

**MAG 2025 EIGHT-HOUR OZONE PLAN – SUBMITTAL OF
APPLICABLE MODERATE AREA REQUIREMENTS FOR THE
MARICOPA NONATTAINMENT AREA**

APRIL 2025



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April 2025

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U.S. Environmental Protection Agency**

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List of Acronyms

AD	Attainment Demonstration
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
AIM	Architectural and Industrial Maintenance
AQTAC	Air Quality Technical Advisory Committee
ASP	Aerated Static Pile System
ASU	Arizona State University
CAA	Clean Air Act
CFR	Code of Federal Regulations
CM	Contingency Measures
CO	Carbon Monoxide
CTG	Control Techniques Guideline
EPA	Environmental Protection Agency
ERC	Emission Reduction Credit
FIP	Federal Implementation Plan
FY	Fiscal Year
gpm	grams per mile
I/M	Inspection and Maintenance
LEP	Limited English Proficiency
MAG	Maricopa Association of Governments
MCAQD	Maricopa County Air Quality Department
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NNSR	Nonattainment New Source Review Requirements
NOx	Oxides of Nitrogen
NSR	New Source Review
OTC	Ozone Transport Commission
OTR	Ozone Transport Region
OYW	One Year's Worth
PCAQCD	Pinal County Air Quality Control District
PM2.5	Particulate Matter that has a diameter of less than 2.5 micrometers
ppm	parts per million
PSM	Performance Standard Modeling
RACM	Reasonably Available Control Measures
RACT	Reasonably Available Control Technology
RFP	Reasonable Further Progress
ROP	Rate of Progress
SIP	State Implementation Plan
US	United States
VEIP	Vehicle Emissions Inspection Program
VOC	Volatile Organic Compounds

ES. Executive Summary

Overview

Within the Maricopa Nonattainment Area, the National Ambient Air Quality Standard (NAAQS) has not yet been attained for the 2015 eight-hour ozone standard of 0.070 parts per million (ppm).¹ The area is currently classified as a Moderate Area under the Clean Air Act (CAA). The MAG 2025 Eight-Hour Ozone Plan – Submittal of Applicable Moderate Area Requirements for the Maricopa Nonattainment Area has been prepared to meet applicable Moderate Area CAA requirements that remain in effect regardless of the potential reclassification of the Maricopa Nonattainment Area to Serious for the 2015 ozone standard. A map of the Maricopa Nonattainment Area is shown below in Figure ES-1.

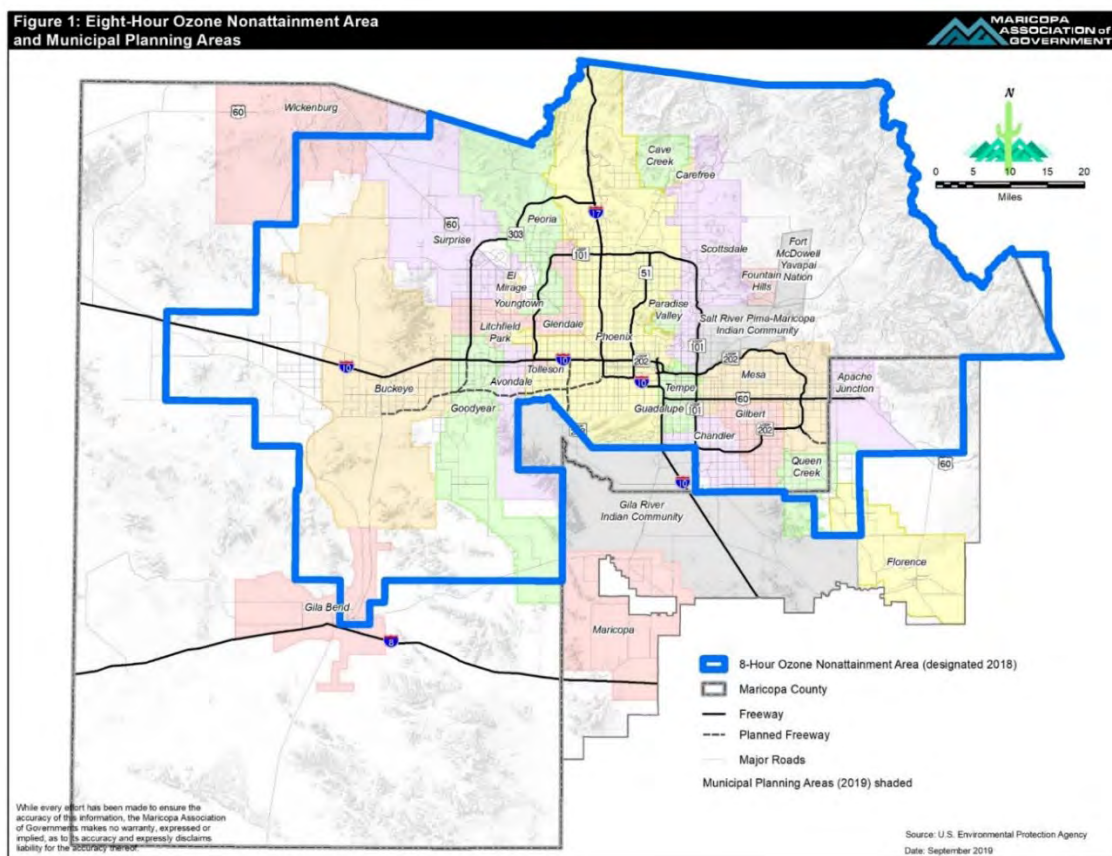


Figure ES-1. 2015 Eight-Hour Ozone Nonattainment Area Boundary.

¹ Note: The effects of uncontrollable emissions from international transport and wildfires on attainment status have not been officially considered or excluded by EPA.

As a complete nonattainment area plan that addresses Moderate Area requirements has not yet been submitted for the Maricopa Nonattainment Area, the area remains subject to an EPA Finding of Failure to Submit notice until applicable Moderate Area requirements are submitted to EPA. Submittal of the MAG 2025 Eight-Hour Ozone Plan, and a subsequent EPA finding that the MAG 2025 Plan meets EPA completeness criteria, will terminate the pending sanctions associated with the prior EPA Finding of Failure to Submit notice.

The MAG 2025 Eight-Hour Ozone Plan addresses applicable Moderate Area CAA requirements including: Reasonably Available Control Technology (RACT) (Chapter 2); Nonattainment New Source Review (Chapter 2); Reasonable Further Progress (RFP) (Chapter 3); Contingency Measures (Chapter 4); and Basic Vehicle Inspection and Maintenance Program (Chapter 5).

Reasonable Available Control Measures and Nonattainment New Source Review

RACT requirements and descriptions of the RACT State Implementation Plan (SIP) revisions that have been, or are being, independently prepared and submitted to EPA by the Arizona Department of Environmental Quality, Maricopa County Air Quality Department, and the Pinal County Air Quality Control District are included. Additionally, an overview of Nonattainment New Source Review (NNSR) implementation and other associated CAA permitting requirements in the Maricopa Nonattainment Area is also included.

Reasonable Further Progress and Rate of Progress Demonstration

In accordance with CAA Section 182(b)(1), a Moderate nonattainment area must have reasonable further progress (RFP) requirements by providing a Rate of Progress (ROP) demonstration that provides for a 15 percent reduction in anthropogenic volatile organic compound (VOC) emissions across the entire nonattainment area over a six-year period. For the Maricopa Nonattainment Area, the ROP demonstration is required to provide a 15% reduction in anthropogenic VOC emissions for the six-year period of 2017 through 2023. Additionally, when a prior approval of a 15% VOC ROP demonstration exists under a previous ozone NAAQS, the 15% VOC ROP demonstration for the 2015 ozone standard can be met with reductions in emissions from the ozone precursors of VOC and/or nitrogen oxides (NO_x). EPA has approved a prior 15% VOC ROP demonstration for the 2008 ozone NAAQS. The EPA approval is associated with a slightly smaller nonattainment area, representing approximately 95% of the current Maricopa Nonattainment Area boundary. A map of the comparison between the Maricopa Nonattainment Area boundaries for the 2008 and 2015 ozone NAAQS is provided below in Figure ES-2.

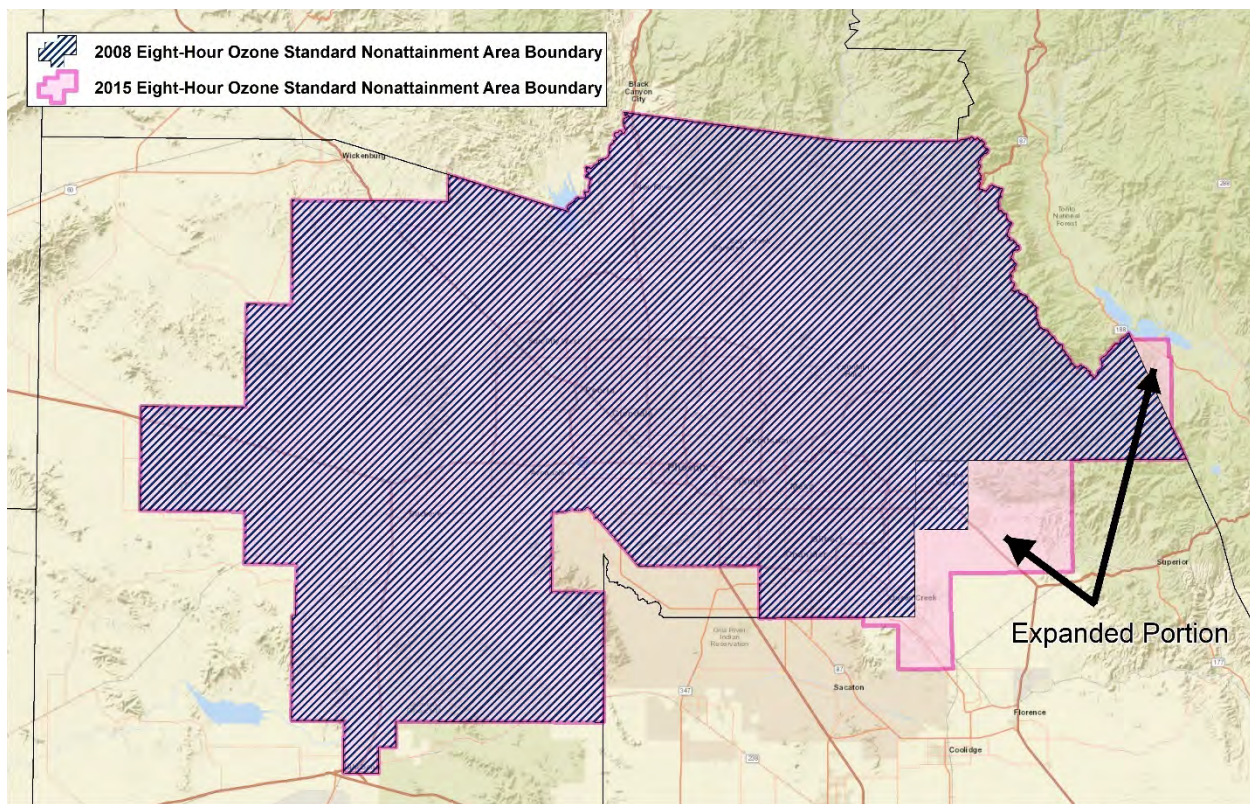


Figure ES-2. Comparison of Maricopa Nonattainment Area Boundaries for the 2008 and 2015 Ozone NAAQS.

As discussed above, 95% of the current Maricopa Nonattainment Area is able to demonstrate and meet the requirements of the 15% VOC ROP demonstration due to ample reductions in NO_x emissions from the 2017 baseline. For the remaining 5% of the nonattainment area that must demonstrate a 15% reduction in VOC-only emissions from the 2017 baseline, once the Maricopa Nonattainment Area is reclassified to a Serious area, a forthcoming Serious area plan will address all remaining reasonable further progress requirements, including the 15% VOC ROP demonstration. A motor vehicle emissions budget for the 2023 reasonable further progress milestone year of 2023 is also included for transportation conformity purposes.

Contingency Measures

Section 172(c)(9) of the CAA requires that the SIP for each nonattainment area “provide for the implementation of specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the [NAAQS] by the attainment date applicable under [part D of title I]” and requires that these measures “take effect without further action by the State or EPA.” Consistent with the text of Section 172(c)(9), these measures must be specific, adopted measures that are ready to be implemented quickly upon failure to meet RFP or failure of the area to meet the standard by its attainment date.

The Maricopa County Air Quality Department has adopted two rules to meet the contingency measure requirements of CAA Section 172(c)(9): Rule 327 – Organic Materials Processing and Rule 335 – Architectural Coatings. These adopted contingency measures will provide emission reductions of 4.343 tons per ozone season day once fully implemented. This amount exceeds the “one year’s worth of RFP” target of 4.196 tons of VOC per ozone season day.

Vehicle Inspection and Maintenance Program

Lastly, the CAA requires the implementation of vehicle Inspection and Maintenance (I/M) programs in ozone nonattainment areas classified as Moderate or higher with the purpose of reducing emissions and improving air quality. These programs help identify vehicles with excess emissions, provide information to assist with diagnosing malfunctions that cause excess emissions, and require repairs of vehicles to bring them into compliance with emissions standards. I/M programs are required to meet certain criteria depending on the assigned performance level, factors such as air quality status, population, and geographic location. This plan includes a modeling demonstration that the I/M program in place within the Maricopa Nonattainment Area exceeds the required EPA performance standards.

1. Overview of the MAG 2025 Eight-Hour Ozone Plan – Submittal of Applicable Moderate Area Requirements for the Maricopa Nonattainment Area

1.1 Introduction

Within the Maricopa Nonattainment Area, the National Ambient Air Quality Standard (NAAQS) has not yet been attained for the 2015 eight-hour ozone standard of 0.070 parts per million (ppm).² The area is currently classified as a Moderate Area under the Clean Air Act (CAA). The Maricopa Association of Governments (MAG) was designated by the Governor of Arizona in 1978 and recertified by the Arizona Legislature in 1992 to serve as the Regional Air Quality Planning Agency to develop plans to address air pollution problems.³ On June 22, 2016, the Governor of Arizona transmitted a letter to the Environmental Protection Agency (EPA) to update the planning certifications (Appendix E). This plan was prepared through a coordinated effort with the Arizona Department of Environmental Quality (ADEQ), Arizona Department of Transportation (ADOT), Maricopa County Air Quality Department (MCAQD), Maricopa Association of Governments, and the Pinal County Air Quality Control District (PCAQCD).

The MAG 2025 Eight-Hour Ozone Plan – Submittal of Applicable Moderate Area Requirements for the Maricopa Nonattainment Area has been prepared to meet applicable Moderate Area CAA requirements that remain in effect regardless of the imminent reclassification of the Maricopa Nonattainment Area to Serious for the 2015 ozone standard. As a complete nonattainment area plan that addresses Moderate Area requirements has not yet been submitted for the Maricopa Nonattainment Area, the area remains subject to an EPA Finding of Failure to Submit notice until applicable Moderate Area requirements are submitted to EPA.⁴ Submittal of the MAG 2025 Eight-Hour Ozone Plan, and a subsequent EPA finding that the MAG 2025 Plan meets EPA completeness criteria, will terminate the pending sanctions associated with the prior EPA Finding of Failure to Submit notice.

² Note: The effects of uncontrollable emissions from international transport and wildfires on attainment status have not been officially considered or excluded by EPA.

³ See Arizona Revised Statutes Section 49-406.A.

⁴ Findings of Failure to Submit State Implementation Plan Revisions for Reclassified Moderate Nonattainment Area for the 2015 Ozone National Ambient Air Quality Standards (NAAQS), 88 Fed. Reg. 71757, October 18, 2023.

1.2 Historical Background

In 2015, EPA strengthened the primary eight-hour ozone standard from 0.075 parts per million (ppm) to 0.070 ppm.⁵ On June 4, 2018, EPA published a final rule to designate the Phoenix-Mesa Nonattainment area, referred to herein as the Maricopa Nonattainment Area, as a Marginal Area for the 2015 eight-hour ozone standard with an August 3, 2021, attainment date.⁶ The boundaries of the ozone nonattainment area for the 2015 ozone standard were expanded slightly from the boundary for the 2008 ozone standard to include the Tonto National Monument monitor in Gila County and the Queen Valley monitor in Pinal County. The eight-hour ozone nonattainment area boundary for the 2015 ozone standard encompasses 5,287 square miles and is included in Figure 1-1.

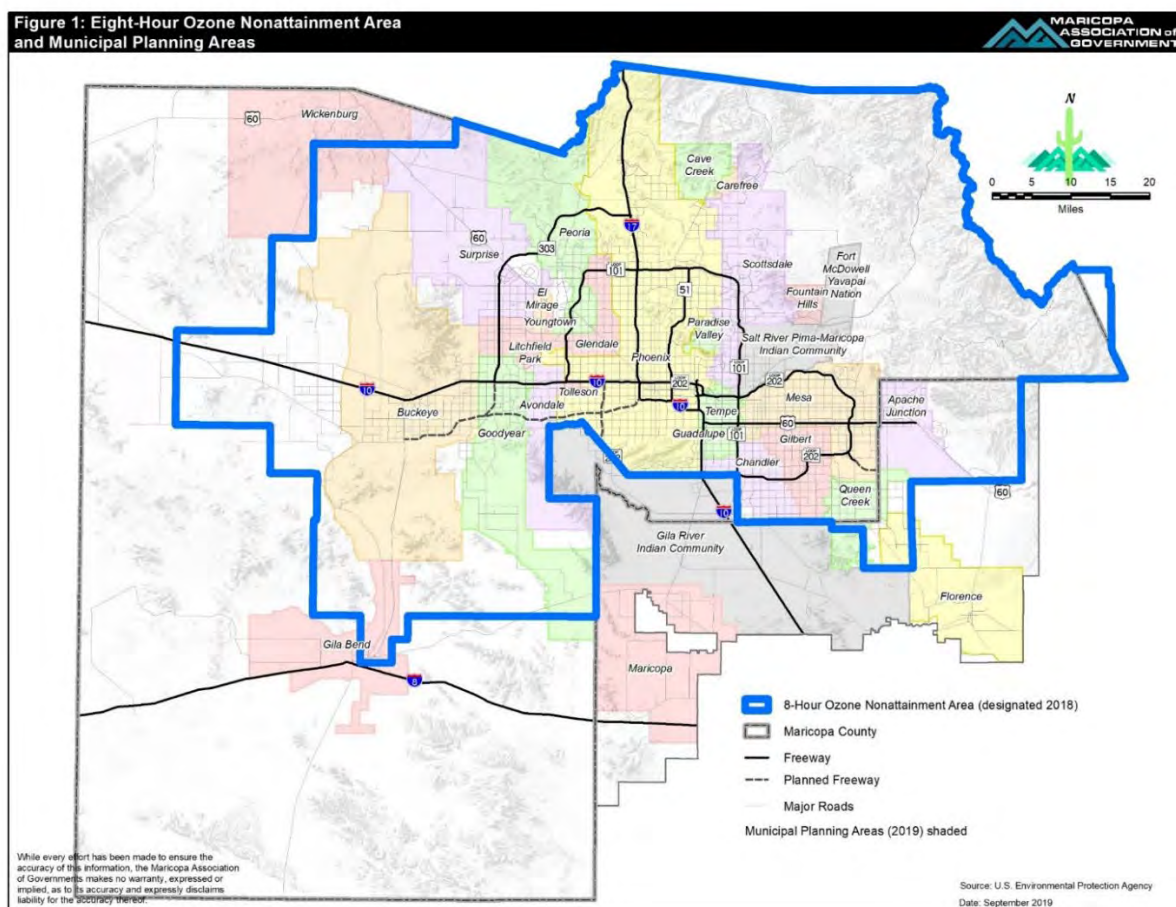


Figure 1-1. 2015 Eight-Hour Ozone Nonattainment Area Boundary.

⁵ National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65292, October 26, 2015.

⁶ Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards, 83 Fed. Reg. 25776, June 4, 2018.

On June 29, 2020, the MAG 2020 Eight-Hour Ozone Plan – Submittal of Marginal Area Requirements for the Maricopa Nonattainment Area was submitted to EPA. On April 5, 2022, EPA published a final rule in the Federal Register to approve the 2017 base year emissions inventory in the MAG 2020 Eight-Hour Ozone Plan.⁷ On October 7, 2022, EPA published a final rule determining that the Maricopa Nonattainment Area failed to attain the 2015 ozone standard by the August 3, 2021, Marginal Area attainment date and reclassified the area to Moderate.⁸ The attainment date for the Moderate Area was August 3, 2024.

On October 18, 2023, EPA published a Finding of Failure to Submit a plan revision addressing Moderate Area requirements for the Maricopa Nonattainment Area by the January 1, 2023, due date.⁹ A Finding of Failure to Submit triggers the imposition of CAA sanctions and Federal Implementation Plan (FIP) requirements. As described in the Finding of Failure to Submit:

“If the EPA has not affirmatively determined that a State has made the required and complete SIP submittal for an area within 18 months of the effective date of the Finding of Failure to Submit, then, pursuant to CAA section 179(a) and (b) and 40 CFR 52.31, the offset sanction identified in CAA section 179(b)(2) will apply in the affected nonattainment area. If the EPA has not affirmatively determined that the State has made the required complete SIP submittal within 6 months after the offset sanction is imposed, then the highway funding sanction will apply in the affected nonattainment area, in accordance with CAA section 179(b)(1) and 40 CFR 52.31. The sanctions will not take effect if, within 18 months after the effective date of these findings, the EPA affirmatively determines that the State has made a complete SIP submittal addressing the deficiency for which the finding was made. Additionally, if the State makes the required SIP submittal and the EPA takes final action to approve the submittal within 2 years of the effective date of these findings, the EPA is not required to promulgate a FIP for the affected nonattainment area.”¹⁰

⁷ Clean Air Plans; Base Year Emissions Inventories for the 2015 Ozone Standards; Arizona; Phoenix-Mesa and Yuma Nonattainment Areas, 87 Fed. Reg. 19629, April 5, 2022.

⁸ Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Areas Classified as Marginal for the 2015 Ozone National Ambient Air Quality Standards, 87 Fed. Reg. 60897, October 7, 2022.

⁹ Findings of Failure to Submit State Implementation Plan Revisions for Reclassified Moderate Nonattainment Areas for the 2015 Ozone National Ambient Air Quality Standards (NAAQS), 88 Fed. Reg. 71757, October 18, 2023.

¹⁰ Ibid.

The purpose of the MAG 2025 Eight-Hour Ozone Plan is to address outstanding applicable Moderate Area CAA requirements that remain in effect, thereby avoiding the imposition of sanctions and a Federal Implementation Plan. In summary, in order to avoid the imposition of sanctions and Federal Implementation Plan requirements EPA must:

- By May 17, 2025, determine the MAG 2025 Eight-Hour Ozone Plan is complete to avoid offset sanctions.
- By November 17, 2025, determine the MAG 2025 Eight-Hour Ozone Plan is complete to avoid highway funding sanctions.
- No later than November 17, 2025, approve the MAG 2025 Eight-Hour Ozone Plan to avoid imposition of a FIP.

1.3 Applicable Moderate Area Requirements for the Maricopa Nonattainment Area.

EPA listed the CAA Section 172, 182(b), and 182(f) nonattainment area plan requirements for Moderate Areas (by state), due by January 1, 2023, in Table 1 of the October 18, 2023, Finding of Failure to Submit notice.¹¹ The listed requirements for the Maricopa Nonattainment Area include:

- Nonattainment New Source Review (NNSR);
- Reasonable Further Progress (RFP);
- Ozone Attainment Demonstration (AD);
- Reasonably Available Control Measures (RACM);
- Reasonably Available Control Technology (RACT);
- Contingency Measures (CM);
- Basic Vehicle Inspection and Maintenance (I/M Basic) Program.

According to recent EPA regulations,¹² the listed requirements above are subject to change once the Maricopa Nonattainment Area is reclassified to Serious. It is expected that EPA will potentially reclassify the Maricopa Nonattainment Area to Serious, as the nonattainment area failed to attain the 2015 ozone standard by the Moderate Area

¹¹ Findings of Failure to Submit State Implementation Plan Revisions for Reclassified Moderate Nonattainment Areas for the 2015 Ozone National Ambient Air Quality Standards (NAAQS), 88 Fed. Reg. 71757, October 18, 2023.

¹² State Implementation Plan Submittal Deadlines and Implementation Requirements for Reclassified Nonattainment Areas Under the Ozone National Ambient Air Quality Standards, 90 Fed. Reg. 5651, January 17, 2025.

attainment date of August 3, 2024, based upon air quality monitoring data from 2021-2023. On January 17, 2025, EPA published a final rule that clarifies which Moderate Area requirements remain in effect after reclassification to Serious:

“Planning requirements applicable to the lower, former classification for the ozone NAAQS continue to be legally required following a change in an area’s classification level, except: (1) the attainment demonstration; (2) RACM; and (3) for areas that are voluntarily reclassified, contingency measures to address failure to attain by the attainment date associated with the prior classification.”¹³

Based on EPA’s final rule as quoted above, the MAG 2025 Eight-Hour Ozone Plan is not required to submit a Moderate Area ozone attainment demonstration or an analysis of reasonably available control measures (RACM) for the Moderate Area attainment date of August 3, 2024, once the area has been reclassified to Serious.¹⁴ The remaining and applicable Moderate Area requirements are listed in Table 1-1. Submission of the requirements in Table 1-1 will satisfy EPA completeness criteria for the remaining and applicable Moderate Area requirements.

Table 1-1. Applicable Moderate Area Requirements.

Applicable Moderate Area Requirement	Addressed in:
Requirements for Reasonably Available Control Technology (RACT) 40 CFR 51.1312	Chapter 2
Nonattainment New Source Review 40 CFR 51.165	Chapter 2
Reasonable Further Progress 40 CFR 51.1310(a)(3)	Chapter 3
Contingency Measures CAA 172(c)(9)	Chapter 4
Basic Vehicle Inspection and Maintenance Program 40 CFR Part 51 Subpart S	Chapter 5

¹³ 90 Fed. Reg. 5651, pg. 5665 (January 17, 2025).

¹⁴ While the EPA has not yet reclassified the Maricopa Nonattainment Area to Serious, it is expected that EPA will reclassify the nonattainment area before EPA takes any action to find the MAG 2025 Eight-Hour Ozone Plan complete or approvable. As such, the requirement for this plan to include a Moderate Area attainment demonstration and a RACM analysis is moot.

2. Requirements for Reasonably Available Control Technology (RACT) and Nonattainment New Source Review Requirements (NNSR)

2.1 Introduction

This chapter addresses the CAA requirements for evaluation and implementation of Reasonably Available Control Technology (RACT) and Nonattainment New Source Review (NNSR) in the Maricopa Nonattainment Area. In regard to the RACT requirements, descriptions of the RACT State Implementation Plan (SIP) revisions that have been, or are being, independently prepared and submitted to EPA, as required under 40 CFR Section 51.102, by the Arizona Department of Environmental Quality, Maricopa County Air Quality Department, and the Pinal County Air Quality Control District are included. Additionally, an overview of Nonattainment New Source Review (NNSR) implementation and other associated CAA permitting requirements in the Maricopa Nonattainment Area is also included.

2.2 Reasonably Available Control Technology (RACT) Requirements

Sections 182(b)(2) and 182(f) of the CAA require Reasonably Available Control Technology (RACT) to be implemented in ozone nonattainment areas classified as Moderate or higher. Additionally, 40 CFR Section 51.1312 requires the State to submit a SIP revision *“that meets the VOC and NO_x RACT requirements in Clean Air Act Sections 182(b)(2) and 182(f)”* for nonattainment areas classified as Moderate or higher.

EPA defines RACT as *“the lowest emission limitation that a particular source is capable of meeting by the application of technology that is reasonably available considering technological and economic feasibility.”*¹⁵ RACT is required for all major sources of VOC and NO_x within the nonattainment area, and for each category of VOC sources in the nonattainment area covered by a Control Techniques Guideline (CTG) issued by the EPA.

Within the Maricopa Nonattainment Area, the Arizona Department of Environmental Quality (ADEQ), the Maricopa County Air Quality Department (MCAQD), and the Pinal County Air Quality Control District (PCAQCD) implement RACT for point and area sources. ADEQ, MCAQD, and PCAQCD are independently preparing RACT SIP submittals that meet the requirements of CAA Section 182(b)(2) and 182(f). The implementation of RACT by ADEQ, MCAQD, and PCAQCD in the Maricopa Nonattainment Area is described below.

¹⁵ State Implementation Plans; General Preamble for Proposed Rulemaking on Approval of Plan Revisions for Nonattainment Areas— Supplement (on Control Techniques Guidelines) 44 Fed. Reg. 53762, September 17, 1979.

2.2.1 RACT in the Gila County Portion of the Maricopa Nonattainment Area

The Arizona Department of Environmental Quality is responsible for evaluation and implementation of RACT within the Gila County portion of the Maricopa Nonattainment Area. For the Gila County portion of the Maricopa Nonattainment Area, ADEQ reviewed all CTG source categories to determine if there are sources in the area and evaluated RACT for non-CTG major sources of VOCs and NO_x. Searches were performed within ADEQ's permits and emission inventory databases to confirm there are no source types in the Gila County portion that would be subject to the CTGs. In addition to ADEQ's internal searches, ADEQ reviewed the EPA's National Emission Inventory, as well as satellite imagery, to confirm there were no sources in any evaluated CTG category. Lastly, ADEQ confirmed through an examination of permitting records and the state's emission inventory records that there are no non-CTG major sources of VOCs or NO_x located in the Gila County portion of the nonattainment area. ADEQ submitted a RACT Analysis and Negative Declarations for the 2015 Ozone NAAQS SIP revision to EPA on March 26, 2025, for source categories subject to CTG and major sources of VOCs or NO_x for the Gila County portion of the Maricopa Nonattainment Area as required.

2.2.2 RACT in the Pinal County Portion of the Maricopa Nonattainment Area

In coordination with EPA Region IX and the Maricopa County Air Quality Department, the Pinal County Air Quality Control District conducted an analysis of permitted sources within the expanded Pinal County portion of the Maricopa Nonattainment Area. The analysis incorporated actual emissions of the permitted facilities and compared them to the Control Technique Guidelines emissions thresholds. The analysis showed that permitted facilities covered under two source categories (gas stations, surface coatings) surpassed the CTG thresholds and needed ozone RACT rules in order to comply with the CAA RACT requirements for Moderate ozone nonattainment areas. There are no major sources of VOC or NO_x located within the Pinal County portion of the expanded nonattainment area.

In tandem with MCAQD's ozone RACT rulemaking, PCAQCD drafted ozone RACT rules for these two source categories in the expanded portion of the Maricopa Nonattainment Area. The PCAQCD rulemaking timeline has the formal process starting with a Notice of Proposed Rulemaking being published in the two local newspapers on January 23, 2025, and January 25, 2025. The rulemaking includes a combined stakeholder meeting for each draft rule, a 30-day public comment period including oral proceedings with the Control Officer and a Public Hearing with the Pinal County Board of Supervisors. The rules were adopted by the Pinal County Board of Supervisors, on March 19, 2025. Upon adoption by the Pinal County Board of Supervisors, the ozone RACT rules State Implementation Plan (SIP) package was submitted to the Arizona Department of Environmental Quality on March 27, 2025. The package will be submitted to EPA by ADEQ in a separate submission expected in the first half of 2025.

2.2.3 RACT in the Maricopa County Portion of the Maricopa Nonattainment Area

The Maricopa County Air Quality Department is responsible for evaluation and implementation of RACT within the Maricopa County portion of the Maricopa Nonattainment Area. In May 2023, the Maricopa County Air Quality Department (MCAQD) submitted the “Reasonably Available Control Technology State Implementation Plan for the 2015 8-hour Ozone Standard” (RACT SIP) to the EPA (See Appendix A).¹⁶ The RACT SIP includes an analysis of all local controls (rules and permit conditions) associated with EPA Control Techniques Guidelines (CTGs) source categories and non-CTG major sources of VOCs and NO_x, i.e., sources that emit or have the potential to emit 100 tons per year of either VOC or NO_x, to determine if the controls implement RACT.

As discussed in the RACT SIP, MCAQD determined three rulemakings were necessary to address RACT requirements in the CAA. Each rulemaking is discussed in further detail below. The three rules were adopted after a public hearing before the Maricopa County Board of Supervisors conducted on September 25, 2024. The rules were then submitted to the EPA via the Arizona Department of Environmental Quality on October 3, 2024.

2.2.3.1 Rule 326 (Steelmaking Operations: Electric Arc Furnaces)

MCAQD created Rule 326 as a result of one non-CTG major steelmaking source for both VOC and NO_x emissions located in the Maricopa County nonattainment area. Provisions implementing VOC and NO_x RACT requirements include a VOC emission limit of 0.77 pounds of VOC per ton of steel from steelmaking operations, a NO_x emission limit of 0.54 pounds of NO_x per ton of steel from steelmaking operations, good work practices for electric arc furnaces and ladle metallurgy stations, good combustion practices for combustion units, and implementation of a scrap management plan.

2.2.3.2 Rule 331 (Solvent Cleaning)

MCAQD revised Rule 331 as a result of a RACT deficiency identified by the EPA. Although Rule 331 was considered as stringent or more stringent than the two associated CTG source categories, it contained an exemption for all operations regulated by National Emission Standards for Halogenated Solvent Cleaning (40 CFR 63, Subpart T). This exemption precluded Rule 331 from satisfying the CAA Section 182(b)(2) RACT requirement. Section 182(b)(2) requires that RACT be implemented through SIP-approved rules and reliance on rules outside the SIP such as a National Emission Standard for Hazardous Air Pollutants (NESHAP) for the implementation of RACT is insufficient. NESHAPs are separate obligations under the CAA and may be less stringent than RACT if

¹⁶ EPA found the RACT SIP submittal complete in a letter from Matthew Lakin, EPA Region IX Acting Air Director, on September 12, 2023.

the NESHAP is outdated. Therefore, the NESHAP exemption was removed to ensure Rule 331 meets RACT.

2.2.3.3 Rule 338 (Semiconductor Manufacturing)

MCAQD revised Rule 338 as a result of one non-CTG major semiconductor manufacturing source for both VOC and NO_x emissions located in the Maricopa County nonattainment area. Due to the semiconductor manufacturing facility being a major source for both VOC and NO_x, Rule 338 was revised to update the VOC provisions while adding NO_x provisions to implement RACT. Provisions implementing VOC RACT include broadening the VOC control applicability from photoresist operations to process tool operations and increasing the overall VOC capture and control efficiency requirement. Provisions implementing NO_x RACT include adding operational and recordkeeping requirements for Point-of-Use Combustion Devices.

2.3 Nonattainment New Source Review (NNSR) Requirements

Section 182(a)(2)(C) of the CAA requires the State to submit a revision that requires permits, in accordance with Sections 172(c)(5) and 173 of the CAA, *"for the construction and operation of each new or modified major stationary source (with respect to ozone) to be located in"* the Moderate nonattainment area.

As explained below, Arizona has nonattainment new source review (NNSR) programs satisfying the requirements of Section 182(a)(2)(C) that apply throughout the Maricopa Nonattainment Area. These programs have been fully approved by EPA and are administered by ADEQ, MCAQD, and PCAQCD.

2.3.1 ADEQ/PCAQCD NNSR Programs

On October 29, 2012, ADEQ submitted a SIP designed to bring the state's new source review (NSR) program, including the state's NNSR regulations, into full compliance with the CAA and EPA rules. EPA initially granted limited approval and limited disapproval of the SIP, because it strengthened the existing SIP but suffered from a number of deficiencies that needed to be corrected before full approval could be granted.¹⁷ On April 28, 2017, ADEQ submitted a SIP revision designed to remedy the deficiencies in the state's major NSR program identified by EPA. In 2018, EPA fully approved this SIP revision except for the omission of a significant rate for ammonia as a precursor for PM-2.5.¹⁸ In the

¹⁷ Revisions to Air Plan; Arizona; Stationary Sources; New Source Review, 80 Fed. Reg. 67319, November 2, 2015.

¹⁸ Air Plan Approval; Arizona; Stationary Sources; New Source Review, 83 Fed. Reg. 19631, May 4, 2018.

proposal for the 2018 action, EPA specifically found that the 2017 revision cured all of the NNSR deficiencies identified in the 2015 limited approval/limited disapproval.¹⁹

ADEQ's 2018 approved NNSR rules included a provision allowing sources subject to NNSR for ozone to offset NO_x emissions increases with VOC decreases and vice versa. Offsetting increases of one precursor with decreases of another is referred to as "interprecursor trading." On January 9, 2021, the United States Court of Appeals for the D.C. Circuit held that interprecursor trading was prohibited by the Clean Air Act and vacated EPA's interprecursor trading provision at 40 CFR 51.165(a)(11)(i).²⁰ On July 19, 2021, EPA promulgated a repeal of that provision as part of an NSR error correction rulemaking. In order to maintain consistency with federal NNSR requirements, ADEQ amended the state's NNSR rules to eliminate the interprecursor trading provision and submitted the amendment, along with other amendments designed to conform the state's rules to the error correction rulemaking, to EPA for approval. EPA approved the submission on April 3, 2024, and specifically found that:

"[W]ith these revisions, the ADEQ's NSR program satisfies the requirements for the preconstruction review and permitting of major sources and major modifications under part D of title I of the Act for areas designated nonattainment with the 2015 ozone National Ambient Air Quality Standards (NAAQS) with a Marginal classification, for areas and sources within the ADEQ's permitting jurisdiction."²¹

Within the Maricopa Nonattainment Area, ADEQ has jurisdiction to issue and enforce air quality permits for all sources in Gila County. ADEQ also has jurisdiction to issue permits for all major sources in Pinal County.²² Thus, ADEQ's fully approved NNSR program applies in the Gila and Pinal County portions of the Maricopa Nonattainment Area.

The only difference between the NNSR requirements for a marginal area and those for a moderate area is that the offset ratios are 1.1 to 1 and 1.15 to 1 respectively.²³ As discussed below, ADEQ's NNSR program establishes an offset ratio of 1.15 to 1 for

¹⁹ 82 Fed. Reg. 25213, pp. 25216-17. The ammonia deficiency, which did not relate to ozone nonattainment, was corrected in a subsequent SIP revision. 86 Fed. Reg. 31927 (June 16, 2021).

²⁰ *Sierra Club v. EPA*, 21 F.4th 815 (Jan. 29, 2021).

²¹ 87 Fed. Reg. 37918, p. 37924.

²² State Implementation Plan Revision New Source Review: Supplemental Information 4-7 (July 2, 2014), "2014 NSR Supplement"; Air Plan Approval; Arizona; Stationary Sources; New Source Review; Ammonia 82 Fed. Reg. 25214, January 10, 2018.

²³ Clean Air Act Sections 182(a)(4), (b)(5); 40 CFR 51.165(a)(9)(A), (B). The major source thresholds are the same. 40 CFR 51.165(a)(1)(iv)(2)(i). No other differences are specified in Clean Air Act Section 182 or 40 CFR 51.165.

moderate areas and therefore satisfies all Clean Air Act Title I, Part D NNSR requirements for moderate ozone nonattainment areas.

ADEQ has delegated administration and enforcement of major NSR permitting, including NNSR to PCAQCD. Under state law, PCAQCD will obtain original jurisdiction over major source permitting, and this delegation will no longer be necessary when the District obtains EPA approval of a County NNSR program.²⁴

2.3.2 MCAQD NNSR Program

In 2022, MCAQD obtained full approval of its current NSR regulations, MCAQD Rules 100, 200, 210, 220, 240, and 241, from EPA. EPA specifically found that these rules satisfy the NNSR requirements of Title I, Part D of the CAA.²⁵ MCAQD has jurisdiction to administer this program under state law.²⁶

The EPA deferred action on Rule 230 and MCAQD subsequently requested withdrawal of Rule 230 from the SIP submittal in December 2023. Rule 100 was revised once again in August 2023 to address an EPA request to revise the definition for “*major source*” and add the definition for “*alternative operating scenario*” in relation to the Title V permit program. Revised Rule 100 was submitted to the EPA on August 23, 2024, and approved into the SIP on April 4, 2024.

MCAQD rules currently include an interprecursor trading provision consistent with former 40 CFR 51.165(a)(11)(i).²⁷ In order to assure that the MCAQD SIP-approved NNSR program was consistent with the D.C. Circuit decision and NSR error corrections rulemaking, ADEQ, at MCAQD's request, withdrew the interprecursor trading provision from MCAQD's 2019 NSR SIP submission. EPA approved this withdrawal and proceeded to approve the remainder of the submission.²⁸ As a result, the SIP-approved NNSR program for Maricopa County does not allow interprecursor trading, and MCAQD does not have authority to grant credit for interprecursor trading when determining whether a source subject to NNSR for ozone has satisfied the offset requirement. MCAQD intends to request permission from the Maricopa County Board of Supervisors in February to amend Rule 240 to eliminate the interprecursor trading provision.

²⁴ 2014 NSR Supplement at 7; A.R.S. § 49-402(A)(1).

²⁵ Approval of Arizona State Implementation Plan Revisions; Maricopa County Air Quality Department; Stationary Source Permits; New Source Review, 87 Fed. Reg. 8418, pp. 8418-19, February 15, 2022.

²⁶ 2014 NSR Supplement at 7.

²⁷ MCAQD Rule 240, Section 304.4.e.(1).

²⁸ 87 Fed. Reg. 8418, pp. 8422-23.

MCAQD rules have been approved as meeting the requirements of Clean Air Act Title I, Part D, and, as noted below, satisfy the offset ratio requirement for moderate areas. The rules therefore satisfy all NNSR requirements for an area designated as nonattainment for the 2015 ozone NAAQS with a moderate classification.

A summary of all current MCAQD NSR rules is in the table below:

Table 2-1. Maricopa County NSR Program Regulations.

Rule Number and Title	Local Revision Date	SIP Approval Date
Rule 100 (General Provisions and Definitions)	8/9/2023	April 4, 2024 (89 Fed. Reg. 23521)
Rule 200 (Permit Requirements)	12/11/2019	February 15, 2022 (87 Fed. Reg. 8418)
Rule 210 (Title V Permit Provisions)	12/11/2019	February 15, 2022 (87 Fed. Reg. 8418)
Rule 220 (Non-Title V Permit Provisions)	12/11/2019	February 15, 2022 (87 Fed. Reg. 8418)
Rule 230 (General Permits)	12/11/2019	Deferred by EPA (87 Fed. Reg. 8418)
Rule 240 (Federal Major New Source Review)	12/11/2019	February 15, 2022 (87 Fed. Reg. 8418)
Rule 241 (Minor New Source Review (NSR))	12/11/2019	February 15, 2022 (87 Fed. Reg. 8418)

2.3.3 Offset Ratio

Section 182(b)(5) of the CAA provides that for "purposes of satisfying the emission offset requirements of [Title I, Part D], the ratio of total emission reductions of volatile organic compounds to total increase[d] emissions of such air pollutant shall be at least 1.15 to 1."

Under Section 182(f)(1), this requirement also applies to NO_x, unless EPA makes one of the findings specified in Section 182(f)(1), (1)(A), or (1)(B) or limits the applicability of Section 182(f)(1) under Section 182(f)(2). Since EPA has not made a finding under Section 182(f)(1) or limited the applicability of Section 182(f)(1) with respect to the Maricopa Nonattainment Area, the offset ratio requirement applies to both VOC and NO_x in the area. The approved ADEQ and MCAQD NNSR programs include regulations imposing an

offset ratio of 1.15 to 1 on emissions of both VOC and NO_x in moderate ozone nonattainment areas and therefore satisfy moderate area offset requirement.²⁹

2.3.3.1 MCAQD Emission Reduction Credit (ERC) Rules

In accordance with CAA Section 182(b)(5), the owner or operator proposing to construct a new major source or proposing to construct a major modification of an existing major source in a nonattainment area is required to obtain emission offsets before the proposed project may commence. MCAQD Rules 203 (Emission Reduction Credit (ERC) General Requirements), 204 (Emission Reduction Credit (ERC) Generation, Certification, and Use), and 205 (Emission Offsets Generated by Voluntary Mobile Source Emission Reduction Credits) were created to establish regulations regarding ERCs.

Rule 203 establishes general ERC requirements including general use, fee, and Arizona Emissions Bank registration requirements. In addition, Rule 203 includes the application and certification provisions for ERCs created through traditional (permitted) sources.

Rule 204 establishes requirements for the generation, certification and use of ERCs from nontraditional (nonpermitted) sources of ERCs. These nontraditional sources include ERCs generated from nonroad equipment and transport refrigeration units. The rule was last revised in December 2019 and MCAQD is currently working with the EPA on rule revisions so the rule can be approved into the Arizona SIP.

Rule 205 establishes requirements for the generation, certification and use of mobile source emission reduction credits. The rule was originally adopted in April 2023 and MCAQD is currently working with the EPA on rule revisions so the rule can be approved into the Arizona SIP.³⁰

2.3.4 Minor New Source Review

In addition to the specific major NSR programs required under Title I, Parts C and D of the CAA, Section 110(a)(2)(C) of the Act requires SIPs to *"include a program to provide for the ... regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved."* EPA refers to 110(a)(2)(C) programs that apply to non-major sources and to

²⁹ See A.A.C. R18-2-404(J), MCAQD Rule 240.304.5(b).

³⁰ On August 22, 2024, EPA published a proposed rule to conditionally approve a revision to Rule 205. Conditional Approval of Arizona State Implementation Plan Revisions; Maricopa County Air Quality Department; Mobile Source Emission Reduction Credits, 89 Fed. Reg. 67919.

minor modifications to major sources as “minor NSR”.³¹ EPA has adopted regulations establishing the basic requirements for minor NSR programs at 40 CFR 51.160 to 51.164.

Both ADEQ and MCAQD have fully approved minor NSR programs satisfying Section 110(a)(2)(C) of the CAA and 40 CFR 51.160 to 51.164.^{32, 33}

Pinal County Air Quality Control District rules currently do not include minor NSR requirements and because of other regulatory priorities, PCAQCD will not be able to adopt minor NSR rules in the near future. In order to fill this regulatory gap, the Arizona Department of Environmental Quality is asserting jurisdiction over the construction and modification of stationary sources subject to, or potentially subject to, minor NSR in Pinal County. The modified delegation agreement, EV25-0019, will be scheduled to go before Pinal County’s Board of Supervisors for approval upon completion of its review by the County Management Delegation requires approval by the Pinal County Board of Supervisor, publication of the proposed delegation in the Arizona Administrative Register, and an opportunity for public comment and a hearing. ADEQ anticipates that this process will be complete by the summer of 2025. At that point, the Arizona Department of Environmental Quality’s EPA-approved minor NSR program will apply to the permitted sources in Pinal County, including the portions of the Maricopa Nonattainment Area, demonstrating full compliance with the CAA New Source Review requirements.

³¹ Review of New Sources and Modifications in Indian Country, 76 Fed. Reg. 38748, July 1, 2011.

³² Air Plan Approval; Arizona; Stationary Sources; New Source Review Updates, 86 Fed. Reg. 31927, June 16, 2021.

³³ Approval of Arizona State Implementation Plan Revisions; Maricopa County Air Quality Department; Stationary Source Permits; New Source Review, 87 Fed. Reg. 8418, February 15, 2022.

3. Requirements for Reasonable Further Progress – 15 Percent Rate of Progress Demonstration

3.1 Introduction

Ozone nonattainment areas are required to achieve reasonable further progress (RFP) toward attainment of the National Ambient Air Quality Standards (NAAQS). The applicable Clean Air Act (CAA) requirements for RFP are summarized in the EPA final rule for implementation of the 2015 ozone standard:

“[O]zone nonattainment areas must achieve RFP toward attainment of the ozone NAAQS, as established in the RFP provisions of subparts 1 and 2 of part D of the CAA. Section 172(c)(2) of subpart 1 requires that nonattainment SIPs must provide for RFP, defined in CAA section 171(1) as “such annual incremental reductions in emissions” as required by CAA part D or as required by the Administrator for ensuring attainment of the NAAQS. Subpart 2 establishes specific percent reduction targets for ozone nonattainment areas. For Moderate and higher classified areas, CAA section 182(b)(1) requires a 15 percent reduction in VOC emissions from the baseline anthropogenic emissions within 6 years after November 15, 1990 (this RFP requirement is also referred to as ROP).”³⁴

In accordance with CAA Section 182(b)(1), a Moderate nonattainment area must provide a Rate of Progress (ROP) demonstration that demonstrates a 15 percent reduction in anthropogenic volatile organic compound (VOC) emissions across the entire nonattainment area over a six-year period. For the 2015 ozone standard, 40 CFR Section 51.1310(b), requires that the baseline anthropogenic emissions inventory used for RFP be the “most recent calendar year for which a triennial inventory is required” at that time of designation as a nonattainment area for the 2015 ozone standard. In this case, the triennial inventory required at the time of designation is for calendar year 2017. Therefore, the ROP demonstration is required to provide a 15% reduction in anthropogenic VOC emissions for the six-year period of 2017 through 2023 in the Maricopa Nonattainment Area.

EPA’s final rule for implementation of the 2015 ozone standard has further interpreted CAA requirements related to the Moderate area 15% VOC ROP demonstration:

“Areas classified Moderate for the 2015 ozone NAAQS that had SIPs previously approved to meet the ROP requirements for the 1-hour, 1997 8-hour or 2008 8-hour ozone NAAQS would be treated like areas covered under CAA section 172(c)(2)...the

³⁴ Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements, 83 Fed. Reg. 63004, December 6, 2018.

EPA continues to interpret CAA section 172(c)(2) as requiring Moderate areas with an approved SIP under the 1-hour ozone NAAQS or prior 8-hour ozone NAAQS to achieve 15 percent ozone precursor (NOx and/or VOC) emission reductions over the first 6 years after the RFP baseline year for the 2015 ozone NAAQS.”³⁵

On June 2, 2020, EPA approved the 15% VOC ROP demonstration for the 2008 ozone NAAQS that was included in the MAG 2017 Eight-Hour Ozone Moderate Plan for the Maricopa Nonattainment Area.³⁶ Therefore, since prior approval of a 15% VOC ROP demonstration exists under a previous ozone NAAQS, the 15% VOC ROP demonstration for the 2015 ozone standard can be met with reductions in emissions from the ozone precursors of VOC and/or nitrogen oxides (NOx).

Additionally, Moderate nonattainment areas with a prior approved 15% VOC ROP demonstration that are allowed (and intend) to substitute NOx emissions reductions for VOC emissions reductions, need to demonstrate that the use of NOx emissions must meet the criteria in CAA Section 182(c)(2)(C).³⁷ The attainment demonstration in the MAG 2017 Eight-Hour Ozone Plan contained a weight-of-evidence photochemical ozone modeling analysis that indicated reductions in NOx emissions are equally or more effective at reducing ozone in the nonattainment area than reductions in VOC emissions.³⁸ This weight-of-evidence analysis meets the requirements of CAA Section 182(c)(2)(C) and justifies the use of NOx emissions reductions in place of VOC emissions reductions.

EPA’s June 2, 2020, approval is associated with the Maricopa Nonattainment Area boundary set for the 2008 ozone NAAQS. When EPA established the Maricopa Nonattainment Area boundary for the 2015 ozone NAAQS, the boundary was expanded slightly to the northeast and southeast from the boundary applicable to the 2008 NAAQS. In this regard, EPA’s regulations at 40 CFR Section 51.1310(a)(3) state that where only a portion of the nonattainment area for the 2015 ozone NAAQS has a previously approved 15% VOC ROP demonstration, use of both VOC and/or NOx emission reductions for the 15% VOC ROP demonstration is limited to the area identical to the boundary for the prior approved demonstration (in this case the boundary of the Maricopa Nonattainment Area

³⁵ Ibid.

³⁶ Clean Air Plans; 2008 8-Hour Ozone Nonattainment Area Requirements; Phoenix-Mesa, Arizona, 85 Fed. Reg. 33571, June 2, 2020.

³⁷ 40 CFR Section 51.1330(a)(2)(i)(B).

³⁸ Page 6-13 of the MAG 2017 Eight-Hour Ozone Plan includes a process analysis which states: “*The analysis results indicated a movement from 2011 VOC-limited conditions in the urban core to 2017 NOx-limited chemistry. This means that NOx emissions controls may be the best mechanism to reduce ozone levels in the nonattainment area in 2017 and beyond.*”

associated with the 2008 ozone NAAQS). EPA's regulations further provide that in such situations, the 15% VOC ROP demonstration can be met by either (1) demonstrating a 15% reduction in VOC-only emissions across the entire nonattainment area for the 2015 ozone NAAQS; or (2) demonstrating that the area associated with the prior nonattainment area boundary can meet the 15% VOC ROP requirement with VOC and/or NO_x reductions, and that the new, expanded portion of the nonattainment area can meet the 15% VOC ROP demonstration using only reductions in VOC emissions. Figure 3-1 displays a comparison between the Maricopa Nonattainment Area boundaries for the 2008 and 2015 ozone NAAQS.

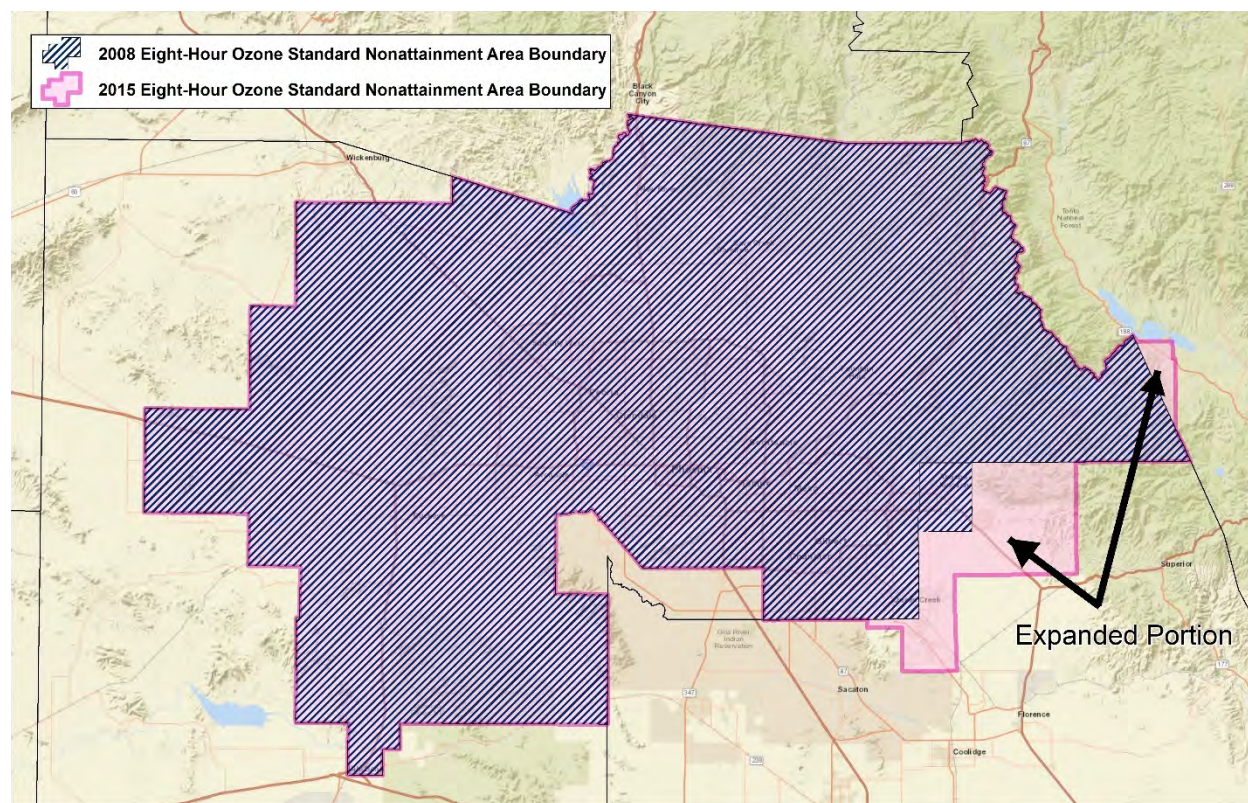


Figure 3-1. Comparison of Maricopa Nonattainment Area Boundaries for the 2008 and 2015 Ozone NAAQS.

The following sections describe how RFP and ROP requirements for the 2015 ozone standard are addressed for the Maricopa Nonattainment Area.

3.2 Baseline and ROP Demonstration Year Emission Inventories

As mentioned in the introduction section above, and as required by 40 CFR Section 51.1310(b), the baseline emissions inventory year for reasonable further progress requirements and the 15% VOC ROP demonstration is 2017 - the most recent calendar year for which a triennial inventory is required at that time of designation as a nonattainment area for the 2015 ozone standard. Since 2017 is the required base year for

the 15% VOC ROP demonstration, 2023 is the year in which the 15% reduction should be demonstrated.

Table 3-1 includes anthropogenic average daily ozone precursor emissions of VOC and NOx (in pounds per day) in the Maricopa Nonattainment Area for the 2017 base year and projected 2023 ROP demonstration year. Details on the development of 2017 base year and 2023 ROP demonstration year emissions are included in Appendix B.

Table 3-1. 2017 and 2023 anthropogenic ozone precursor emissions in the Maricopa Nonattainment Area in pounds per ozone season day.

Emission Category	2017 VOC Emissions	2017 NOx Emissions	2023 VOC Emissions	2023 NOx Emissions
Point	6,016	18,708	4,075	15,284
Nonpoint	183,387	27,443	196,200	22,762
Airports	8,429	16,859	9,828	18,746
Nonroad	40,240	70,023	36,733	43,205
Onroad	97,643	161,488	72,466	79,146
Total Anthropogenic	335,715	294,521	319,302	179,143

3.3 15% VOC Rate of Progress (ROP) Demonstration

Table 3-2 displays the percentage reductions in 2023 total anthropogenic ozone precursor emissions in the Maricopa Nonattainment Area from 2017 baseline emissions. The percentage reduction in NOx emissions is 39.2% in 2023 and the percentage reduction in VOC emissions is 4.9% in 2023.

Table 3-2. Percentage Reductions in 2023 Total Anthropogenic Ozone Precursor Emissions in the Maricopa Nonattainment Area from 2017 Baseline Emissions.

	2017	2023
Total Anthropogenic NOx Emissions (pounds/day)	294,521	179,143
<i>2023 Percentage Reduction in NOx Emissions</i>	39.2%	
Total Anthropogenic VOC Emissions (pounds/day)	335,715	319,302
<i>2023 Percentage Reduction in VOC Emissions</i>	4.9%	

As explained above in Section 3.1, reductions in both ozone precursor emissions of nitrogen oxides (NOx) and/or volatile organic compounds (VOC) can be used to meet the 15% VOC ROP demonstration in the nonattainment area as it has a previously approved 15% VOC ROP demonstration under a prior ozone NAAQS (either the 1-hour or 1997 and/or 2008 8-hour NAAQs). The Maricopa Nonattainment Area has a previously

approved 15% VOC ROP demonstration issued by EPA for the 2008 ozone NAAQS.³⁹ The EPA approval covers the portion of the nonattainment area associated with the 2008 ozone NAAQS. This represents nearly 95% of the area of the current Maricopa Nonattainment Area for the 2015 ozone NAAQS (see Figure 2 above). As such, 95% of the current Maricopa Nonattainment Area for the 2015 ozone NAAQS can demonstrate that it meets the requirements of the 15% VOC ROP demonstration with a 39.2% reduction in NO_x emissions and a 4.9% reduction in VOC emissions in 2023 from the 2017 baseline. For the remaining 5% portion of the nonattainment area that was expanded when the boundary for the 2015 ozone NAAQS was established, current regulations state that only reductions in VOC emissions are used to meet the 15% VOC ROP demonstration requirement.

Several factors should be considered with regard to this new portion of the Maricopa Nonattainment Area. First, the expanded portion of the Maricopa Nonattainment Area has vastly lower overall emissions than the rest of the area, yet even with such comparatively lower emissions, measuring a 15% reduction in VOC emissions from a 2017 baseline is still not possible with existing controls.

Second, it is important to note that if the current Maricopa Nonattainment Area for the 2015 ozone NAAQS had been in existence in years prior to 2017, a 15% reduction in VOC-only emissions could have been demonstrated for the entire current nonattainment area with an earlier baseline year. Specifically, the 1990 revisions to the CAA originally established 1990 as the baseline year for meeting the 15% VOC ROP demonstration. Considering VOC emissions trend data published by EPA for the state of Arizona, Arizona as a whole has reduced 2023 anthropogenic VOC emissions by **64.3%** from the 1990 baseline.⁴⁰ Thus, a 15% reduction in VOC-only emissions for the Maricopa Nonattainment Area would be self-evident. In fact, such a reduction could have been demonstrated multiple times, using different base years since 1990.

Finally, more recent EPA National Emissions Inventory (NEI) data was accessed to isolate county-specific VOC emissions to the three counties that are a part of the current Maricopa Nonattainment Area (Gila, Maricopa and Pinal).⁴¹ This data demonstrates that

³⁹ Ibid.

⁴⁰ EPA-estimated Arizona VOC emissions trend data available at: <https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data> ("National and State CAPS Trends by Tier 1 and EIS Sector" spreadsheet accessed in December 2024. VOC emissions from biogenic sources, wildfires and prescribed fires were excluded to generate anthropogenic totals of 339,360 tons in 1990 and 121,180 tons in 2023).

⁴¹ National Emissions Inventory VOC emissions data for years 2011, 2014 and 2017 in Gila, Maricopa and Pinal counties accessed here: <https://www.epa.gov/air-emissions-inventories/get-air-emissions-data-0> in

if a baseline year of 2011 is used for the 15% VOC ROP demonstration, 2017 percentage reductions of 15.22% for VOC-only emissions are produced for the sum of anthropogenic VOC emissions in Gila, Maricopa and Pinal counties. It is notable that 2011 was the base year used in EPA's prior approval of the 15% VOC ROP demonstration for the 2008 ozone standard nonattainment area. Had the current Maricopa Nonattainment Area boundary for the 2015 ozone NAAQS been established in 2011, the nonattainment area could have met the 15% VOC-only ROP requirement by the six-year ROP demonstration year of 2017. Consequently, the reason the current Maricopa Nonattainment Area cannot demonstrate the 15% VOC-only ROP requirement is because of the later 2017 base year.

Since the expanded portion of the nonattainment cannot currently demonstrate VOC-only reductions of 15% by 2023 using a 2017 baseline, the analysis shifts to demonstrating a 15% reduction in VOC emissions as soon as practicable. As mentioned in Chapter One, the Maricopa Nonattainment Area for the 2015 ozone standard will imminently be reclassified to Serious due to failure to attain by the Moderate area attainment date of August 3, 2024. A new plan is currently being developed by MAG to meet CAA Serious area ozone requirements and demonstrate attainment of the 2015 ozone NAAQS by August 3, 2027. That plan will include a reasonable available control measures (RACM) analysis as required by 40 CFR Section 51.1312(c), which states that:

"the state shall submit with the attainment demonstration a SIP revision demonstrating that it has adopted all RACM necessary to demonstrate attainment as expeditiously as practicable and to meet any RFP (Reasonable Further Progress) requirements. The SIP revision shall include, as applicable, other control measures on sources of emissions of ozone precursors located outside the nonattainment area, or portion thereof, located within the state if doing so is necessary or appropriate to provide for attainment of the applicable ozone NAAQS in such area by the applicable attainment date."⁴²

It is clear from this requirement that a RACM analysis is intended to address both attainment demonstration and reasonable further progress requirements, such as the 15% VOC ROP demonstration – demonstrating the Clean Air Act's intent that reasonable further progress and attainment demonstrations are linked. As discussed, and explained in Chapter One, according to EPA, a Moderate area RACM analysis is no longer required to be submitted with this plan as the Maricopa Nonattainment Area failed to attain by the

December 2024. VOC emissions from biogenic sources, wildfires and prescribed fires were excluded to generate anthropogenic totals for the three counties of 94,397.56 tons in 2011 and 80,028.34 tons in 2017.

⁴² Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements, 83 Fed. Reg. 63035, December 6, 2018.

August 3, 2024, attainment date and the Maricopa Nonattainment Area will soon be reclassified by EPA to a Serious area. Without the results of the RACM analysis to be included in the forthcoming Serious area plan, it is currently not possible to know the quickest year for which the Maricopa Nonattainment Area can meet a VOC-only emissions reduction of 15% from a 2017 baseline year.⁴³ Without pre-judging the results of the forthcoming Serious area plan RACM analysis, it is likely the earliest the nonattainment area may demonstrate a 15% reduction in VOC-only emissions from the 2017 baseline will be 2026, as this is the year new RACM control measures must be adopted and in place in order to be creditable towards an attainment demonstration for the August 3, 2027, attainment date. However, without the results of a complete RACM analysis, it is not possible to currently provide an accurate date for when the nonattainment area will demonstrate a 15% reduction in VOC-only emissions.

In summary, 95% of the current Maricopa Nonattainment Area is able to demonstrate and meet the requirements of the 15% VOC ROP demonstration due to ample reductions in NOx emissions from the 2017 baseline. For the remaining 5% of the nonattainment area that must demonstrate a 15% reduction in VOC-only emissions from the 2017 baseline, once the Maricopa Nonattainment Area is reclassified to a Serious area, a forthcoming Serious area plan will address all reasonable further progress requirements, including the 15% VOC ROP demonstration. The results of the Serious area RACM analysis and the adoption of committed control measures will determine how quickly a 15% reduction in VOC-only emissions from a 2017 baseline can be achieved in the small portion of the nonattainment area where it is required.

3.4 RFP Motor Vehicle Emissions Budget for Transportation Conformity

In accordance with the CAA, conformity requirements are intended to ensure that transportation activities do not result in air quality degradation. Section 176(c) of the Amendments requires that transportation plans, programs, and projects “conform” to applicable air quality plans before the transportation action is approved by a metropolitan planning organization (MPO). MAG is the designated MPO for the Maricopa Nonattainment Area.

Conformity to an implementation plan means that proposed activities must not (1) cause or contribute to any new violation of any standard in any area, (2) increase the frequency or severity of any existing violation of any standard in any area, or (3) delay timely

⁴³ A RACM analysis is multi-faceted and includes evaluation of the technical and economic feasibility of available measures. It would not be appropriate to assume the outcome of that analysis and arbitrarily assign a year in which the 15% VOC-only ROP demonstration could possibly occur as part of this plan submittal.

attainment of any standard or any required interim emission reductions or other milestones in any area. EPA transportation conformity regulations establish criteria involving comparison of projected transportation plan emissions with the motor vehicle emissions assumed in applicable air quality plans. The regulations⁴⁴ define the term "motor vehicle emissions budget" as meaning,

"that portion of the total allowable emissions defined in the submitted or approved control strategy implementation plan revision or maintenance plan for a certain date for the purpose of meeting reasonable further progress milestones or demonstrating attainment or maintenance of the NAAQS, for any criteria pollutant or its precursors, allocated to highway and transit vehicle use and emissions."

The MAG 2025 Eight-Hour Ozone plan establishes a motor vehicle emissions budget for the RFP milestone year of 2023 based on the onroad emissions included in Table 3-1 and subsequently displayed below in Table 3-3.

Table 3-3. Motor Vehicle Emissions Budget for 2023 RFP Milestone Year.

Motor Vehicle Emissions Budget for 2023 RFP Milestone Year	NO_x	VOC
Onroad emissions (metric tons/day)	35.9	32.9

⁴⁴ 40 CFR Section 93.101.

4. Contingency Measures – CAA 172(c)(9)

4.1 Clean Air Act Requirements and EPA Guidance

Section 172(c)(9) of the Clean Air Act requires that the SIP for each nonattainment area,

“provide for the implementation of specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the [NAAQS] by the attainment date applicable under [part D of title I]” and requires that these measures *“take effect without further action by the State or EPA.”*

Consistent with the text of Section 172(c)(9), these measures must be specific, adopted measures that are ready to be implemented quickly upon failure to meet RFP or failure of the area to meet the standard by its attainment date.

EPA provided guidance on the Section 172(c)(9) contingency measure requirement in an interpretative document entitled “State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990”.⁴⁵ As EPA explained in the General Preamble,

*“contingency measures should, at a minimum, ensure that an appropriate level of emission reduction progress continues to be made if attainment [or] RFP is not achieved and additional planning by the State is needed”.*⁴⁶

The CAA does not specify how many contingency measures are required or the magnitude of emission reductions that must be provided by these measures. However, with respect to the level of emission reductions associated with contingency measures, EPA has recommended that states consider *“the potential nature and extent of any attainment shortfall for the area”* and the amount of actual emission reductions required by the SIP control strategy to attain the standards.⁴⁷ The contingency measures are to be implemented if the area does not meet reasonable further progress (RFP) or attain the standards by the attainment date and should represent a portion of the actual emission reductions necessary to bring about attainment in the area.⁴⁸ Accordingly, EPA has historically issued recommendations that the emission reductions anticipated by the contingency measures should be equal to approximately one year’s worth of emission

⁴⁵ State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, 57 Fed. Reg. 13498, (“General Preamble”), April 16, 1992.

⁴⁶ Ibid.

⁴⁷ Addendum to the General Preamble, 59 Fed. Reg. 42015 and 72 Fed. Reg. 20586, 20643.

⁴⁸ Ibid.

reductions needed to achieve RFP for the area, or approximately 3% of the baseline emissions inventory.⁴⁹

The most recent EPA guidance (non-binding) issued on December 3, 2024, addressing the contingency measures requirement of CAA Section 172(c)(9) (herein referred to as the “2024 Guidance”) amends EPA historical guidance and recommends that contingency measures should provide for ozone precursor (volatile organic compounds (VOC) and nitrogen oxides (NOx) emission reductions equal to one year’s worth (OYW) of progress.⁵⁰ OYW of progress in the 2024 Guidance is defined and calculated by a formula that determines the linear rate of progress in ozone precursor emissions (both VOC and NOX) between the base year emissions inventory and the attainment year inventory. However, since the MAG 2025 Eight-Hour Ozone plan does not, and is not required (as discussed in Chapter 1), to contain an attainment year inventory, the 2024 Guidance and formula for OYW of progress cannot be utilized.⁵¹ Therefore, for the MAG 2025 Eight-Hour Ozone Plan, the contingency measures included in the plan are designed to meet the long-standing EPA recommendation to reduce emissions equivalent to one year’s worth of RFP or approximately 3% of baseline year emissions.

4.1.1 One Year’s Worth of RFP

As discussed in Chapter 3, and as required by 40 CFR Section 51.1310(b), the baseline emissions inventory year for reasonable further progress (RFP) requirements and the 15% VOC ROP demonstration is 2017. Additionally, the 15% VOC rate of progress (ROP) requirement requires a 15% reduction in VOC emissions by 2023 in order to meet reasonable further progress (RFP) requirements. Under this scenario, one year’s worth of RFP in order to meet the 15% VOC ROP requirement equates to a reduction in 2017 baseline anthropogenic VOC emissions of 2.5%.⁵²

⁴⁹ Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements 83 Fed. Reg. at 63026. See also “Guidance on Issues Related to 15 Percent Rate-of-Progress Plans,” Memorandum from Michael H. Shapiro, Acting Assistant Administrator for Air and Radiation. August 23, 1993.

⁵⁰ “Guidance on the Preparation of State Implementation Plans Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter,” Joseph Goffman, U.S. Environmental Protection Agency, Assistant Administrator, Office of Air and Radiation, December 3, 2024.

⁵¹ An attainment inventory is the emissions inventory associated with the year in which the nonattainment area attains, or models attainment, of the 2015 ozone NAAQS. Since the Maricopa Nonattainment Area has already failed to meet the Moderate area attainment date of August 3, 2024, an attainment inventory for the year 2023 is moot, and is no longer required once the area is reclassified to a Serious area.

⁵² A reduction of 15% over 6 years (2017-2023) is equal to 2.5% per year (15%/6 years).

Table 3-1 in Chapter 3 lists total 2017 anthropogenic VOC emissions of 335,715 pounds per ozone season day. Multiplying total 2017 anthropogenic VOC emissions by 2.5% provides a target of 8,393 pounds of VOC per day, or 4.196 tons of VOC per ozone season day. Therefore, one year's worth of RFP is equal to 4.196 tons per ozone season day. As an alternative metric, multiplying total 2017 anthropogenic VOC emissions by 3% equals 10,071 pounds of VOC per ozone season day, or 5.036 tons of VOC per ozone season day.

4.1.2 Time Period to Achieve One Year's Worth of RFP

The 2024 Guidance does provide new recommendations from EPA on the time allowed for contingency measures to achieve one year's worth of progress. The 2024 Guidance concluded that emissions reductions from contingency measures should generally occur within a year of the triggering event because of the intended purpose of contingency measures to provide emissions reductions to bridge the gap between the failure to attain or meet RFP and the subsequent corrective action.

In light of the fact that the CAA does not specify the timing nor explicit targets for achieving the contingency measure emissions reductions, the 2024 Guidance provides for an alternative approach to the timing of emission reductions from contingency measures, especially where there are insufficient measures available to achieve sufficient emissions reductions over a 1-year period. If an air agency elects to adopt contingency measures that will require more than one year from the triggering event to provide the full amount of necessary reductions, then an agency should provide an adequate explanation of why the reductions could not be achieved within the first year and how much additional time is needed (up to 1 additional year).⁵³

Where partial implementation of a measure is feasible in the first year following triggering of a contingency measure, but further implementation is feasible in the second year (e.g., a phased-in control measure), the same reasoning applies. The 2024 Guidance provides that it could be appropriate for the reductions in both years to count toward the OYW of progress showing (in this case OYW of RFP), but the agency should adequately explain and document the basis for the inability to fully realize the reductions of the measure in 1 year.

4.2 Adopted Contingency Measures

Based on the CAA Section 172(c)(9) requirements and historical EPA guidance, potential measures were evaluated that could be implemented quickly and achieve ozone precursor emission reductions equivalent to at least one year's worth of RFP. These contingency

⁵³ "Guidance on the Preparation of State Implementation Plans Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter," Joseph Goffman, U.S. Environmental Protection Agency, Assistant Administrator, Office of Air and Radiation, December 3, 2024.

measures are above and beyond the adopted RACT measures described in Chapter 2. The Maricopa County Air Quality Department (MCAQD) has adopted two contingency measures to address Section 172(c)(9) of the CAA as described below. These measures were submitted to EPA for approval on December 17, 2024, by the Arizona Department of Environmental Quality (See Appendix C).

4.2.1 Maricopa County Rule 327 (Organic Material Processing)

Rule 327 (Organic Material Processing) is a new rule created by MCAQD as a contingency measure. It was adopted by the Maricopa County Board of Supervisors on December 11, 2024. It will become effective subsequent to the EPA making a determination that either the Maricopa Nonattainment Area failed to attain the 2015 ozone NAAQS by the attainment date or failed to make reasonable further progress. Due to the rule containing a compliance schedule of 180 days, provisions of the rule will become effective 180 days after the EPA determination.

Organic material processing includes organic material composting, stockpiling of small organic material, or any combination thereof. These processes are known to produce VOC emissions through controlled or inadvertent biological decomposition of organic materials that contribute to ground-level ozone formation. Provisions in Rule 327 establish operational requirements for both stockpiling and composting to minimize VOC emissions from such activities.

Stockpiling requirements for an organic material processing operation include four compliance options that must be implemented within 10 consecutive days of receipt of the organic material. The owner or operator must either remove the organic material from the facility, start the active phase of composting, cover the organic material with a waterproof cover, or demonstrate a moisture content of less than 40% through a moisture test listed in the rule.

Composting requirements for an organic material composting operation include a tiered approach for emission controls based on the throughput of the operation. These requirements are applicable during the active phase of composting as defined in the rule. An operation with a throughput of less than 10,000 tons per year must ensure each pile contains sufficient moisture before turning and must apply a finished compost cover upon initial pile formation. An operation with throughput of greater than 10,000 tons per year must comply with one of two compliance options in the rule. Under the first compliance option, the operation must ensure each pile contains sufficient moisture before turning and must apply a finished compost cover upon initial pile formation and within three hours after each subsequent turning. Under the second compliance option, the operation must operate an aerated static pile system (ASP) with a biofilter per the requirements in the rule.

4.2.1.1 Composting Emission Factors and Control Measures

MCAQD hired Arizona State University (ASU) to conduct a literature review to identify uncontrolled emission factors for composting and potential control measures. The report identified three uncontrolled VOC emission factors for composting, and ten control measures to reduce composting emissions. The uncontrolled VOC emission factors and the composting control measures specified in Rule 327 are listed in Tables 4-1 and 4-2, respectively.⁵⁴

For the purposes of emission calculations, composting operations use greenwaste and food waste, while co-composting operations use greenwaste mixed with manure, biosolids, or poultry litter. In addition to emissions that occur during active composting and active co-composting, additional emissions occur while material is stockpiled, before the active composting pile is formed.

Table 4-1. Uncontrolled VOC emission factors for stockpiling and composting.

Process	Emission Factor	Units
Stockpile	0.20	lb/wet ton/day
Composting	3.58	lb/wet ton
Co-Composting	1.78	lb/wet ton

The basic control options for composting are ensuring proper moisture content prior to turning piles, application of a finished compost cover, and the use of an aerated static pile system with a biofilter. Finished compost cover is a layer of finished compost that is applied over the top of an active compost pile. Microbes in the cover consume VOCs generated by composting before the VOCs are emitted to the atmosphere. The use of a finished compost cover for longer periods can result in significant composting emission reductions. An aerated static pile system with a biofilter acts in a similar fashion as a finished compost cover as microbes in the biofilter consume VOCs generated by composting activities. Aerated compost piles are located over pipe systems that are connected to a fan. In negatively aerated composting, a fan pulls air from the compost pile into the piping and vents the air to a biofilter. In a positively aerated composting, the fan blows air out of the piping into the bottom of the compost pile. The use of aeration affects microbial activity and temperature, thus affecting the degradation rate of the material composted. In addition, aerated storage piles do not require turning which helps contain VOC within the pile.

⁵⁴ Arizona State University. 2018. Ozone precursor, particulate matter, and particulate matter precursor emissions from composting operations.

Table 4-2. Control measures for composting practices in Rule 327.

Control Type	Aeration	VOC Control Efficiency
Water Management Requirements	Passive	19%
Static Pile or Passively Aerated Windrow covered with a finished compost cover for 22 days	Passive	60%
Negative aerated static pile (ASP) with biofilter	Forced, Negative	26%
Positive ASP with finished compost cover	Forced, Positive	80% – 98%

4.2.1.2 Organic Material Processing Emissions

As a result of stakeholder engagement during the rulemaking process, MCAQD obtained operational data (type of composting, number of days material is stockpiled, and current VOC controls for composting operations) from six composting facilities in Maricopa County. MCAQD used this data to calculate baseline emissions before implementation of the rule and projected emission reductions after rule implementation. The calculations are described in further detail below.

Baseline emissions are the sum of the following:

- Wet tons of material received x number of days stockpiled x 0.2 pounds/wet ton/day
- Wet tons of material composted x 3.58 lb/wet ton x (1 - control efficiency)
- Wet tons of material co-composted x 1.78 lb /wet ton x (1 - control efficiency)

One composting facility is currently operating an aerated static pile that operates under both positive and negative pressure and is vented to a biofilter when under negative pressure, which results in 26% control efficiency. The other facilities are currently uncontrolled.

The six facilities reported a total annual throughput of 116,500 tons per year, with days stockpiled ranging from two to 14 days. Based on this information, MCAQD estimated that baseline emissions from these facilities would be 267 tons per year.

4.2.1.3 Emission Reductions from Rule 327 (Organic Material Processing Operations)

Based on the requirements of Rule 327, facilities will be required to implement water management requirements (control efficiency of 19%) and the use of a finished compost cover for up to the first 22 days of active composting (control efficiency of 60%). The rule does not contain requirements that will provide quantifiable emission reductions from stockpiling.

Controlled emissions are the sum of the following:

- Wet tons of material received x number of days stockpiled x 0.2 pounds/wet ton/day
- Wet tons of material composted ($\leq 10,000$ tpy) x 3.58 lb/wet ton x (1 - 0.19)
- Wet tons of material composted ($> 10,000$ tpy) x 3.58 lb/wet ton x (1 - 0.6)
- Wet tons of material co-composted ($\leq 10,000$ tpy) x 1.78 lb/wet ton x (1 - 0.19)
- Wet tons of material co-composted ($> 10,000$ tpy) x 1.78 lb/wet ton x (1 - 0.6)

Based on the information provided by the facilities and the required controls, MCAQD estimated that controlled emissions from six facilities would be 212 tons per year. The reduction from these six facilities, 55 tons per year, is 20% of the baseline emissions.

The emissions inventory attempts to quantify emissions from all composting activity occurring in Maricopa County. The projected 2026 composting emissions (without implementation of Rule 327) are 752.5 tons of VOC. The estimated VOC reduction from the implementation of Rule 327 (20%) was applied to the projected 2026 emissions resulting in total reductions of 150 tons in 2026. The projected 2026 composting emissions (with implementation of Rule 327) are 602 tons.

4.2.2 Maricopa County Rule 335 (Architectural Coatings)

Rule 335 (Architectural Coatings) is an existing rule that was revised as a contingency measure to assist towards attaining the 2015 ozone NAAQS. The revised rule was adopted by the Maricopa County Board of Supervisors on December 11, 2024. Since the rule is adopted as a contingency measure, the revised rule will become effective upon a determination by the EPA that either the Maricopa Nonattainment Area failed to attain the 2015 ozone NAAQS by the attainment date or failed to make reasonable further progress.

Architectural coatings include coatings applied to stationary structures or their appurtenances at the site of installation, including but not limited to mobile homes, portable buildings, manufactured buildings, pavement, and curbs. During the

architectural coating application and manufacturing processes, VOCs are emitted which contribute to ground-level ozone formation.

Rule 335 had not gone through a significant revision since its creation in 1988. Therefore, provisions in the rule were limited and outdated. In order to achieve emission reductions from these processes, the rule was revised to reflect standards in the Ozone Transport Commission "[Architectural and Industrial Maintenance \(AIM\) Coatings Phase II](#)". The Ozone Transport Commission (OTC) is a multi-state organization created under the CAA that is responsible for advising the EPA on transport issues and for developing and implementing regional solutions to address the ground-level ozone problem in the Northeast and Mid-Atlantic regions. The standards in the OTC Model Rule have been implemented in other districts such as Ohio, Michigan, Connecticut, and Colorado with the same ozone nonattainment status as Maricopa County.

New requirements in Rule 335 that reduce VOC emissions include the addition of 39 new coating categories with VOC content limits and lowering the VOC content limits for 9 existing coating categories. Other additions to the rule include thinning restrictions, painting practices, and container labeling requirements.

4.2.2.1 Emission Reductions from Rule 335

Emissions for 2017 through 2023 are based on the EPA Solvent Tool uncontrolled emission factor (1.41 pounds per person). When Rule 335 is fully implemented, the reduction will be 54.3% (Ramboll US, 2023, page 30).⁵⁵ Rule 335 includes a three-year sell through period. In 2026, the rule will be in the first year of implementation, so the estimated reductions are one-third of the reduction that will be achieved when the rule is fully implemented (18.1%).

For 2026, emissions are scaled up to 2,567 tons (based on forecasted population growth) and a reduction of 18.1% (465 tons) is claimed for implementation of the OTC Model Rule.

4.3 Demonstration that the Contingency Measures Provide for Sufficient Emission Reductions (consistent towards one year's worth of RFP)

These adopted contingency measures will provide emission reductions of 4.343 tons per ozone season day once fully implemented. This amount exceeds the one year's worth of RFP target of 4.196 tons of VOC per ozone season day (described in Section 4.1.2 above). The adopted contingency measures also come very close to meeting the alternative metric target of 3% of baseline anthropogenic VOC emissions (5.036 tons of VOC per ozone season day). Table 4-3 demonstrates how the adopted contingency measures

⁵⁵ Ramboll US Consulting, Inc. 2023. "Final Report: Evaluating New and Available Ozone Precursor Control Measures in the Maricopa Nonattainment Area."

perform against the targets for one year’s worth of RFP (2.5% reduction) and the alternative 3% reduction.

Table 4-3. Contingency Measure VOC Emissions Reductions (Tons/Day).

Adopted Contingency Measure	One Year’s Worth of RFP (2.5% of 2017 VOC)	Alternative Metric (3% of 2017 VOC)	2026	2027	2028	(2026-2028) Total
Rule 327	4.196	5.036	0.411	NA	NA	0.411
Rule 335			1.274	1.307	1.351	3.932
Total (both rules)			1.685	1.307	1.351	4.343

5. Basic Vehicle Inspection and Maintenance Program

5.1 Introduction

5.1.1 Overview of Vehicle I/M Requirements

The Clean Air Act requires the implementation of vehicle Inspection and Maintenance (I/M) programs in ozone nonattainment areas classified as Moderate or higher with the purpose of reducing emissions and improving air quality. These programs help identify vehicles with excess emissions, provide information to assist with diagnosing malfunctions that cause excess emissions, and require repairs of vehicles to bring them into compliance with emissions standards. I/M programs are required to meet certain criteria depending on the assigned performance level, factors such as air quality status, population, and geographic location. There are two I/M performance levels under the CAA:

1. Basic I/M Programs for ozone nonattainment areas classified as Moderate under CAA Section 182; and
2. Enhanced I/M Programs found under CAA sections 182, 184, and 187, which are mandated for the following areas:
 - Metropolitan areas with a 1990 population of 100,000 or more in the Ozone Transport Region (OTR), regardless of air quality classification.
 - All CO nonattainment areas classified as Moderate or higher with a design value greater than 12.7 ppm at the time of classification that had an urban population of 200,000 or more in 1980; or
 - Ozone nonattainment areas classified Serious or higher which had an urban population of 200,000 or more in 1980.

40 CFR Part 51, subpart S lists the specific requirements for the various performance level programs. The Enhanced I/M programs are composed of several elements that are more stringent than the minimum federal requirements including: a one-time-only waiver, an expanded I/M implementation area, and waiver denials for gross emitters.⁵⁶

5.1.2 Arizona's Vehicle Emissions Inspection Program

Arizona established mandatory vehicle emissions I/M programs in the Phoenix metropolitan area and Maricopa County in the 1970s. Since its establishment, there have been several updates made to the programs including improvements designed to further reduce CO and ozone precursors, VOC and NO_x, from vehicle emissions. These improvements to the Vehicle Emissions Inspection Program (VEIP) and the resulting

⁵⁶ A.R.S. § 49-542(X)

emissions reduction benefits help the Maricopa Nonattainment Area meet several CO and ozone NAAQS requirements.^{57, 58, 59, 60} In 1995, Arizona implemented its Enhanced I/M programs in the Phoenix metropolitan area. Arizona's I/M programs were approved as meeting the federal requirements most recently on May 21, 2013.⁶¹ Additional historical information on Arizona's Vehicle Inspection and Maintenance (I/M) Programs can be found in Appendix D.

5.2 Performance Modeling Demonstration

While Moderate ozone nonattainment areas are only required to meet basic performance standards for their I/M programs, the performance standard modeling (PSM) performed in this plan is conducted to meet the stricter standards for enhanced I/M programs. As stated above, an Enhanced I/M program already exists in the Maricopa Nonattainment Area and has been approved by EPA in past actions. Additionally, air quality monitoring data in the Maricopa Nonattainment Area from 2021-2023 indicates that the nonattainment area did not attain the 2015 ozone standard by the August 3, 2024, Moderate area attainment date. As a result of failing to attain by the August 3, 2024, attainment date, the Maricopa Nonattainment Area will be reclassified from Moderate to Serious by the EPA. Since reclassification to Serious is imminent, and Serious nonattainment areas are required to meet enhanced performance standards for I/M programs, the performance standard modeling done in this plan meets the standards for enhanced I/M programs.

As defined in the I/M regulations (40 CFR Part 51, subpart S) states are required to conduct PSM to demonstrate that their I/M programs meet the applicable performance standard. In October 2022, EPA released technical guidance for conducting PSM of I/M programs in

⁵⁷ Determination of Attainment of the 1-Hour Ozone Standard for the Phoenix Metropolitan Area, Arizona and Determination Regarding Applicability of Certain Clean Air Act Requirements, 66 Fed. Reg. 29230, May 30, 2001.

⁵⁸ Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; Arizona, 70 Fed. Reg. 11553, March 9, 2005.

⁵⁹ Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; State of Arizona; Redesignation of Phoenix-Mesa Area to Attainment for the 1997 8-Hour Ozone Standard, 79 Fed. Reg. 55645, September 17, 2014.

⁶⁰ Approval of Arizona Air Plan Revisions; Phoenix, Arizona; Second 10-Year Carbon Monoxide Maintenance Plan, 81 Fed. Reg. 11120, March 3, 2016.

⁶¹ Approval and Promulgation of Implementation Plans; Arizona; Motor Vehicle Inspection and Maintenance Programs, 78 Fed. Reg. 30209, May 22, 2013.

affected ozone nonattainment areas.⁶² The PSM conducted for this plan meets the federal requirements and conforms to EPA guidance. Additional technical details on how the PSM meets EPA regulation and guidance can be found in Appendix D.

EPA guidance states that PSM should be performed for the attainment date or program implementation date, whichever is later. Since PSM is being done to meet the standards for the Enhanced I/M programs required of Serious nonattainment areas, and an Enhanced I/M program is already implemented in the nonattainment area, the analysis year of 2026 was selected.⁶³ As explained in Appendix D, the PSM used Maricopa County as the representative county for the Maricopa Nonattainment Area.

Per 40 CFR 51.351(d) and 352(d), performance standard modeling must be demonstrated using the most current version of the U.S. EPA's mobile source emission model. For this PSM analysis, MOVES version 4.0.1 (the latest version of the MOVES model available when PSM was conducted) and the movesdb20240104 database were used to estimate VOC and NOx emission rates for two scenarios: the existing program scenario and the performance standard benchmark scenario. The existing program scenario includes all the local area parameters and control measures as well as the inputs required to define the existing I/M programs. The performance standard benchmark scenario includes all the local area parameters and control measures and an I/M program with the elements of the required Enhanced I/M programs testing passenger cars and light-duty trucks. Additional technical details on how the MOVES modeling is configured so that the PSM meets EPA regulation and guidance can be found in Appendix D.

As specified in 40 CFR 51.351(i)(13), an existing I/M program meets the Enhanced performance standard if the existing program areawide emission rates for NOx and VOC are not more than 0.02 gpm higher than the areawide emission rates of the benchmark program. The results of the PSM are shown below in Table 5-1. Based on the PSM results, the weekday NOx and VOC emission rates for the existing I/M program are less than the performance standard benchmark program with 0.02 gpm buffer and, therefore, meets the performance standard.

⁶² Performance Standard Modeling for New and Existing Vehicle Inspection and Maintenance (I/M) Programs Using the MOVES Mobile Source Emissions Model. Transportation and Climate Division, Office of Transportation and Air Quality, U.S. Environmental Protection Agency. EPA-420-B-22-034. October 2022.

⁶³ The Serious area attainment date for the Maricopa Nonattainment Area is August 3, 2027, with attainment required to be demonstrated in the full calendar year of 2026.

Table 5-1. Summary of PSM Weekday Emission Rates (in grams per mile) for the Maricopa Nonattainment Area.

Scenario	NOx	VOC
Existing Enhanced I/M Program PSM Results	0.2511	0.2516
Performance Standard Benchmark for Enhanced I/M Programs	0.2673	0.2721
Performance Standard Benchmark with 0.02 gpm Buffer	0.2873	0.2921

6. Public Participation

6.1 Overview

The Transportation-Air Quality Guidelines⁶⁴ for public participation are issued jointly by the EPA and the U.S. Department of Transportation. These guidelines are designed to encourage an effective public participation program for the development and implementation of the State Implementation Plan. According to the guidelines, the objectives of the public participation program should be to:

1. Promote public awareness of the air pollution problem, the SIP revision process, and the effects of various transportation control measures.
2. Encourage active participation from a variety of interest groups in the plan preparation process.
3. Promote public understanding and agreement on the transportation control measures necessary to improve air quality.
4. Provide for the identification of both interested and affected constituencies.
5. Ensure that the agencies and elected officials are responsive to these constituencies.
6. Encourage a spirit of openness and trust among elected officials, agencies, and the public.

In order to be responsive to these guidelines, MAG has established a formal public participation program. The program includes the MAG Air Quality Technical Advisory Committee, additional Air Quality Working Groups, as necessary, the MAG Management Committee, and the MAG Regional Council.

6.2 Decision Making Structure

MAG has been designated as the lead planning agency for air quality planning within the Maricopa and Pinal County areas. MAG member agencies include 27 cities and towns within Maricopa County and portions of Pinal County, Maricopa County, Pinal County, the Gila River Indian Community, the Salt River Pima-Maricopa Indian Community, Fort McDowell Yavapai Nation, and the Arizona Department of Transportation. A representative from the Regional Public Transportation Authority is also included on the MAG Management Committee. Two Maricopa County State Transportation Board members representing the Arizona Department of Transportation are also on the Regional

⁶⁴ 1992, U.S. EPA Office of Mobile Sources, Transportation and Air Quality Planning Guidelines, Retrieved from <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000WSCY.txt>

Council. The policy development process is influenced by input from the MAG member agencies, MAG committees, local citizens, and staff.

The decision-making body for MAG is the Regional Council, which is composed of elected officials from the member agencies. The MAG Management Committee, which is composed of managers from the member agencies, makes recommendations to the Regional Council (see Figure 6-1).

The MAG Air Quality Technical Advisory Committee was established by the MAG Regional Council in 1995. The purpose of the Committee is to review and comment on technical information generated during the planning process and make technical recommendations to the MAG Management Committee.

The MAG Air Quality Technical Advisory Committee (AQTAC) met and discussed the MAG 2025 Eight-Hour Ozone Plan – Submittal of Applicable Moderate Area Requirements for the Maricopa Nonattainment Area during its development on the following dates: 10/20/2023, 2/22/2024, 4/25/2024, 6/27/2024, 8/22/2024, 9/26/2024, 12/17/2024, 1/23/2025 and 3/27/2025.

On April 9, 2025, the MAG Management Committee recommended adoption of the MAG 2025 Eight-Hour Ozone Plan – Submittal of Applicable Moderate Area Requirements for the Maricopa Nonattainment Area. On April 23, 2025, the MAG Regional Council adopted the MAG 2025 Eight-Hour Ozone Plan – Submittal of Applicable Moderate Area Requirements for the Maricopa Nonattainment Area for submittal to the Arizona Department of Environmental Quality and the US Environmental Protection Agency.

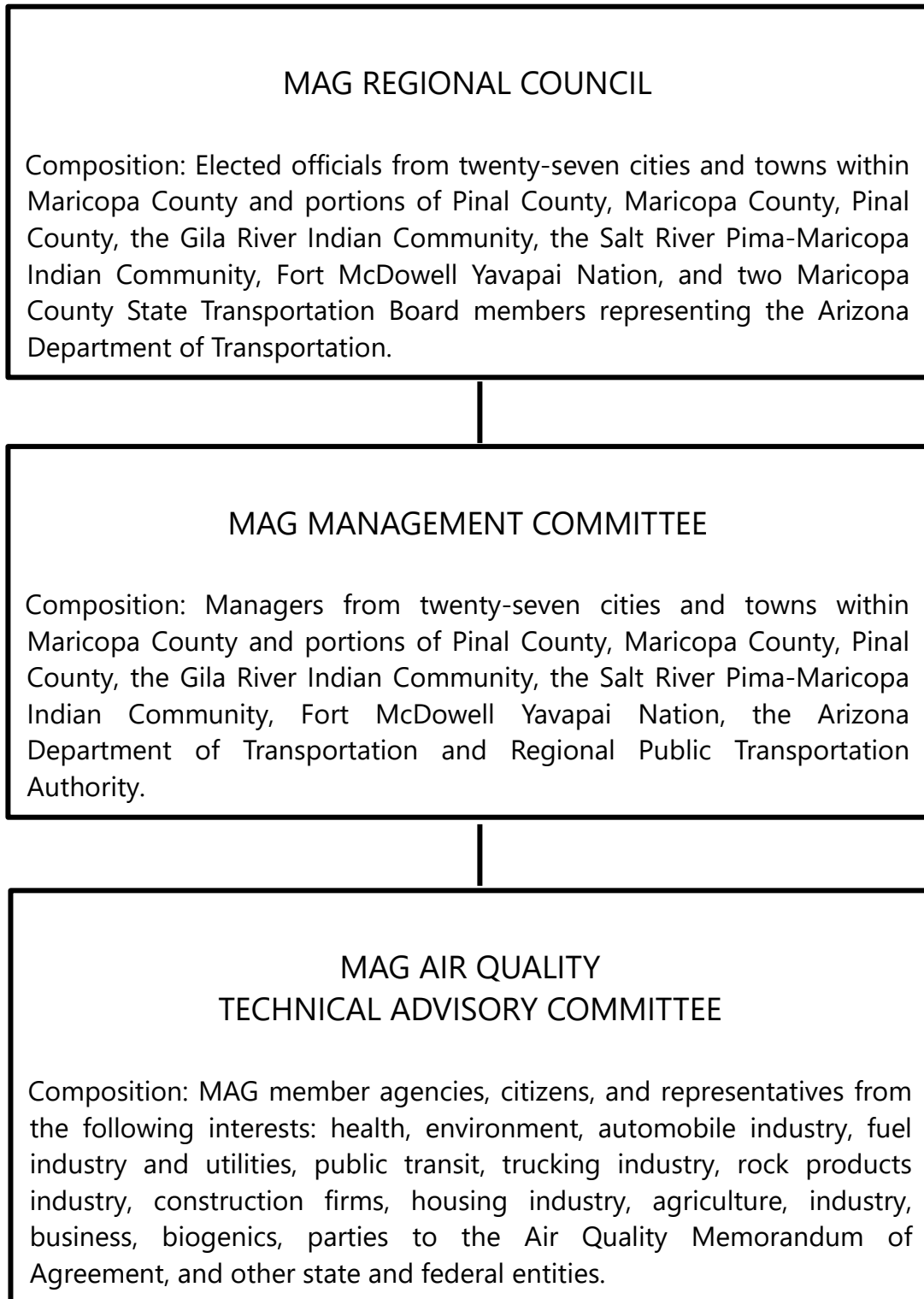


Figure 6-1. MAG Decision Making Structure.

6.3 Public Participation in the Preparation of the MAG 2025 Eight-Hour Ozone Plan

The process used to develop this MAG 2025 Eight-Hour Ozone Plan included numerous meetings of the MAG Air Quality Technical Advisory Committee, MAG Management Committee and MAG Regional Council. All of these meetings were open to public attendance. During the preparation of the MAG 2025 Eight-Hour Ozone Plan, an opportunity to comment on and/or request a public hearing on MAG 2025 Eight-Hour Ozone Plan was provided. No comments or requests to hold a public hearing were received during the public comment period. See Appendix E – Documentation of Public Review Process for details.

6.3.1 Meetings of the MAG Air Quality Technical Advisory Committee

A brief description of the Air Quality Technical Advisory Committee meetings agenda items relevant in preparing the plan is provided below.

On 10/20/2023, a meeting of the MAG Air Quality Technical Advisory Committee was conducted to discuss the following:

EPA Finding of Failure to Submit State Implementation Plans for Nonattainment Areas classified as Moderate for the 2015 ozone standard.

On 2/22/2024 a meeting of the MAG Air Quality Technical Advisory Committee was conducted to discuss the following:

Update on planning efforts to address nonattainment of the 2015 ozone standard in the Maricopa region.

On 4/25/2024, a meeting of the MAG Air Quality Technical Advisory Committee was conducted to discuss the following:

Update on planning efforts to address nonattainment of the 2015 ozone standard in the Maricopa region.

On 6/27/2024, a meeting of the MAG Air Quality Technical Advisory Committee was conducted to discuss the following:

2015 ozone standard serious area Clean Air Act requirements in the Maricopa region.

On 8/22/2024, a meeting of the MAG Air Quality Technical Advisory Committee was conducted to discuss the following:

Preliminary 2024 air quality monitoring data for ozone in the Maricopa Nonattainment Area and update on planning efforts to address the 2015 ozone standard in the Maricopa Nonattainment Area.

On 9/26/2024, a meeting of the MAG Air Quality Technical Advisory Committee was conducted to discuss the following:

Update on planning efforts to address the 2015 ozone standard in the Maricopa Nonattainment Area.

On 12/17/2024, a meeting of the MAG Air Quality Technical Advisory Committee was conducted to discuss the following:

EPA final guidance on the preparation of State Implementation Plan provisions that address the nonattainment area contingency measure requirements for ozone and particulate matter and update on planning efforts to address the 2015 ozone standard in the Maricopa Nonattainment Area.

On 1/23/2025, a meeting of the MAG Air Quality Technical Advisory Committee was conducted to discuss the following:

Update on Moderate Area Planning Requirements for the 2015 Ozone Standard.

On 3/27/2025, a meeting of the MAG Air Quality Technical Advisory Committee was conducted to discuss the following:

Update on plan to address moderate area requirements for the 2015 ozone standard.

6.4 Public Involvement Process for Transportation and Air Quality

Federal transportation legislation emphasizes public involvement in the metropolitan transportation planning process. The latest transportation authorization was signed into law on December 4, 2015. This enabling legislation, Fixing America's Surface Transportation Act (FAST Act) continues to emphasize public involvement in the metropolitan transportation planning process. Current legislation requires that the metropolitan planning organization work cooperatively with the state department of transportation and the regional transit operator to provide citizens, affected public agencies, representatives of transportation agency employees, freight shippers, private providers of transportation, representatives of users of public transit, and other interested parties a reasonable opportunity to comment on proposed transportation plans and programs. MAG will continue to adhere to the federal requirements for public involvement, in addition to finding new ways of engaging Valley residents in the transportation planning and programming process.

The MAG Public Participation Plan (August 2023) indicates that MAG adheres to the many federal requirements for public involvement in transportation planning, which focus on timely public notice, full public access to key decisions, and opportunities for early and

continuing involvement in the planning processes. The MAG guiding principles for public participation are:

- Include a diverse blend of voices in the decision-making process.
- Engage people early and often in meaningful conversations about the policies and plans that affect the near-term and long-term future of the MAG region.
- Be clear and transparent in all communications with members of the community.
- Listen and act by building relationships with members of the community and stakeholders by listening to their ideas and perspectives and incorporating them into the regional plans and projects.
- Report back to people who offer their time and feedback to MAG’s planning efforts, and explain how their comments helped shape the final plans.

In accordance with 40 CFR §93.105, consultation is conducted on the draft air quality plans with the state air and transportation agencies, local air quality and transportation agencies, EPA, Federal Transit Administration, and Federal Highway Administration. Public hearings are conducted on draft air quality plans in accordance with state and federal requirements.

6.5 Title VI Considerations

Note: On April 1, 2025, Section 6.5 was updated to reflect President Trump’s January 21, 2025, [Executive Order 14173: Ending Illegal Discrimination And Restoring Merit-Based Opportunity](#).

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color and national origin by recipients and subrecipients of federal funds and prohibits exclusion from participation in, denial of benefits, or being subjected to discrimination under any program or activity receiving federal financial assistance. Additional protections are provided in other federal and state authorities for income status, religion, sex, disability, sexual orientation, gender, and age. ([See MAG’s full Title VI Notice to the public](#))

MAG is responsible for incorporating Title VI requirements in its planning and programming processes. For more than 50 years, MAG has fully integrated the voices of vulnerable populations into regional planning activities. The MAG is the metropolitan planning organization and council of governments for the region, comprising 27 cities and towns, Maricopa County, portions of Pinal County, the Gila River Indian Community, the Salt River Pima Maricopa Indian Community, Fort McDowell Yavapai Nation, and the Arizona Department of Transportation. A representative from the Regional Public Transportation Authority is a member of the MAG Management Committee. Two Maricopa County State Transportation Board members representing the Arizona

Department of Transportation are members of the MAG Regional Council. MAG receives funds from a variety of sources, including direct federal, indirect federal, and state and local government funds.

The MAG FY 2025 Title VI and Environmental Justice Program Document was approved by the MAG Regional Council on September 25, 2024. The document outlines the roles, method of administration, and analysis that supports nondiscrimination in MAGs regional planning.

The MAG FY 2025 Title VI and Environmental Justice Program Document describes how data are collected, reported and analyzed for major program areas within the agency. For the environmental area, the document indicates that a robust Title VI Outreach List is used to inform communities of concern and agencies representing the communities when the public is being engaged on environmental issues. This includes but is not limited to, the opportunity to provide comments or request public hearings when new plans are being developed. The Environmental Division sends letters to the Title VI stakeholders and other interested parties to solicit input from these targeted and often underserved entities to meet federal requirements. A copy of the public hearing notice published in the newspaper also is provided. A response to comments is prepared for any comments received and then included in the appendix of the plan. The comments and responses are reviewed by the committee before a recommendation is made and are part of the approved plan.

Attendees of public hearings are also invited to complete surveys. The ZIP codes of residence for survey respondents are mapped for analysis and reporting purposes. The results of this analysis are included in the MAG Title VI Program for approval by the MAG Regional Council. The results of the analysis are also used to determine when additional outreach efforts are needed to ensure effective levels of participation and representation by communities of concern.

In addition to public hearings, the Environmental Division may engage the public through other activities, including MAG committee meetings, open houses, community meetings, and presentations to local committees. The Environmental Division Title VI liaison works with the MAG Communication Division staff to develop appropriate outreach plans as needed.

The MAG Title VI Program is implemented through the Title VI Coordinator. The coordinator is responsible for reviewing and updating the program in collaboration with the division liaisons. The liaisons in each of the MAG divisions are the main point of contact for both the public and Coordinator on Title VI issues.

6.6 Information Dissemination

MAG employs a strategy of expanded information dissemination and public access to plans and decisions. Copies of studies and reports are placed in public libraries in the region as standard procedure.

MAG committee meetings are conducted in accordance with the Open Meeting Law, and therefore provide citizens public opportunities to comment before meetings of MAG technical and policy committees. Alternative formats, accessible meeting locations and accessible meeting times are encouraged for MAG meeting planning.

MAG houses numerous records of data, statistics and information. Data collection, analysis and portrayal methods and products are evaluated periodically. Program area managers assess MAG's available data sources for relevance to Title VI requirements not less often than annually.

MAG maintains a home page on the Internet (<https://azmag.gov/>) which provides the public with access to information on the role and history of the agency and its programs, as well as the agendas and minutes of Committee meetings. The web page serves as an excellent portal for disseminating information about MAG events, programs and plans.