

# Staff Report

## Coachella Valley 75 ppb 8-Hour Ozone Reasonable Further Progress State Implementation Plan

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## Executive Summary

On July 20, 2012, the Coachella Valley ozone nonattainment area (Coachella Valley) was designated nonattainment for the 75 parts per billion (ppb) 8-hour ozone national ambient air quality standard (75 ppb ozone standard) with a classification of Severe. To meet Clean Air Act (Act) requirements for the Coachella Valley, the South Coast Air Quality Management District (District) together with the California Air Resources Board (CARB) developed the Coachella Valley 75 ppb Severe ozone State Implementation Plan (Severe SIP), included within the District's 2016 Air Quality Management Plan<sup>1</sup> (2016 AQMP). CARB updated the reasonable further progress (RFP) demonstration and conformity budgets in the 2018 Updates to the California State Implementation Plan (2018 SIP Update). The Severe SIP along with the 2018 SIP Update fulfilled requirements of the Act for a Severe ozone nonattainment area including an attainment demonstration, emissions inventories, RFP demonstration, and corresponding motor vehicle emission budgets (MVEBs). U.S. Environmental Protection Agency (U.S. EPA) approved the Severe SIP including the Coachella Valley portion of the 2018 SIP Update on October 16, 2020.

MVEBs are a required by the Act and are established in SIPs to ensure future transportation activities in the region, such as Regional Transportation Plans (RTPs), do not interfere with attainment or maintenance of air quality standards. To facilitate this, MVEBs set a cap on future emissions from on-road vehicles. The MVEBs for the 75 ppb ozone standard were developed using CARB's on-road mobile source emissions factor model, EMFAC2014.

On August 15, 2019, U.S. EPA approved CARB's updated mobile emission inventory model, EMFAC2017. EMFAC2017 includes updated activity levels and emission rates for on-road heavy-duty vehicles and other mobile sources now available as a result of ongoing CARB staff work. Due to the update with this new information, estimated future year, on-road, mobile source emissions in many areas of the State are higher than estimated in EMFAC2014, including the Coachella Valley even when vehicle miles traveled activity remains the same. To update the Coachella Valley MVEBs with EMFAC2017 and to be consistent with the Coachella Valley 80 ppb 8-hour ozone classification of Extreme, the District is requesting that the Coachella Valley be classified as Extreme for the 75 ppb ozone standard. The new classification requires that the District develop a new SIP that meets the Extreme area requirements including demonstrating attainment by July 20, 2032 and other requirements such as an RFP demonstration and corresponding MVEBs.

To resolve the issues with the MVEBs, on September 16, 2022, the District published the *Request to Reclassify Coachella Valley for the 2008 8-Hour Ozone Standard and the Updated Motor Vehicle Emissions Budgets (Coachella Valley 75 ppb Extreme RFP Plan)* demonstrating that the Coachella Valley meets the emissions inventory and RFP requirements of the Act as an Extreme area for the 75 ppb ozone standard and includes updated corresponding MVEBs. The District will develop the attainment demonstration for the Coachella Valley later in 2023.

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<sup>1</sup> [final2016aqmp.pdf \(aqmd.gov\)](#)

CARB staff has reviewed the Coachella Valley 75 ppb Extreme RFP Plan that the District will consider for adoption on November 4, 2022, and has concluded that it meets the requirements of the Act for RFP, demonstrating that the area will achieve ozone precursor emission reductions of three percent per year from the baseline year of the plan until the attainment year. Furthermore, the MVEBs in the Coachella Valley 75 ppb Extreme RFP Plan are consistent with the RFP demonstration and built upon projections from the latest motor vehicle model, EMFAC2017, such that they will allow transportation agencies to develop plans that conform to the SIP.

## Background

On July 20, 2012, U.S. EPA designated the Coachella Valley as nonattainment for the 75 ppb ozone standard with a classification of Severe.<sup>2</sup> U.S. EPA later promulgated an implementation rule in 2015 to provide additional guidance on SIP requirements under the 75 ppb ozone standard.<sup>3</sup> To fulfill the requirements of the Act in the South Coast Air Basin and the Coachella Valley, the District, in coordination with CARB, prepared the 2016 AQMP. The 2016 AQMP included, among other things, an attainment demonstration showing the Coachella Valley will attain the 75 ppb ozone standard by the Severe deadline of July 20, 2027, an RFP demonstration showing that the Coachella Valley meets the required annual reductions of ozone precursor emissions from the 2016 AQMP baseline year of 2012 to the attainment year, and corresponding MVEBs. CARB adopted the 2016 AQMP on March 23, 2017, and submitted it to U.S. EPA as a revision to the California SIP on April 27, 2017.

In response to Court decisions, on October 25, 2018, CARB adopted the 2018 SIP Update<sup>4</sup>. The 2018 SIP Update revised the RFP demonstration for Coachella Valley to use an RFP baseline year of 2011 instead of 2012. On October 16, 2020, U.S. EPA approved the Severe SIP including the attainment demonstration in the 2016 AQMP and the RFP demonstration in the 2018 SIP Update.

The 2018 SIP Update included MVEBs for the RFP years 2020, 2023 and 2026. MVEBs are required to be part of SIPs under section 176(c) of the Act and are the mechanism for ensuring that transportation planning activities do not exceed on-road emissions in the SIP or contribute to new violations of the 75 ppb ozone standard. Transportation plans and programs produced by transportation planning agencies are required to “conform” to the SIP by demonstrating that the emissions from proposed plans or projects do not exceed the MVEBs established in the SIP. The MVEBs in the 2018 SIP Update were developed using CARB’s on-road mobile source emissions factor model, EMFAC2014.

On August 15, 2019, U.S. EPA approved California’s updated motor vehicle emissions model, EMFAC2017. EMFAC2017 includes updated activity levels and emission rates for on-road heavy-duty vehicles and other mobile sources now available as a result of ongoing CARB staff work. Due to the update with this new information, estimated future year, on-road, mobile source emissions in many areas of the State are higher than estimated in EMFAC2014, including the Coachella Valley even when vehicles miles traveled activity did not change. The increased emissions are primarily due to updated emissions factors reflecting new and improved laboratory and in-use testing data, not from increases in vehicle miles traveled or activity. Consequently, the new modeled vehicular emissions exceed those in the approved MVEB from the Coachella Valley Severe SIP and are no longer consistent with the SIP.

Since transportation plans are now required to estimate emissions using EMFAC2017, demonstrating conformity to the Severe SIP as the most recently approved SIP and budgets is

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<sup>2</sup> 77 FR 30087, <https://www.govinfo.gov/content/pkg/FR-2012-05-21/pdf/2012-11618.pdf>

<sup>3</sup> 80 FR 12264 <http://www.gpo.gov/fdsys/pkg/FR-2015-03-06/pdf/2015-04012.pdf>

<sup>4</sup> *2018 Updates to the California State Implementation Plan (2018 SIP Update) | California Air Resources Board*

no longer possible. This situation results in a “conformity lockdown”, wherein only projects in the current conforming Regional Transportation Plan (RTP) or Federal Transportation Improvement Program (FTIP) and exempt projects can move forward and no new transportation projects can proceed. In the Coachella Valley, the Southern California Association of Governments (SCAG) is the Metropolitan Planning Organization (MPO) that oversees the transportation planning and development. According to SCAG, there are currently \$26 billion in transportation projects within SCAG’s jurisdiction that are being impacted by the current conformity lockdown.

To update the MVEBs with EMFAC2017 and align the classification of the Coachella Valley 75 ppb ozone standard with the existing Coachella Valley 80 ppb ozone classification of Extreme, the District developed the Coachella Valley 75 ppb Extreme RFP Plan. The Coachella Valley 75 ppb Extreme RFP Plan updates the emissions inventories, demonstrates that the Coachella Valley meets RFP as an Extreme area for the 75 ppb ozone standard, and updates MVEBs consistent with the RFP demonstration. On November 4, 2022, the District will consider adoption of the Coachella Valley 75 ppb Extreme RFP Plan. The District will consider the remaining Extreme area requirements including the attainment demonstration in 2023.

## Clean Air Act Requirements

The Coachella Valley 75 ppb Extreme RFP Plan addresses SIP requirements for emissions inventories, an RFP demonstration, and corresponding MVEBs. As an Extreme nonattainment area with an attainment date of July 20, 2032, due to the timing of the ozone season, Coachella Valley will be required to attain the 75 ppb ozone standard in 2031. The additional elements of the Coachella Valley Extreme SIP, including the attainment demonstration, will be developed and submitted to U.S. EPA in 2023.

## Emission Inventory

Emissions inventories are estimates of the amount and type of pollutants emitted into the atmosphere by stationary sources, mobile sources, and areawide sources. They are fundamental components of an air quality plan and serve critical functions for the primary input to air quality modeling used in attainment demonstrations, emissions data used for developing control strategies; and as a means to track progress in meeting the emission reduction commitments. For all ozone standards, emissions inventories are required for the two precursors to ozone, reactive organic gases (ROG) and oxides of nitrogen (NO<sub>x</sub>).

CARB and the District developed a comprehensive and current emissions inventory of ROG and NO<sub>x</sub> in the RFP milestone years consistent with the requirements set forth in Section 182(a)-(f) of the Act. CARB and District staff conducted a thorough review of the inventory to ensure that the emission estimates reflect accurate emissions reports for point sources and that estimates for mobile and areawide sources are based on the most recent approved models and methodologies.

U.S. EPA regulations require two types of inventories in an ozone SIP, a baseline year emissions inventory and forecasted future year emissions inventories. The baseline year emissions inventory for the 75 ppb ozone SIPs is required to be the most recent calendar year of which a

complete triennial inventory was submitted to U.S. EPA at the time designations were finalized. Because designations for the 75 ppb ozone standard were finalized in 2012, the baseline year for the Coachella Valley 75 ppb Extreme RFP Plan is 2011. The forecasted inventories are a projection of the base year inventory that reflects expected growth trends for each source category and emissions reductions due to adopted control measures. For the RFP demonstration, the future years are six years from the baseyear, then every three years until and including the attainment year. For this Coachella Valley 75 ppb Extreme RFP Plan, the future years are 2017, 2020, 2023, 2026, 2029 and the attainment year of 2031. The emissions inventory by category for each of these years is shown in Table 1. See Chapter 5 and Appendix I of the Coachella Valley 75 ppb Extreme RFP Plan for further details.

**Table 1: Emissions Inventory for the Coachella Valley in the RFP milestone years**

	ROG						
Category Name	2011	2017	2020	2023	2026	2029	2031
<b>Stationary Sources</b>	2.31	2.34	2.53	2.68	2.80	2.87	2.90
<b>Areawide Sources</b>	3.58	3.78	4.09	4.11	4.33	4.53	4.71
<b>On-Road Motor Vehicles</b>	5.62	3.64	3.03	2.65	2.41	2.26	2.15
<b>Other Mobile Sources</b>	4.77	3.73	3.51	3.30	3.18	3.09	3.06
<b>Total Coachella Valley</b>	16.27	13.48	13.16	12.75	12.72	12.75	12.81
	NOx						
Category Name	2011	2017	2020	2023	2026	2029	2031
<b>Stationary Sources</b>	0.61	1.08	1.37	1.29	1.27	1.17	1.13
<b>Areawide Sources</b>	0.39	0.29	0.33	0.31	0.30	0.29	0.28
<b>On-Road Motor Vehicles</b>	19.02	10.43	8.33	5.99	5.79	5.71	5.70
<b>Other Mobile Sources</b>	7.46	7.64	7.39	7.05	6.83	6.83	6.84
<b>Total Coachella Valley</b>	27.49	19.45	17.42	14.64	14.19	14.00	13.95

CARB developed the emission forecasts by applying growth and control profiles to the base year inventory. The emissions inventory for the Coachella Valley 75 ppb Extreme RFP Plan was developed using the California Emission Projection Analysis Model (CEPAM), 2022 Emission Projections, Version 1.01 unadjusted baseline inventory. CEPAM 2022 v1.01 is the most updated emission inventory and uses a 2018 base year; the inventory was calibrated to 2018 emissions and activity levels, and the past and future years were backcasted or forecasted from 2018.

The 2011 RFP baseline year inventory and the 2018 base year inventory are consistent with each other as required by the Ozone Rule. For both, stationary source emissions reflect actual emissions reported from industrial point sources. 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 2011 baseline year emissions for areawide and stationary aggregate sources are backcasted from the 2018 base year, relying on the same growth and control methodology as used for future years. 2011 mobile source emissions were modeled using the EMFAC2017 and off-road models. In addition, both inventories are comprehensive, accurate, and current inventory of actual emissions from all sources of the relevant pollutant or

pollutants in each area as required by the Act. See Appendix II of the Coachella Valley 75 ppb Extreme RFP Plan for further details.

## Reasonable Further Progress Demonstration

Sections 172(c)(2) and 182(b)(1) of the Clean Air Act (Act) require ozone attainment plans to provide for RFP. RFP is defined in section 171(1) of the Act as "...such annual incremental reductions in emissions of the relevant air pollutant as are required...for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date." This requirement to demonstrate steady progress in emission reductions between the baseline year and attainment date ensures that areas will begin lowering air pollution in a timely manner and not delay implementation of control programs until immediately before the attainment deadline.

For ozone nonattainment areas designated Serious and higher, section 182(c)(2)(B) of the Act requires that areas demonstrate three percent per year cumulative reduction of ozone precursors, ROG and NO<sub>x</sub>, averaged over each consecutive three-year period from the baseline year, 2011, until the attainment year, 2031. The RFP demonstration as shown in Table 2 shows that cumulative ROG and NO<sub>x</sub> emission reductions in the Coachella Valley meets the RFP targets in the future milestone years of 2017, 2020, 2023, 2026, 2029, and the attainment year, 2031. See Chapter 6 of the Coachella Valley 75 ppb Extreme RFP Plan for further details.

**Table 2: RFP demonstration in milestone years**

Year	2011	2017	2020	2023	2026	2029	2031
ROG emissions	16.27	13.48	13.16	12.75	12.72	12.75	12.81
MVEB Rounding Margin*		0.00	0.00	0.05	0.09	0.04	0.05
Baseline ROG + Rounding Margin		13.48	13.16	12.80	12.81	12.79	12.86
Required % change since 2018		18%	27%	36%	45%	54%	60%
Target ROG Level		13.34	11.88	10.42	8.95	7.49	6.51
Shortfall (-)/ Surplus (+) in ROG		-0.14	-1.28	-2.38	-3.86	-5.31	-6.35
Shortfall (-)/ Surplus (+) in ROG, %		-1%	-8%	-15%	-24%	-33%	-39%
Year	2011	2017	2020	2023	2026	2029	2031
NOx emissions	27.49	19.45	17.42	14.64	14.19	14.00	13.95
MVEB Rounding Margin*		0.00	0.00	0.01	0.01	0.09	0.00
Baseline ROG + Rounding Margin		19.45	17.42	14.66	14.20	14.08	13.95
Change in NOx since 2018		8.04	10.07	12.84	13.30	13.41	13.54
Change in NOx since 2018, %		29%	37%	47%	48%	49%	49%
NOx reductions since 2018 used for ROG substitution in this milestone year, %		1%	8%	15%	24%	33%	39%
Shortfall (-)/ Surplus (+), %		28%	29%	32%	25%	16%	10%
RFP shortfall (-), if any		0%	0%	0%	0%	0%	0%
<b>RFP Met?</b>		<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>	<b>YES</b>

\*adjustment reflects differences in the on-road mobile source emissions projections in the CEPAM inventory and the MVEBs which are individually rounded up to the nearest tenth of a ton per day, and in order to be most conservative, 0.00 values are used when the corresponding MVEB was lower than comparable emissions in CEPAM. Note: numbers may not add up due to rounding

## Motor Vehicle Emissions Budgets

Transportation conformity is the federal regulatory procedure for linking and coordinating the transportation and air quality planning processes through MVEBs established in the SIP. Under section 176(c) of the Act, federal agencies may not approve or fund transportation plans and projects unless they are consistent with MVEBs. Conformity with the SIP in a transportation plan requires that transportation activities do not (1) cause or contribute to new air quality violations, (2) increase the frequency or severity of any existing violation, or (3) delay timely attainment of standard.

The MVEBs in the Coachella Valley 75 ppb Extreme RFP Plan are consistent with the emission inventories for the future RFP milestone years, 2023, 2026, and 2029, and the attainment year of 2031, Table 3 and page 7-3 in the MVEB Plan. The MVEBs will be effective once U.S. EPA determines they are adequate, and subsequent transportation plans and programs produced by SCAG will need to demonstrate that the emissions from the proposed plan, program, or project do not exceed the MVEBs established in the Coachella Valley 75 ppb Extreme RFP Plan.

**Table 3: MVEBs in milestone years**

Milestone Year	2023		2026		2029		2031	
	ROG	NOx	ROG	NOx	ROG	NOx	ROG	NOx
<b>Motor Vehicle Emission Budgets</b>	2.7	6.0	2.5	5.8	2.3	5.8	2.2	5.7

## Conclusion

CARB staff has reviewed the Coachella Valley 75 ppb Extreme RFP Plan that the District will consider for adoption on November 4, 2022, and has concluded that it meets the requirements of the Act for an emissions inventory and for RFP demonstrating that the area will achieve precursor emission reductions of three percent per year from the baseline year of the plan, 2011, until the attainment year, 2031. Further, CARB staff found that the updated MVEBs are consistent with the RFP demonstration.

## 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 may be a “project” that is potentially subject to CEQA requirements.

CARB has determined that the proposed Coachella Valley 75 ppb Extreme RFP 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). Because CARB lacks authority to modify a SIP submittal that fully complies with all federal Clean Air Act requirements, its action here is ministerial.

## Staff Recommendation

If the District adopts the Coachella Valley 75 ppb Extreme RFP Plan as published on September 19, 2022, then CARB staff recommends that the Board adopt the Coachella Valley 75 ppb Extreme RFP Plan and direct staff to submit it to U.S. EPA as a revision to the California SIP.