measures	40913(a)(6-7) 40914(b)(2)	Chapter 3 Appendix C <i>Triennial Report</i>
Cost-Effectiveness, including a list which ranks the control measures from least to most cost-effective	40922(a-b)	<i>Triennial Report</i>
Reasonably available transportation control measures, reducing passenger vehicle trips and miles traveled	40918(3)	Appendix D
Transport	40912 40913(a)(3)	Chapter 2
Contingency Measures	40915	Chapter 6
Public Education	40918(6)	Chapter 3

J.3 ATTAINMENT BY THE EARLIEST PRACTICABLE DATE

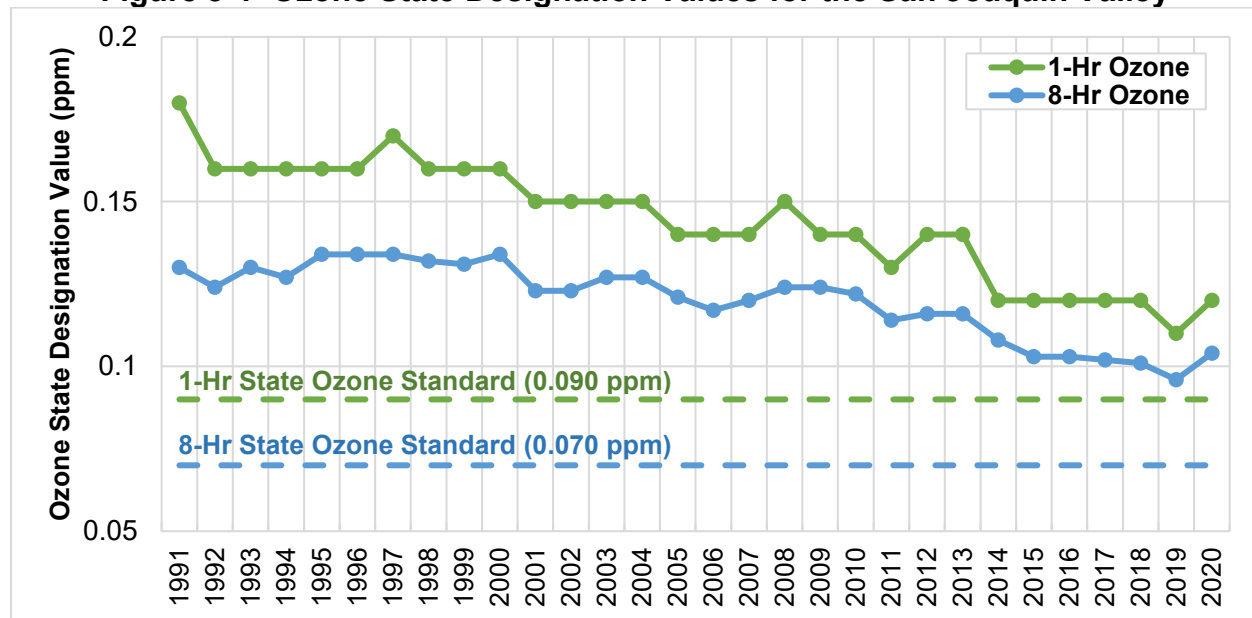
The California Ambient Air Quality Standards (CAAQS) are distinct from the National Ambient Air Quality Standards (NAAQS). The current 8-hour and 1-hour ozone CAAQS are 70 ppb and 90 ppb, respectively. CAAQS are based on designation values, while NAAQS are based on design values. As shown in the *2022 Ozone Plan*, the District will attain the 70 ppb 8-hour ozone level by the attainment year of 2037. Notably, the District's attainment strategy for the NAAQS will contribute to progress toward attainment of the CAAQS.

J.4 AIR QUALITY IMPROVEMENTS

J.4.1 Designation Values for the Valley

Beginning in 1994, the CCAA requires that the District assess progress toward attainment of the State Ambient Air Quality Standards pursuant to CH&SC § 40924(b), to be incorporated into the Triennial Report. To demonstrate the effectiveness of the District's control program, Figure J-1 illustrates ozone air quality trends since 1991 depicting the CAAQS 1-hour and 8-hour ozone designation values.

Figure J-1 Ozone State Designation Values for the San Joaquin Valley



J.4.2 Population Exposure

The CCAA also requires a reduction in overall population exposure to criteria pollutants. Reductions are to be calculated based on per-capita exposure and the severity of the exceedances. This provision is applicable to ozone, pursuant to CH&SC § 40920(c). The definition of exposure is the number of persons exposed to a specific pollutant concentration level above the state standard times the number of hours exposed. The per-capita exposure is the population exposure (units of parts per hundred million (pphm)-person-hours) divided by the total population. This requirement for the specific milestone years listed in the CCAA has been shown to have already been satisfied in previous District triennial reports.

J.5 EMISSION REDUCTIONS

The CCAA requires that each district plan be designed to achieve 5 percent or more cumulative emission reductions per year in the nonattainment area for each covered

nonattainment pollutant or its precursors, averaged every consecutive three-year period (CH&SC § 40914). If this cannot be achieved, a plan may instead show that it has implemented all feasible measures as expeditiously as possible (CH&SC § 40914(b)).

The baseline nitrogen oxide (NO_x) emissions meet the 5 percent averaged every consecutive 3-year average reductions up to 2026 (see Appendix B for emission inventory values). As the NO_x reduction strategy is being implemented, corresponding volatile organic compound emissions (VOC, or also referred to as reactive organic gasses or ROG) emissions are also expected to be reduced. As discussed in Appendix C, this Plan implements all available feasible measures.

J.6 CONTROL STRATEGY AND COST-EFFECTIVENESS RANKING

The District's strategy for reducing ozone pollution to attain the state ozone standards includes adopted strategies from District plans (*2007 Ozone Plan, 2008 PM_{2.5} Plan, 2012 PM_{2.5} Plan, 2016 Plan for the 2008 8-Hour Ozone Standard, 2022 Ozone Plan*) and strategies implemented by CARB. Photochemical modeling for the *2022 Ozone Plan* demonstrates the significant emissions reductions achieved under District's current regulatory control strategy (including several recently-adopted regulations for industrial sources) coupled with CARB's State SIP Strategy will bring the Valley into attainment of the 2015 8-hour ozone standard by the 2037 attainment deadline. The CH&SC⁵ and CARB's guidance for triennial reports directs districts to report actual emissions reductions achieved for each measure scheduled for adoption in the three-year period addressed by each progress report and plan revision. The following table identifies many of the adopted District rules achieving new emissions reductions in and after 2018. In addition to these control measures, pre-2018 emissions reductions also contribute towards the Valley's current and future progress toward attainment.

Table J-2 Adopted District Rules Achieving Reductions from Stationary Sources in and After 2018

<i>District Rules</i>		<i>Date Adopted or Last Amended</i>	<i>Implementation Begins</i>
4103	Open Burning	6/17/2021	2021-2025
4308	Boilers, Steam Generators, and Process Heaters 0.075 to <2 MMBtu/hr	11/14/2013	2015-2034
4311	Flares	12/17/2020	2024
4306/4320	Boilers, Steam Generators, and Process Heaters >5 MMBtu/hr	12/17/2020	2024
4352	Solid Fuel Fired Boilers, Steam Generators and Process Heaters	12/16/2021	2024
4354	Glass Melting Furnaces	12/16/2021	2024, 2030
4601	Architectural Coatings	4/16/2020	2022
4702	Internal Combustion Engines	8/19/2021	2024, 2030
4901	Wood Burning Fireplaces and Wood Burning Heaters	6/20/2019	2019

⁵ CH&SC §40924(b)(2)

District Rules		Date Adopted or Last Amended	Implementation Begins
4905	Natural Gas-Fired, Fan-Type Residential Central Furnaces	12/16/2021	2015-2035
9410	Employer Based Trip Reduction	12/17/2009	Ongoing
9510	Indirect Source Review	12/21/2017	Ongoing
9610	State Implementation Plan Credit for Emission Reductions Generated Through Incentive Programs	6/20/2013	Ongoing

CH&SC §40922 requires that each plan revision include an assessment of the cost-effectiveness of available and proposed control measures. The *2022 Ozone Plan* includes a number of measures committing the District to explore and implement a variety of stationary source emission reduction opportunities. In line with recent developments at the state and federal level, the District's analysis indicates that rules for Leak Detection and Repair (LDAR) in the oil and gas sector may be strengthened through potential enhancements currently under consideration, including lower leak thresholds, more frequent LDAR inspections, use new leak detection technologies, and other potential changes. Many of these potential enhancements are impacted by recent guidance from U.S. EPA, and the District is working closely with CARB and U.S. EPA to evaluate and integrate enhancements into the District's LDAR regulations as appropriate. Additionally, recent state Best Available Retrofit Control Technology analysis indicates potential opportunities for further reducing emissions from crude oil production sumps, particularly with respect to exemption thresholds for sumps and ponds storing produced water. The rule development process for these rules is in progress, and will be completed in 2023/2024 based on the public engagement and interagency consultation processes. These potential enhancements to the District's regulations are included as SIP-strengthening measures. Although the District is including these commitments, the reductions are not needed to demonstrate attainment. Therefore, the District will not be conducting a cost-effectiveness ranking as part of this Triennial Progress Report.

J.7 EMISSIONS TRENDS

The emissions inventory is an estimate of ozone precursor pollutants (ROG and NOx) emitted into the air by sources. The District uses emissions inventory trends to assess progress toward attaining the California ambient ozone standard.

The emissions inventory represents estimates of actual emissions calculated using reported or estimated process rates and emission factors. To derive future-year emissions inventories, emissions from a base year are projected forward in time based on expected growth rates of population, travel, employment, industrial and commercial activity, energy use, as well as reductions from control measures in effect. Appendix B of the *2022 Ozone Plan* details the emissions inventory for each source category within each primary source sector.