

# CHAPTER 1

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## Introduction

- PM2.5 levels have improved dramatically in the South Coast Air Basin (Basin) over the past several decades, yet the region still experiences among the highest PM2.5 levels in the nation, leading to significant health issues.
- The Basin is in “serious” nonattainment of the 2012 annual PM2.5 standard and the Clean Air Act requires South Coast AQMD to develop and implement an emission reduction strategy to meet the standard.
- This document is the plan to meet the 2012 annual PM2.5 standard in the Basin by December 31, 2030.
- The emission reductions to be achieved through implementing this plan will assist the Basin in meeting the 2024 annual PM2.5 standard.



## Purpose

The greater Los Angeles area experiences some of the worst air pollution in the nation. While tremendous progress has been made in reducing levels of air pollution over that past several decades, the region still has the highest levels of ozone, and among the highest levels of fine particulate matter (PM2.5) in the country. These air pollutants cause substantial health impacts, including respiratory and cardiovascular disease, worsening asthma symptoms, and premature death.

The federal Clean Air Act (CAA or Act) requires areas that do not meet the health-based National Ambient Air Quality Standards (NAAQS or standards) to develop and implement an emission reduction strategy to attain healthy levels of air quality in a timely manner. The South Coast Air Basin (Basin) fails to meet the 2012 annual PM2.5 NAAQS and is currently classified as a “serious” nonattainment area for that standard. The South Coast Air Basin Attainment Plan for the 2012 Annual PM2.5 Standard (PM2.5 Plan or Plan) provides the strategy and the underlying technical analysis for how the region will meet the 2012 annual PM2.5 NAAQS in the Basin as expeditiously as practicable, but no later than December 31, 2030. This Plan does not address the Coachella Valley as that area already meets the 2012 annual PM2.5 NAAQS. It also does not address attainment of other NAAQS as those are addressed in the 2016 and 2022 Air Quality Management Plans (AQMPs).<sup>1,2</sup>

## Federal 2012 Annual PM2.5 Standard

On December 14, 2012, the U.S. EPA strengthened the primary annual NAAQS for PM2.5 to 12 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).<sup>3</sup> Under the CAA, there are two tiers of nonattainment for areas that fail to meet PM2.5 standards; “moderate” and “serious.” Nonattainment areas are classified by the U.S. EPA into one of these two tiers based on the levels of PM2.5 in the region. Effective April 15, 2015, the U.S. EPA designated the South Coast Air Basin (Basin) as a “moderate” nonattainment area for the 2012 annual PM2.5 NAAQS.<sup>4</sup> Pursuant to Clean Air Act (CAA) Section 189(a)(2)(B), “moderate” nonattainment areas must submit a plan showing how the region will meet the standard by the date required by the CAA, no later than 18 months from the date of designation. “Moderate” nonattainment areas are required to meet the 2012 annual PM2.5 standard as expeditiously as practicable, but no later than the end of the sixth calendar year after the designation (i.e., December 31, 2021) and “serious” nonattainment areas are required to attain the standard as expeditiously as practicable, but no later than the end of the tenth calendar year after the designation (i.e., December 31, 2025). Under CAA Section 188(e), “serious”

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<sup>1</sup> Final 2016 Air Quality Management Plan, <https://www.aqmd.gov/home/air-quality/clean-air-plans/final-2016-aqmp>

<sup>2</sup> 2022 Air Quality Management Plan, <https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan>

<sup>3</sup> National Ambient Air Quality Standards for Particulate Matter, 78 Fed. Reg. 3086 (January 15, 2013)

<sup>4</sup> Air Quality Designations for the 2012 Primary Annual Fine Particle (PM<sub>2.5</sub>) National Ambient Air Quality Standards (NAAQS), 80 Fed. Reg. 2206 (Jan. 15, 2015)

nonattainment areas may request an attainment date extension to no later than the end of the fifteenth calendar year after the designation (i.e., December 31, 2030).

## California Annual PM2.5 Standard

The California Clean Air Act (CCAA),<sup>5</sup> enacted in 1988, provides a framework for air quality planning and established a legal mandate for CARB to achieve health-based state air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide at the earliest practicable date. Although not required by the CCAA, state standards for particulate matter are contained in Title 17 of the California Code of Regulations (CCR).<sup>6</sup> In June 2002, CARB promulgated the state annual average PM2.5 standard of 12 µg/m<sup>3</sup> for which the Basin is designated nonattainment. The CCAA specifies multiple requirements for ozone plans, such as requiring plans to be reviewed every three years, demonstrating plan effectiveness, implementing all feasible measures, reducing population exposure, and ranking control measures by cost-effectiveness.<sup>7</sup> However, these CCAA requirements do not directly apply to PM2.5 plans and no requirements were specified for PM2.5.

## 2016 AQMP

The South Coast AQMD developed the 2016 AQMP as the comprehensive blueprint for how the region will attain five NAAQS – three ozone standards (1979 1-hour, 1997 8-hour and 2008 8-hour), the 2006 24-hour PM2.5 standard and the 2012 annual PM2.5 standard. The 2016 AQMP concluded that attainment by the “moderate” area deadline of December 31, 2021, was impractical and requested reclassification of the Basin to “serious” nonattainment for the 2012 annual PM2.5 standard as provided in the CAA. Accordingly, South Coast AQMD included a “serious” area attainment plan in the 2016 AQMP that demonstrated attainment by December 31, 2025. The 2016 AQMP was adopted by the South Coast AQMD Governing Board on March 3, 2017, and submitted to U.S. EPA for approval on April 27, 2017, via the California Air Resources Board (CARB).

The CAA requires U.S. EPA to determine the completeness of any State Implementation Plan (SIP) submittal within 6 months of receipt and take final action on the submitted SIP by approving or disapproving, either in full or in part, within 12 months of the date the submittal has been deemed complete.<sup>8</sup> Despite the SIP being deemed complete by operation of law on October 27, 2017, U.S. EPA did not act on the PM2.5 “serious” area plan for several years. On December 9, 2020, U.S. EPA reclassified the Basin from “moderate” to “serious” nonattainment for the 2012 annual PM2.5 NAAQS per South Coast

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<sup>5</sup> Health and Safety Code Sections 40910 et seq.

<sup>6</sup> CCR Title 17, § 70200

<sup>7</sup> Health and Safety Code Sections 40913, 40914, 40920, 40922, and 40925

<sup>8</sup> 42 U.S.C. § 7410(k)(1)–(4)

AQMD's previous request, establishing an attainment deadline of December 31, 2025.<sup>9</sup> U.S. EPA committed to evaluate and act on the PM2.5 "serious" area plan through subsequent rulemakings.

## U.S. EPA's Concerns with the 2016 AQMP

Since the adoption of the 2016 AQMP, new challenges emerged that were not considered in the "serious" area plan. In 2015, two near-road monitors were established in the Basin, along the Interstate 710 (I-710) in Long Beach and the California State Route 60 (CA-60) in Ontario. When the U.S. EPA strengthened the annual PM2.5 NAAQS to 12  $\mu\text{g}/\text{m}^3$  on December 14, 2012, it added a requirement to monitor near the most heavily trafficked roadways in large urban areas. Particle pollution is expected to be higher along these roadways as a result of direct emissions from cars and heavy-duty diesel trucks and buses. The South Coast AQMD installed the two required PM2.5 monitors before January 1, 2015. The locations are I-710, located at Long Beach Blvd. in Los Angeles County near Compton and Long Beach; and CA-Route 60, located west of Vineyard Avenue near Ontario, Mira Loma and Upland. At the time of 2016 AQMP adoption, these monitors had not collected sufficient data to establish valid design values, which requires three years of valid data. As a result, the data from the near-road monitors were excluded from the attainment demonstration. By January 1, 2020, these monitors had accumulated sufficient data to establish design values, allowing them to be considered in SIP attainment demonstrations.

Based on 2020–2022 monitoring data, the CA-60 near-road monitoring site had the highest PM2.5 level in the Basin at 13.7  $\mu\text{g}/\text{m}^3$ . This is above the 2012 annual standard of 12  $\mu\text{g}/\text{m}^3$ . U.S. EPA indicated that it could not approve the "serious" area attainment demonstration included in the 2016 AQMP since, at the time the reclassification request was approved, the near-road monitors were eligible to be considered in attainment demonstrations. U.S. EPA subsequently requested a supplemental attainment demonstration that included data from the near-road monitors.

## Need for a New PM2.5 Plan

On January 12, 2023, the Center for Biological Diversity sued U.S. EPA over its failure to act on the "serious" area plan in the 2016 AQMP by the statutory due date. As U.S. EPA indicated that the 2016 plan was no longer approvable, South Coast AQMD submitted a request via CARB on March 29, 2023, to withdraw the 2016 AQMP "serious" area plan for the 2012 annual PM2.5 NAAQS. As a consequence of withdrawal, South Coast AQMD is required to develop a new plan to address attainment of the 2012 annual PM2.5 NAAQS.

While the 2016 AQMP had predicted attainment of the 2012 annual PM2.5 NAAQS by 2025, this PM2.5 Plan requests an attainment date extension to December 31, 2030, as allowed under CAA Section 188(e).

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<sup>9</sup> Approval and Promulgation of Implementation Plans; Designation of Areas for Air Quality Planning Purposes; California; South Coast Moderate Area Plan and Reclassification as Serious Nonattainment for the 2012 PM<sub>2.5</sub> NAAQS, 85 Fed. Reg. 71264 (November 9, 2020)

There are multiple factors contributing to the extension of the attainment date. The addition of the near-road monitors, which were not considered in the 2016 AQMP, is one of the primary reasons for the longer timeframe needed for attainment due to the high levels of PM<sub>2.5</sub> at those monitors. In addition, the attainment strategy in the 2016 AQMP relied on co-benefits from measures to attain the 1997 8-hour ozone standard by 2023 and the 2008 8-hour ozone standard by 2031. Since the submittal of the 2016 AQMP, South Coast AQMD has implemented control measures and achieved emission reductions reflected in the 2016 AQMP attainment demonstration. However, a transition to low emission technologies did not occur across all sources, primarily due to a lack of action at the federal level to address emissions from aircraft, ships, trains, portions of heavy-duty trucks, and off-road equipment. These heavy-duty mobile sources contribute most of the pollution in the region and are subject to federal regulatory authority with limited ability for local regulation. Additional challenges that were not foreseen at the time of 2016 AQMP adoption include unfavorable meteorology, wildfires, increases in emissions in the goods movement sector during the COVID-19 pandemic, and the addition of the near-road monitors.

This PM<sub>2.5</sub> Plan reviews the current status of PM<sub>2.5</sub> air quality from all monitors in the region, develops a new strategy to attain the 2012 annual PM<sub>2.5</sub> NAAQS as expeditiously as practicable, but no later than December 31, 2030, and satisfies all applicable “serious” area requirements.

## Format of This Document

This document is organized into seven chapters, each addressing a specific topic. Each of the chapters is summarized here.

Chapter 1, “Introduction,” includes background on the annual PM<sub>2.5</sub> standard, 2016 AQMP, U.S. EPA’s concerns with the 2016 AQMP, and the need for a new plan to address the standard.

Chapter 2, “Air Quality,” discusses the Basin’s current PM<sub>2.5</sub> air quality in comparison with federal and State health-based air pollution standards and exceptional events.

Chapter 3, “Emissions Inventory,” summarizes the emissions inventory, estimates current emissions by source, and projects future emissions.

Chapter 4, “Control Strategy,” presents the control strategy, specific control measures for stationary and mobile sources, and implementation schedules to attain the 2012 annual PM<sub>2.5</sub> standard by the specified attainment date.

Chapter 5, “Attainment Demonstration,” describes the air quality modeling approach used in the PM<sub>2.5</sub> Plan.

Chapter 6, “Federal Clean Air Act Requirements,” discusses requirements associated with the request to extend the attainment date, the motor vehicle emissions budget, Reasonable Further Progress, quantitative milestones, and contingency measures.

Chapter 7, “Environmental Justice Communities,” describes air quality impacts experienced in environmental justice communities and outlines some of the steps South Coast AQMD is taking to address localized impacts.

Chapter 8, “Public Process and Participation,” describes South Coast AQMD’s public outreach effort associated with development of the PM2.5 Plan.