Sun Corridor
Metropolitan Planning Organization

CONFORMITY ANALYSIS

April 2026

SunCorridor
Metropolitan Planning Organization

DRAFT SUN CORRIDOR MPO CONFORMITY ANALYSIS

FOR A PROPOSED AMENDMENT TO THE FY 2025-2029 SUN CORRIDOR MPO TRANSPORTATION IMPROVEMENT PROGRAM

AND THE

SUN CORRIDOR MPO REGIONAL TRANSPORTATION PLAN 2050 UPDATE

April 2026

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TABLE OF CONTENTS

FIGURES

TABLES

EXECUTIVE SUMMARY

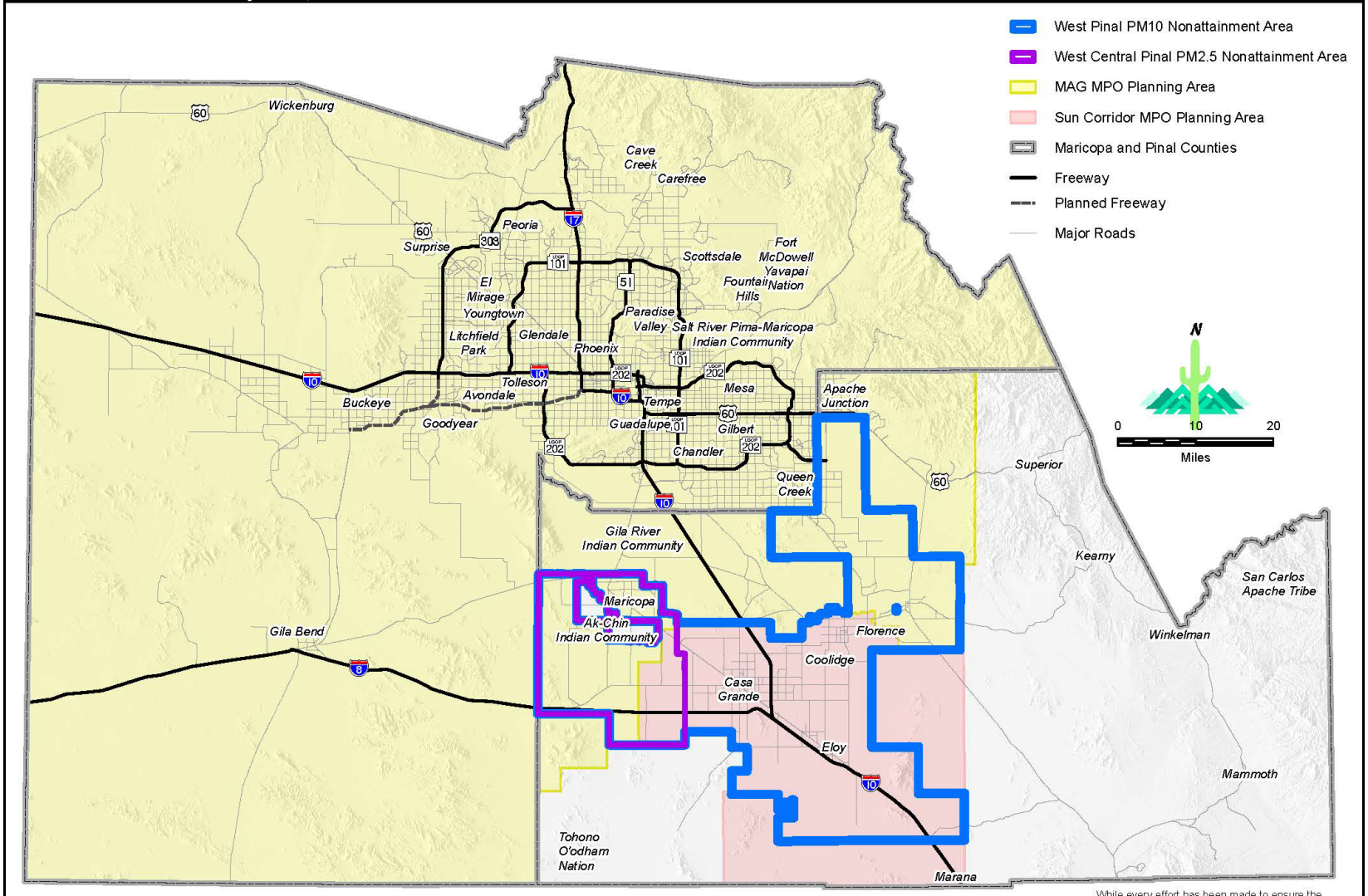
The Sun Corridor Metropolitan Planning Organization (MPO) has prepared a proposed amendment to the FY 2025-2029 Sun Corridor MPO Transportation Improvement Program. The proposed amendment to the FY 2025-2029 Sun Corridor MPO Transportation Improvement Program can be found in Attachment B. In accordance with EPA transportation conformity regulations, the Transportation Improvement Program and Sun Corridor MPO Regional Transportation Plan 2050 Update must be demonstrated to conform before the amendment to the Transportation Improvement Program is approved by the MPO or accepted by the U.S. Department of Transportation. The Maricopa Association of Governments has prepared the conformity analysis and the results support a finding of conformity for the proposed amendment to the FY 2025-2029 Sun Corridor MPO Transportation Improvement Program and Sun Corridor MPO Regional Transportation Plan 2050 Update in the West Pinal PM-10 Nonattainment Area and West Central Pinal PM-2.5 Nonattainment Area.

Both the MAG Metropolitan Planning Area Boundary and the Sun Corridor Metropolitan Planning Area Boundary include portions of the West Pinal PM-10 Nonattainment Area and West Central Pinal PM-2.5 Nonattainment Area. Both nonattainment areas are covered by the boundaries of the two metropolitan planning organizations. Consequently, transportation conformity is required to be demonstrated for both nonattainment areas by both metropolitan planning organizations. Please refer to Figure ES-1.

On May 6, 2013, the Sun Corridor Metropolitan Planning Organization was designated in the Pinal County area. The Sun Corridor Metropolitan Planning Area Boundary includes the cities of Casa Grande, Eloy, Coolidge, and unincorporated areas of Pinal County.

On May 9, 2013, the MAG Metropolitan Planning Area Boundary was expanded due to the 2010 Census urbanized area updates. For transportation planning and programming purposes, the Federal Highway Administration regulations state that at a minimum, the Metropolitan Planning Area must encompass the entire existing urbanized area boundary as well as the contiguous geographic area(s) likely to become urbanized within the next 20 years. The updated urbanized area boundary for the MAG region included areas within Pinal County. Due to this expansion, the MAG Regional Council amended the MAG By-laws to recognize the new Metropolitan Planning Area Boundary and to provide for new members from Pinal County within the new boundary. The MAG Metropolitan Planning Area Boundary now includes the Town of Florence, City of Maricopa, the portion of the Gila River Indian Community within Pinal County, and unincorporated areas within Pinal County.

Figure ES-1: MAG and Sun Corridor MPO Planning Areas and Air Quality Nonattainment Areas for the Pinal County Area, Arizona



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Source: U.S. Environmental Protection Agency

Date: February 2026

On July 1, 2013, the Federal Highway Administration notified the Governor of a transportation conformity lapse in the West Pinal PM-10 Nonattainment Area, effective July 2, 2013. The new West Pinal PM-10 Nonattainment Area had been designated by the Environmental Protection Agency, effective July 2, 2012. The Clean Air Act Section 176(c)(6) requires a metropolitan long range transportation plan and transportation improvement program conformity determination within twelve months of the effective date of an area being designated nonattainment. The twelve-month conformity grace period had lapsed.

To provide assistance to the Sun Corridor Metropolitan Planning Organization, MAG has offered to prepare conformity analyses for the PM-10 and PM-2.5 nonattainment areas in Pinal County, to enable transportation projects in both metropolitan planning organizations to proceed. At a June 17, 2013 meeting with the Arizona Department of Transportation, Sun Corridor Metropolitan Planning Organization, and MAG, there was general concurrence that MAG would prepare the initial conformity analysis. The Maricopa Association of Governments works through a cooperative effort with the Arizona Department of Transportation, Arizona Department of Environmental Quality, and Sun Corridor Metropolitan Planning Organization on the coordination of transportation planning activities and conformity analyses consistent with the Memorandum of Understanding among the agencies.

Summarized below are the applicable federal criteria or requirements for conformity determinations, the conformity tests applied, regional emissions analysis results, and an overview of the organization of this report. Figures presenting the conformity test results are provided at the end of the Executive Summary.

CONFORMITY REQUIREMENTS

The federal transportation conformity rule (40 Code of Federal Regulations Parts 51 and 93) specifies criteria and procedures for conformity determinations for transportation plans, programs, and projects and their respective amendments. The federal transportation conformity rule was first promulgated in 1993 by EPA, following the passage of amendments to the federal Clean Air Act in 1990. The federal transportation conformity rule has been revised several times since its initial release to reflect both EPA rule changes and court opinions. The transportation conformity rule and court opinions are summarized in Chapter 1.

The conformity rule applies nationwide to “all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan” (40 CFR 93.102). At this time, portions of Pinal County are designated as a nonattainment area with respect to federal air quality standards for particulate matter less than or equal to ten microns in diameter (PM-10), and particulate matter less than or equal to 2.5 microns in diameter (PM-2.5). Metropolitan transportation plans, programs, and projects in the nonattainment areas of both counties must satisfy the requirements of the federal transportation conformity rule. Under the federal transportation conformity rule, the principal criteria for a determination of conformity for transportation plans and programs are:

(1) the TIP and Regional Transportation Plan must pass an emissions budget test with a budget that has been found to be adequate or approved by EPA for transportation conformity purposes, or interim emissions tests;

(2) the latest planning assumptions and emission models in force at the time the conformity analysis begins must be employed;

(3) the TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and,

(4) consultation.

Consultation generally occurs at the beginning of the conformity analysis process, on the proposed models, associated methods, and assumptions for the upcoming analysis and the projects to be assessed, and at the end of the process, on the draft conformity analysis report. The final determination of conformity for the TIP and RTP is the responsibility of the Federal Highway Administration and the Federal Transit Administration.

The conformity tests specified in the federal transportation conformity rule are: (1) the emissions budget test, and (2) interim emissions tests. For the emissions budget test, predicted emissions for the TIP and RTP must be less than or equal to the motor vehicle emissions budget specified in the approved air quality implementation plan or the emissions budget found by EPA to be adequate for transportation conformity purposes. If there is no approved air quality plan for a pollutant for which the region is in nonattainment or no emissions budget found to be adequate for transportation conformity purposes, interim emissions tests apply.

PINAL COUNTY NONATTAINMENT AREAS

For the Pinal County PM-10 and PM-2.5 nonattainment areas, there are no adequate or approved motor vehicle emissions budgets for conformity. Therefore, the conformity interim emissions tests were applied. The Action/Baseline tests were conducted for PM-10 for the West Pinal PM-10 Nonattainment Area and for PM-2.5 and nitrogen oxides (NOx) for the West Central Pinal PM-2.5 Nonattainment Area for the analysis years of 2030, 2040, and 2050. For each test, the required emissions estimates were developed using the transportation and emission modeling approaches required under the federal transportation conformity rule and summarized in this document.

For PM-10, for each analysis year the projected emissions for the Action scenario are not greater than the projected emissions for the Baseline scenario. Since the PM-10 emissions projected for the Action scenarios are not greater than the PM-10 emissions projected for the Baseline scenarios, the conformity interim emission test is satisfied. It is also reasonable to expect the action emissions would not exceed the baseline emissions for the time periods between the analysis years. The results of the regional emissions analysis for PM-10 are presented in Figure ES-2.

For PM-2.5, for each analysis year the projected emissions for the Action scenario are not greater than the projected emissions for the Baseline scenario. Since the PM-2.5 emissions projected for the Action scenarios are not greater than the PM-2.5 emissions projected for the Baseline scenarios, the conformity interim emission tests are satisfied. It is also reasonable to expect the action emissions would not exceed the baseline emissions for the time periods between the analysis years. The results of the regional emissions analysis for PM-2.5 are presented in Figure ES-3.

For NOx, for each analysis year the projected emissions for the Action scenario are not greater than the projected emissions for the Baseline scenario. Since the NOx emissions projected for the Action scenarios are not greater than the NOx emissions projected for the Baseline scenarios, the conformity interim emission tests are satisfied. It is also reasonable to expect the action emissions would not exceed the baseline emissions for the time periods between the analysis years. The results of the regional emissions analysis for NOx are presented in Figure ES-4.

Figure ES-2: PM-10 Results for Conformity Interim Emission (Action/Baseline) Test

Pinal County PM-10 Nonattainment Area

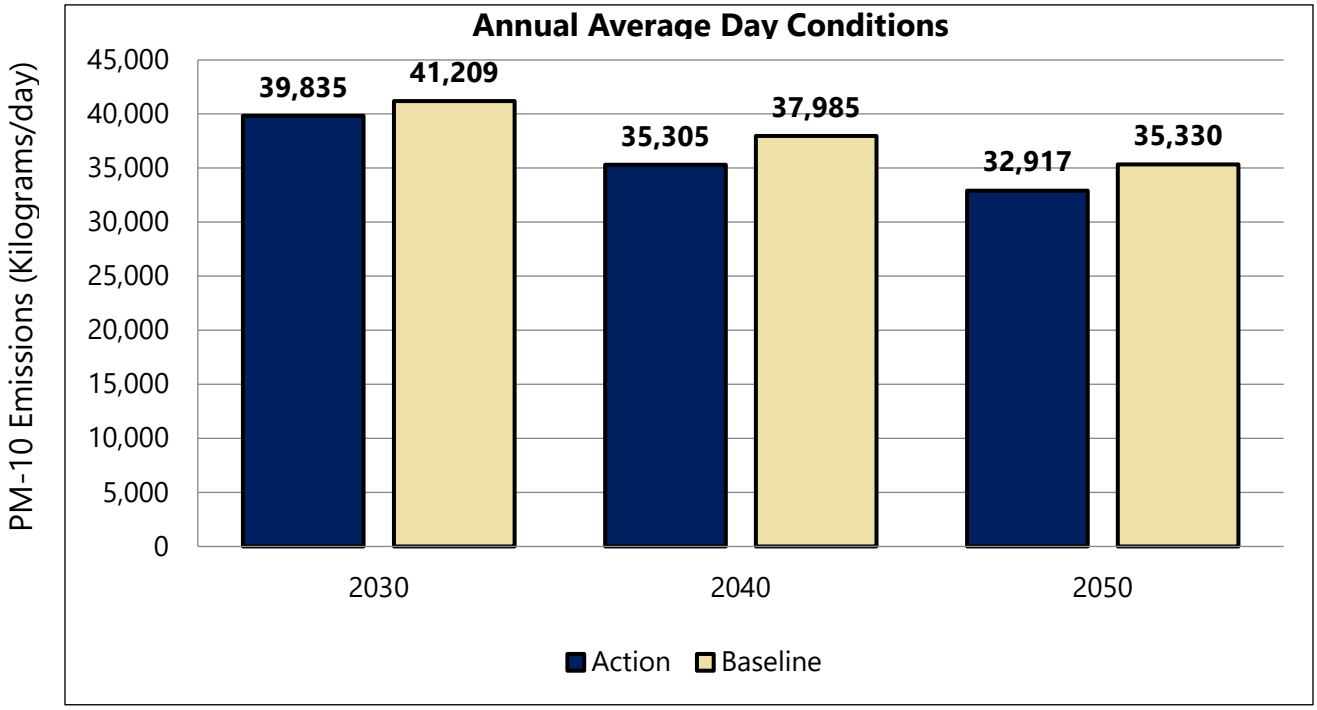


Figure ES-3: PM-2.5 Results for Conformity Interim Emission (Action/Baseline) Test

Pinal County PM-2.5 Nonattainment Area

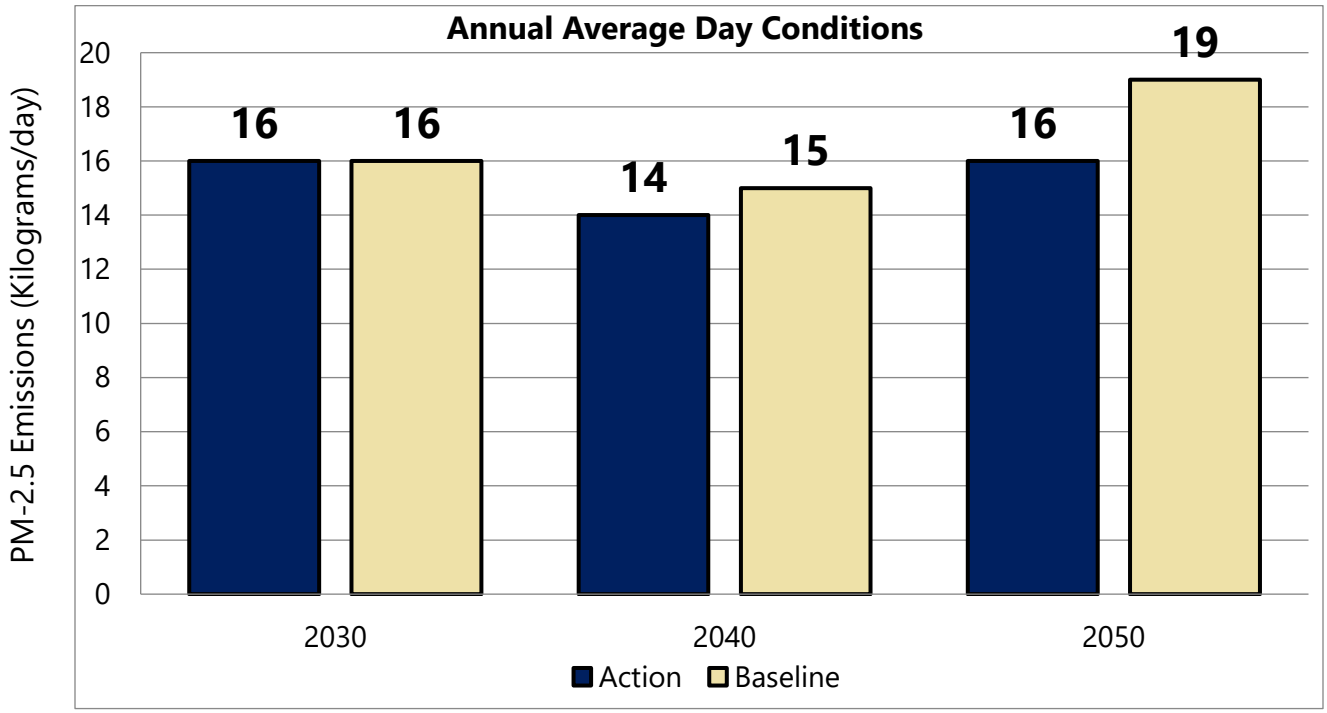
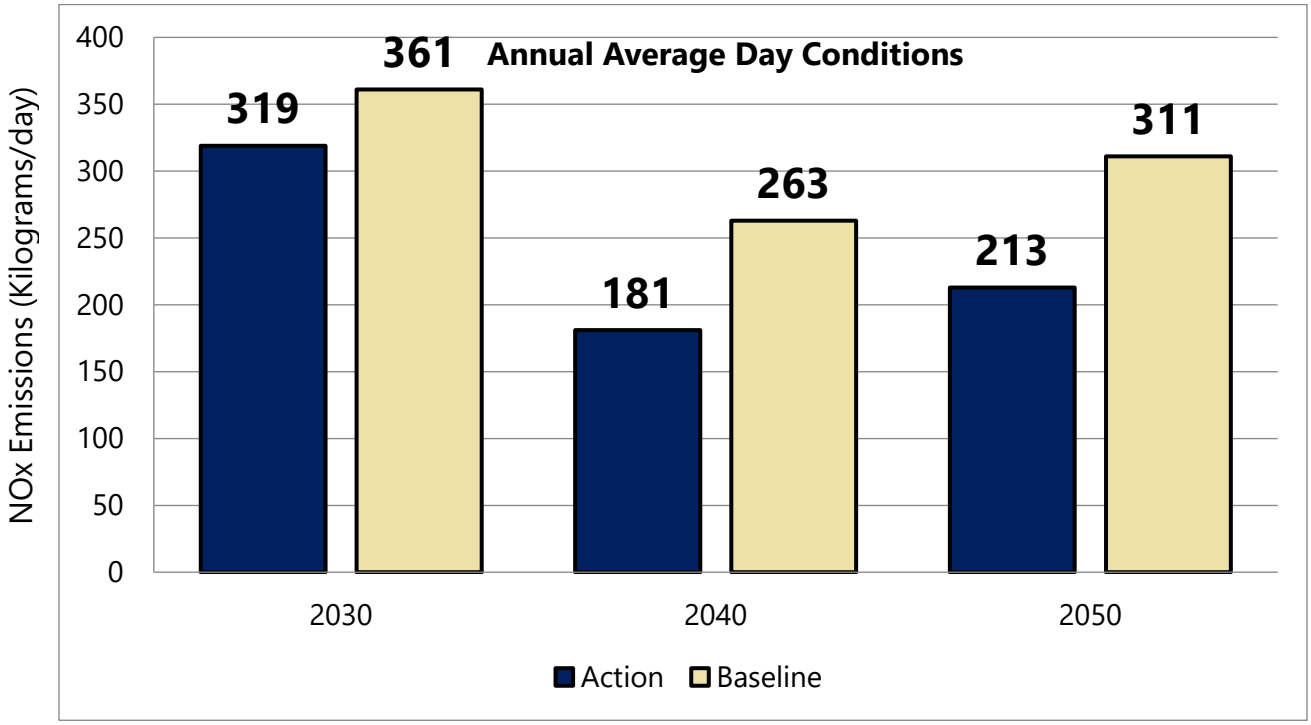


Figure ES-4: NOx Results for Conformity Interim Emission (Action/Baseline) Test

Pinal County PM-2.5 Nonattainment Area



REPORT ORGANIZATION

The report is organized into five chapters. Chapter 1 provides an overview of the applicable federal and state conformity rules and requirements, air quality implementation plans, and conformity test requirements. Chapter 2 contains a discussion of the latest planning assumptions. Chapter 3 includes a summary of the transportation model characteristics, key socioeconomic data, and other data related to the land use and transportation system forecasts, and Chapter 4 describes the air quality modeling used to estimate emission factors and mobile source emissions. The results of the conformity analysis for the proposed amendment to the FY 2025-2029 Sun Corridor MPO Transportation Improvement Program and Sun Corridor Regional Transportation Plan 2050 Update are provided in Chapter 5.

The final version of this report contains consultation documentation and other related information in the appendices. The appendices of the final version of this report also include responses to comments made on the draft report.

1 FEDERAL AND STATE REGULATORY REQUIREMENTS

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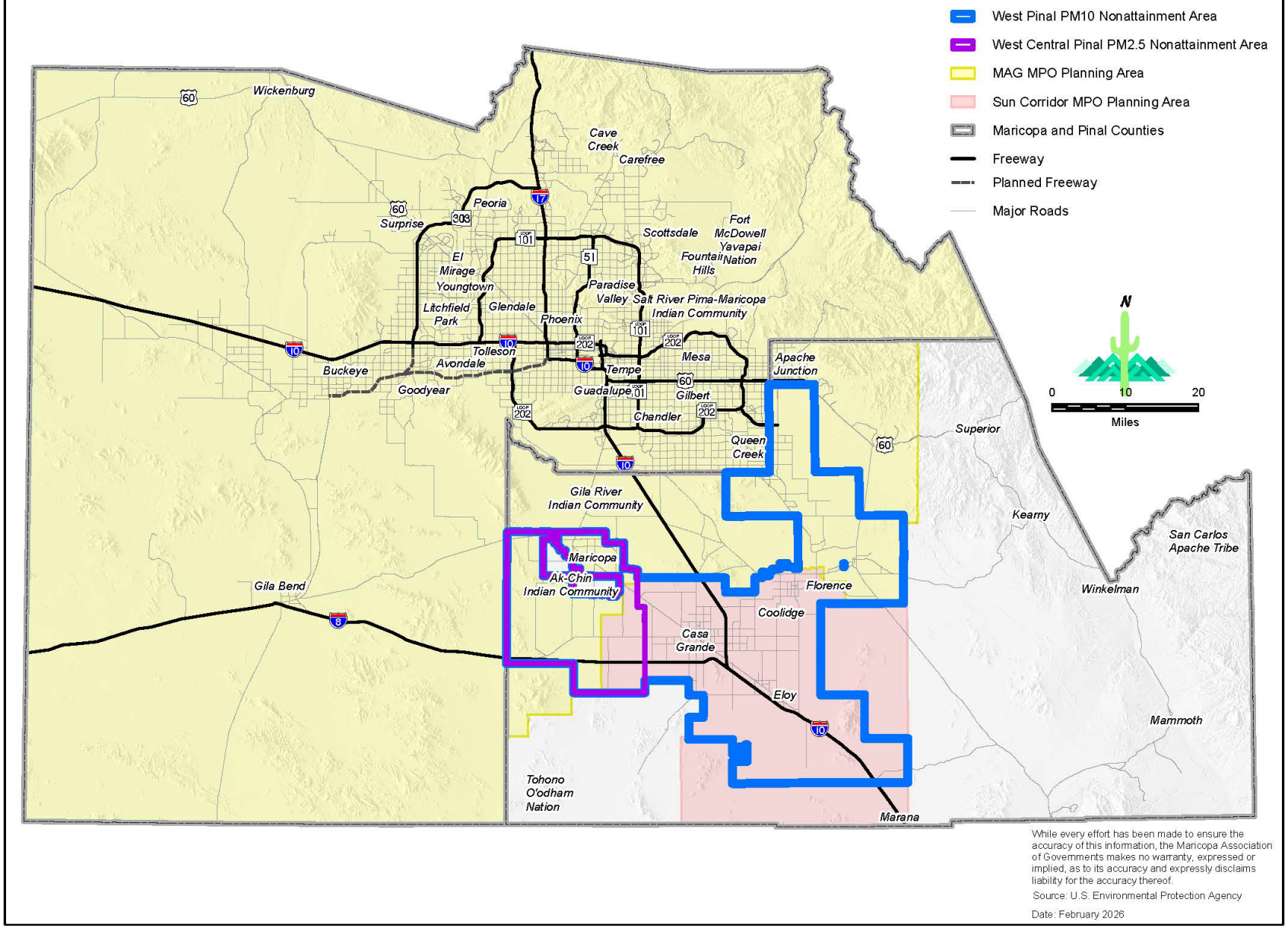

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The criteria for determining conformity of transportation programs and plans under the federal transportation conformity rule (40 Code of Federal Regulations Parts 51 and 93) and the applicable conformity tests for the Pinal County nonattainment areas are summarized in this chapter. The Sun Corridor MPO Conformity Analysis for the proposed amendment to the FY 2025-2029 Sun Corridor MPO Transportation Improvement Program (TIP) and the Sun Corridor MPO Regional Transportation Plan 2050 Update (RTP) was prepared based on these criteria and tests. Presented first is a review of the development of the applicable conformity rule and guidance procedures, followed by a summary of conformity rule requirements, air quality designation status, conformity test requirements, and analysis years.

FEDERAL AND STATE CONFORMITY RULES

Clean Air Act Amendments

Section 176(c) of the Clean Air Act (CAA, 1990) requires that Federal agencies and Metropolitan Planning Organizations (MPOs) not approve any transportation project, program, or plan which does not conform with the approved State Implementation Plan (SIP). The 1990 amendments to the Clean Air Act expanded Section 176(c) to more explicitly define conformity to an implementation plan to mean:

> Conformity to the plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and that such activities will not (i) cause or contribute to any new violation of any standard in any area; (ii) increase the frequency or severity of any existing violation of any standard in any area; or (iii) delay timely attainment of any standard or any

required interim emission reductions or other milestones in any area.

The expanded Section 176(c) also provided conditions for approval of transportation plans, programs, and projects; requirements that the Environmental Protection Agency (EPA) promulgate conformity determination criteria and procedures no later than November 15, 1991; and a requirement that States submit their conformity procedures to EPA by November 15, 1992. The initial November 15, 1991 deadline for conformity criteria and procedures was not met by EPA.

Federal Rule

Supplemental interim conformity guidance was issued on June 7, 1991 (EPA/U.S. DOT, 1991a and 1991b) for carbon monoxide, ozone, and particulate matter less than or equal to ten microns in diameter. The applicable period of this guidance was designated as Phase 1 of the interim period. EPA subsequently promulgated the Conformity Final Rule, in the November 24, 1993 *Federal Register* (EPA, 1993). The Rule became effective on December 27, 1993. The federal Transportation Conformity Final Rule has been revised several times since its initial release. The first set of amendments, finalized on August 7, 1995, (EPA, 1995a) aligned the dates of conformity lapses due to SIP failures with the application of Clean Air Act highway sanctions for certain ozone areas and all areas with disapproved SIPs with a protective finding.

The second set of amendments was finalized on November 14, 1995 (EPA, 1995b). This set allowed any transportation control measure (TCM) from an approved SIP to proceed during a conformity lapse and aligned the date of conformity lapses with the date of application of Clean Air Act highway sanctions for any failure to submit or submissions of an incomplete control strategy SIP. The second set also corrected the nitrogen oxides provisions of the transportation conformity rule consistent with the Clean Air Act and previous commitments made by EPA. Finally, the amendments extended the grace period for areas to determine conformity to a submitted control strategy SIP and established a grace period for determining conformity on transportation plans and programs in recently designated nonattainment areas. This grace period was later overturned in *Sierra Club v. EPA* in November 1997.

The third set of amendments was finalized August 15, 1997 (EPA, 1997). These amendments streamlined the conformity process by eliminating the reliance on the classification system of “Phase II interim period,” “transitional period,” “control strategy period,” and “maintenance period” to determine whether the budget test and/or emission reduction tests apply. The amendments also changed the time periods during which the budget test and the “Build/No Build” test are required.

To incorporate provisions from the *Sierra Club v. EPA* court decision, EPA promulgated an amendment to the transportation conformity rule on April 10, 2000 that eliminated a one-year grace period for new nonattainment areas before conformity applies (EPA, 2000).Then on August 6, 2002, EPA promulgated an amendment to the transportation conformity rule which requires conformity to be determined within 18 months of the

effective date of the EPA *Federal Register* notice on a budget adequacy finding in an initial SIP submission and established a one-year grace period before conformity is required in areas that are designated nonattainment for a given air quality standard for the first time (EPA, 2002).

On July 1, 2004, EPA published the final rule, Transportation Conformity Rule Amendments for the New Eight-Hour Ozone and PM-2.5 National Ambient Air Quality Standards and Miscellaneous Revisions for Existing Areas; Transportation Conformity Rule Amendments - Response to Court Decision and Additional Rule Changes (EPA, 2004). The rule describes transportation conformity requirements for the new eight-hour ozone and fine particulate matter (PM-2.5) standards. The rule also incorporates existing EPA and United States Department of Transportation (U.S. DOT) guidance that implements the March 2, 1999, court decision and provides revisions that clarify the existing regulation and improve its implementation. On July 20, 2004, EPA published a *Federal Register* notice that corrects two errors in the preamble to the July 1, 2004 final rule.

On February 14, 2006, EPA and U.S. DOT jointly issued guidance on the implementation of the transportation conformity-related provisions from the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The transportation bill, which became law on August 10, 2005, made several changes to the transportation conformity provisions in Section 176(c) of the Clean Air Act. On January 24, 2008, EPA issued a final rule on the transportation conformity amendments to implement the conformity provisions contained in SAFETEA-LU (EPA, 2008a). A summary of the key conformity provisions is:

- Additional time is provided for areas to redetermine conformity of existing transportation plans and programs from 18 months to two years after the date that EPA finds a motor vehicle emissions budget to be adequate or approves an implementation plan that establishes a motor vehicle emissions budget, or when EPA promulgates an implementation plan that establishes or revises a motor vehicle emissions budget.

- The requirement for frequency of conformity determinations on updated transportation plans and programs is changed from three to four years, except when the MPO elects to update a transportation plan or program more frequently, or when the MPO is required to determine conformity after EPA finds a motor vehicle emissions budget to be adequate or approves an implementation plan that establishes a motor vehicle emissions budget, or when EPA promulgates an implementation plan that establishes or revises a motor vehicle emissions budget.

- Conformity determinations for transportation plans shall include the final year of the transportation plan as a horizon year, or optionally, after consultation with the air pollution control agency and the public and consideration of comments, the MPO may elect the longest of the following periods: the first 10-year period of the transportation plan; the latest year in the implementation plan that contains a motor vehicle emissions budget; the year after the completion date of a regionally significant project if the project is included in the transportation improvement program or the project requires approval before the subsequent conformity determination.

  In addition, if the MPO elects to determine conformity for a period less than the last horizon year of the transportation plan, the conformity determination must include a regional emissions analysis for the last year of the transportation plan and for any year shown to exceed emission budgets from a previous conformity determination, for information only. The analysis years selected for the Sun Corridor MPO Conformity Analysis are described later in this section and include 2050 as the last year of the Sun Corridor MPO Regional Transportation Plan 2050 Update.

- Allows the substitution of transportation control measures in an implementation plan that achieve equivalent or greater emissions reductions than the control measure to be replaced and that are consistent with the schedule provided for control measures in the plan. The substitution or addition of a transportation control measure shall not require a new conformity determination for the transportation plan or a revision of the implementation plan.

- An additional 12-month grace period is provided after a missed deadline before conformity lapses on a transportation plan or program. This provision applies to two types of conformity determination deadlines: the deadline resulting from the requirement to determine conformity for the transportation plan and program at regular intervals and the deadlines resulting from the requirement for a conformity redetermination within two years of an EPA action approving or finding a motor vehicle emissions budget adequate.

- Requires a conformity SIP amendment addressing requirements from Title 40 CFR sections 93.105, 93.122(a)(4)(ii), and 93.125(c) of the federal transportation conformity regulations.

On March 14, 2012, EPA published the Transportation Conformity Rule Restructuring Amendments. This rule restructured sections 40 CFR 93.109 and 93.119 so that they apply to any new or revised federal air quality standard. The rule also allows any nonattainment area that EPA determines has clean air quality data to satisfy transportation conformity test requirements by using on-road emissions from the most recent year of clean data as the budgets for that standard rather than using the interim emissions tests per 40 CFR 93.119 (EPA, 2012a).

State Rule

State rules for transportation conformity were adopted on April 12, 1995, by the Arizona Department of Environmental Quality (ADEQ), in response to requirements in Section 176(c)(4)(C) of the Clean Air Act as amended in 1990 (ADEQ, 1995). These rules became effective upon their certification by the Arizona Attorney General on June 15, 1995 and, as required by the federal conformity rule, were submitted to EPA as a revision to the State transportation conformity SIP.

A State transportation conformity SIP has not received approval by EPA. Section 51.390(b) of the federal transportation conformity rule states: "Following EPA approval of the State conformity provisions (or a portion thereof) in a revision to the applicable implementation plan, conformity determinations would be governed by the approved (or approved portion of the) State criteria and procedures." The federal transportation conformity rule therefore still governs, as a State transportation conformity SIP has not yet been approved for this State.

The State rule specifies that MPOs (i.e., Sun Corridor MPO, for this region) must develop specific conformity guidance and consultation procedures and processes. The guidance document should address both the determination of "regional significance" status for individual transportation projects, the process by which regionally significant projects may be approved, and procedures for the public and interagency consultation processes to be used in the development of regional transportation plans, programs, and projects within the Sun Corridor MPO portion of the Pinal County nonattainment areas.

Case Law

On November 14, 1997, the U.S. Court of Appeals for the District of Columbia issued an opinion in *Sierra Club v. EPA* involving the 1995 transportation conformity amendment that allowed new nonattainment areas a one-year grace period. Under this ruling, conformity applied as soon as an area was designated nonattainment. The EPA published a final rule on April 10, 2000 in the *Federal Register* deleting 40 CFR 93.102(d) that allowed the grace period for new nonattainment areas (EPA, 2000). Then, on October 27, 2000, the FY 2001 EPA Appropriations bill included an amendment to Section 176(c) of the Clean Air Act that adds the one-year grace period to the statutory language.

On March 2, 1999, the U.S. Court of Appeals for the District of Columbia issued an opinion in *Environmental Defense Fund v. EPA* involving the 1997 transportation conformity amendments. In general, the court struck down 40 CFR 93.120(a)(2) which permitted a 120-day grace period after disapproval of a SIP; determined that the EPA must approve a "safety margin" prior to its use for conformity in 40 CFR 93.124(b); concluded that a submitted SIP budget must be found by EPA to be adequate, based on criteria found in 40 CFR 93.118(e)(4) before it can be used in a conformity determination; and ended a provision that allowed "grandfathered" projects to proceed during a conformity lapse.

Following the court ruling, the EPA and U.S. DOT issued guidance to address implementation of conformity requirements based on the court findings. The EPA issued guidance contained in a May 14, 1999 memorandum (EPA, 1999). In addition, the U.S. DOT issued guidance on June 18, 1999 that incorporates all U.S. DOT guidance in response to the court decision in a single document (U.S. DOT, 1999). On July 1, 2004, transportation conformity rule amendments were published in the *Federal Register* to incorporate provisions of the *Environmental Defense Fund v. EPA* court decision.

On October 20, 2006, the U.S. Court of Appeals for the District of Columbia filed an opinion vacating a provision of the transportation conformity rule at 40 CFR 93.109(e)(2)(v) that allowed areas to use the interim emission tests instead of the one-hour budgets. All other provisions regarding the use of the interim emissions tests remain unaffected by the court decision. Table 1 summarizes the criteria for conformity determinations for transportation projects, programs, and plans, as specified in amendments to the federal conformity rule.

CONFORMITY RULE REQUIREMENTS

The federal regulations identify general criteria and procedures that apply to all transportation conformity determinations, regardless of pollutant and implementation plan status. These include:

1) Conformity Tests - Sections 93.118 and 93.119 specify emission tests (budget and interim emissions) that the TIP and RTP must satisfy in order for a determination of conformity to be found. The final transportation conformity rule requires a submitted SIP motor vehicle emissions budget to be affirmed as adequate by EPA prior to use for making conformity determinations. The budget must be used on or after the effective date of EPA's finding of adequacy.

2) Methods / Modeling:

   Latest Planning Assumptions - Section 93.110 specifies that conformity determinations must be based upon the most recent planning assumptions in force at the time the conformity analysis begins, which is "the point at which the MPO or other designated agency begins to model the impact of the proposed transportation plan or TIP on travel and/or emissions. New data that becomes available after an analysis begins is required to be used in the conformity determination only if a significant delay in the analysis has occurred, as determined through interagency consultation". This section of the conformity rule also requires reasonable assumptions to be made regarding transit service and changes in projected fares. All analyses were conducted using the latest planning assumptions and emissions models in force at the time the conformity analysis started on January 27, 2026.

TABLE 1.
CONFORMITY CRITERIA FROM THE FINAL RULE

Applicability	Pollutant	Section	Requirement
All Actions at All Times	CO, Ozone, PM-10 PM-2.5	93.110	Latest Planning Assumptions
		93.111	Latest Emissions Model
		93.112	Consultation
Transportation Plan (RTP)	CO, Ozone, PM-10 PM-2.5	93.113(b)	TCMs
		93.118 and/or 93.119	Emissions Budget and/or Interim Emissions
TIP	CO, Ozone, PM-10 PM-2.5	93.113(c)	TCMs
		93.118 and/or 93.119	Emissions Budget and/or Interim Emissions
Project (From a Conforming Plan and TIP)	CO, Ozone, PM-10 PM-2.5	93.114	Currently Conforming Plan and TIP
		93.115	Project From a Conforming Plan and TIP
	CO, PM-10, PM-2.5	93.116	CO, PM-10, and PM-2.5 Hot Spots
	PM-10, PM-2.5	93.117	PM-10 and PM-2.5 Control Measures
Project (Not From a Conforming Plan or TIP)	CO, Ozone, PM-10 PM-2.5	93.113(d)	TCMs
		93.114	Currently Conforming Plan and TIP
	CO, PM-10, PM-2.5	93.116	CO, PM-10, and PM-2.5 Hot Spots
	PM-10, PM-2.5	93.117	PM-10 and PM-2.5 Control Measures
	CO, Ozone, PM-10 PM-2.5	93.118 and/or 93.119	Emissions Budget and/or Interim Emissions

Source: Adapted from (EPA, 2012b), Section 93.109(b), “Table 1 - Conformity Criteria”.

Latest Emissions Models - Section 93.111 requires that the latest emission estimation models specified for use in SIPs must be used for the conformity analysis.

3) Timely Implementation of TCMs - Section 93.113 provides a detailed description of the steps necessary to demonstrate that the TIP and RTP are providing for the timely implementation of TCMs, as well as demonstrate that the plan and/or program is not interfering with this implementation. Since there are no applicable plans for the West Pinal PM-10 Nonattainment Area and West Central Pinal PM-2.5 Nonattainment Area, a review of Transportation Control Measure implementation has not been provided.

4) Consultation - Section 93.105 requires that the conformity determination be made in accordance with the consultation procedures outlined in the federal regulations. These include:

    - The Sun Corridor MPO is required to provide reasonable opportunity for consultation with local air quality and transportation agencies, state air and transportation agencies, the U.S. DOT and EPA (Section 93.105(c)(1)).

    - The Sun Corridor MPO is required to establish a proactive public involvement process which provides opportunity for public review and comment prior to taking formal action on a conformity determination (Section 93.105(e)).

AIR QUALITY PLANS AND DESIGNATIONS

Pinal County Nonattainment Areas

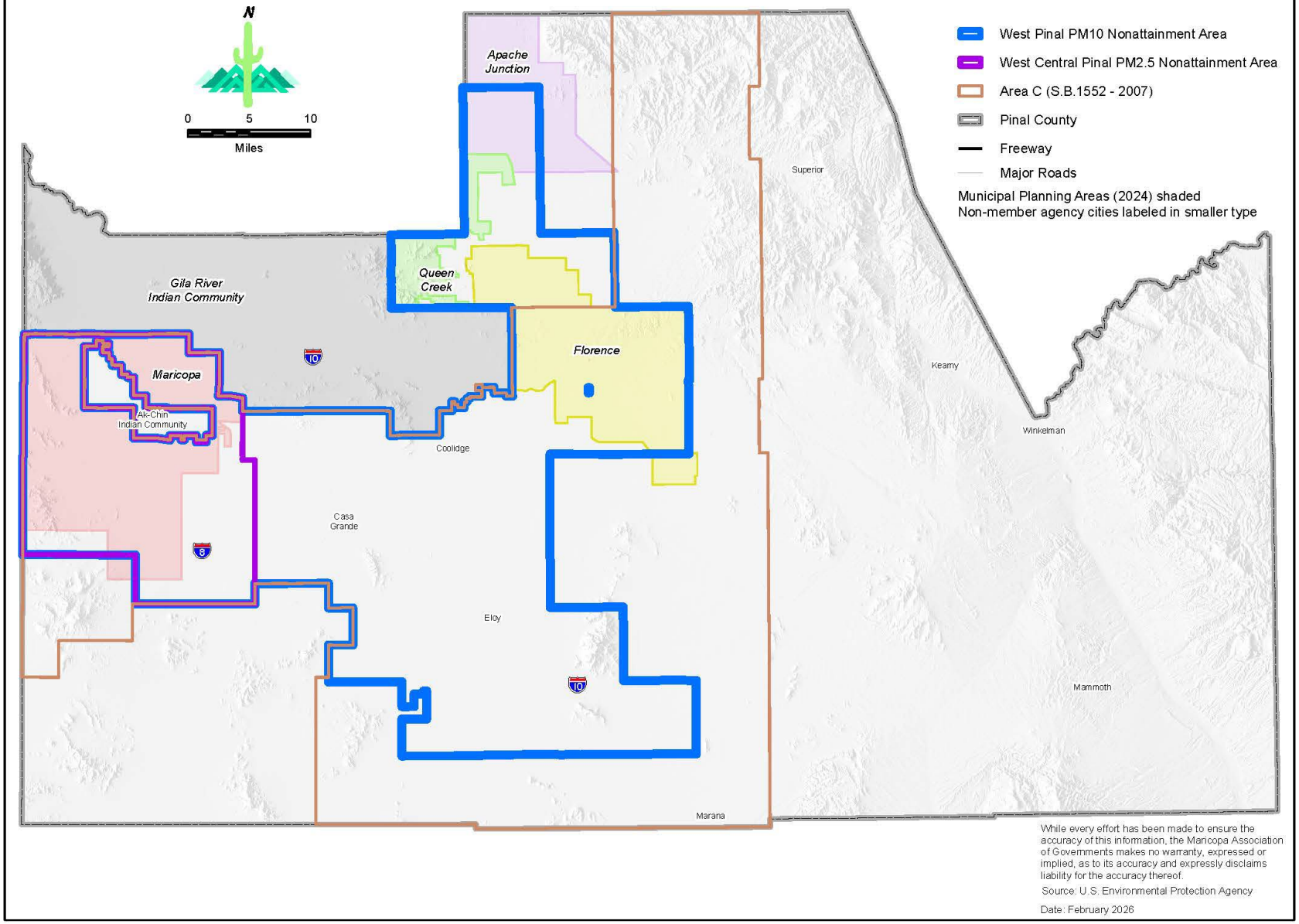
On February 3, 2011, EPA published the final rule designating a portion of Pinal County as nonattainment for the 2006 24-hour PM-2.5 standard based on 2006-2008 data, effective March 7, 2011. The West Central Pinal PM-2.5 Nonattainment Area covers approximately 323 square miles in the west central part of Pinal County.

Also, on May 31, 2012, EPA published the final rule designating the West Pinal PM-10 Nonattainment Area, effective July 2, 2012. EPA classified the nonattainment area as Moderate. The West Pinal PM-10 Nonattainment Area covers approximately 1,326 square miles in the western half of Pinal County. On June 24, 2020, EPA published the final rule to determine that the West Pinal PM-10 nonattainment area did not attain the PM-10 standard by the December 31, 2018 attainment date and to reclassify the nonattainment area as Serious, effective July 24, 2020 (EPA, 2020).

Nonattainment Boundaries

The West Pinal PM-10 Nonattainment Area and West Central Pinal PM-2.5 Nonattainment Area are shown in Figure 2.

Figure 2: Air Quality Nonattainment Areas for the Pinal County Area, Arizona



While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.

Source: U.S. Environmental Protection Agency

Date: February 2026

Portions of both nonattainment areas are located within the metropolitan planning area boundaries of both MAG and the Sun Corridor Metropolitan Planning Organization.

Attainment Status

At the time of designation, EPA indicated that the State of Arizona is required to submit a SIP for the West Central Pinal PM-2.5 Nonattainment Area within three years following the March 7, 2011 effective date. On September 4, 2013, EPA published in the *Federal Register* a determination that the West Central Pinal PM-2.5 Nonattainment Area has attained the 2006 24-hour PM-2.5 standard based on clean data at the monitor during the 2010-2012 monitoring period and issued a clean data finding, effective October 4, 2013. On October 3, 2019, EPA published a final rule with a determination that the West Central Pinal PM-2.5 Nonattainment Area attained the 2006 24-hour PM-2.5 standard by the December 31, 2017 attainment date based on 2015-2017 data, effective November 4, 2019.

In the May 31, 2012 final rulemaking, EPA indicated that the State of Arizona is required to submit a revision to the SIP for the West Pinal PM-10 Nonattainment Area within 18 months following the July 2, 2012 effective date. On December 21, 2015, the Arizona Department of Environmental Quality submitted the 2015 West Pinal Moderate PM-10 Nonattainment Area SIP to EPA. Also, on May 1, 2017, EPA approved SIP revisions that concern particulate matter emissions from construction sites, agricultural activity, and other fugitive dust sources.

On January 8, 2021, EPA published a proposed rule in the *Federal Register* to approve in part and disapprove in part the 2015 West Pinal Moderate PM-10 Nonattainment Area Plan prepared by the Arizona Department of Environmental Quality. In the notice, EPA proposed to approve the base year 2008 emissions inventory for direct PM-10 and to disapprove the remaining elements of the plan. On May 17, 2021, the Arizona Department of Environmental Quality withdrew the Moderate area attainment plan submission.

On July 23, 2021, EPA published a final rule finding that Arizona had not submitted a required revision to the Arizona State Implementation Plan for the West Pinal County nonattainment area addressing the Clean Air Act requirements for a Moderate area attainment plan, related rules, and other analyses needed to attain the 1987 24-hour particulate matter (PM-10) air quality standard by December 31, 2018 (EPA, 2021). The EPA Finding of Failure to Submit final rule was effective August 23, 2021. The finding established a deadline of 24 months after the effective date for EPA to promulgate a Federal Implementation Plan to address the Moderate area requirements, unless prior to the deadline, Arizona submits and EPA approves the State's Moderate area PM-10 attainment plan as meeting all of the requirements of the Clean Air Act. The final rule provided for the imposition of the emissions offset sanctions 18 months, and highway sanctions 24 months after the effective date, if the required complete Moderate area PM-10 attainment plan was not submitted before these deadlines. In the notice, EPA also indicated that the Clean Air Act does not require sanctions or a Federal Implementation Plan if the State and EPA take timely action to remedy the finding.

On June 1, 2022, the 2022 Serious Area Particulate Plan for PM-10 for the West Pinal County Nonattainment Area was submitted to EPA. On November 30, 2022, EPA issued a letter to ADEQ finding that the 2022 Serious Area Particulate Plan for PM-10 for the West Pinal County Nonattainment Area meets the minimum criteria for completeness terminating the sanction clocks started by EPA's July 23, 2021 finding of failure to submit.

Also, on July 21, 2023, EPA published a final rule to determine that the West Pinal PM-10 Nonattainment Area did not attain the PM-10 national ambient air quality standards by the December 31, 2022 attainment date, effective August 21, 2023. A state implementation plan (SIP) revision was required to be submitted to EPA no later than December 31, 2023 that among other elements, provides for expeditious attainment of the PM-10 standard and for a five percent annual reduction in PM-10 emissions in the nonattainment area. In December 2023, the Arizona Department of Environmental Quality officially submitted the 2023 Five Percent Particulate Plan for PM-10 for the West Pinal County Nonattainment Area. On June 14, 2024, a completeness finding was received from EPA on the 2023 Five Percent Particulate Plan for PM-10 for the West Pinal County Nonattainment Area that determined that it includes all SIP elements required as a result of the July 21, 2023 finding of failure to attain and all outstanding Serious area elements.

CONFORMITY TEST REQUIREMENTS

Pinal County Nonattainment Areas

PM-10

On May 31, 2012, EPA designated the West Pinal PM-10 Nonattainment Area in Pinal County, effective July 2, 2012 (EPA, 2012c). EPA classified the nonattainment area as Moderate. The West Pinal PM-10 Nonattainment Area covers approximately 1,326 square miles in the western half of Pinal County. On June 24, 2020, EPA published the final rule to determine that the West Pinal PM-10 Nonattainment Area did not attain the PM-10 standard by the December 31, 2018 attainment date and to reclassify the nonattainment area as Serious, effective July 24, 2020 (EPA, 2020).

On December 21, 2015, the Arizona Department of Environmental Quality submitted the 2015 West Pinal Moderate PM-10 Nonattainment Area SIP to EPA. On May 17, 2021, the Arizona Department of Environmental Quality withdrew the 2015 West Pinal Moderate PM-10 Nonattainment Area Plan prepared by the Arizona Department of Environmental Quality.

On June 1, 2022, the 2022 Serious Area Particulate Plan for PM-10 for the West Pinal County Nonattainment Area was submitted to EPA. On November 30, 2022, EPA issued a letter finding that the 2022 Serious Area Particulate Plan for PM-10 for the West Pinal County Nonattainment Area meets the minimum criteria for completeness terminating the sanction clocks started by EPA's July 23, 2021 finding of failure to submit. EPA has not approved or found adequate the motor vehicle emissions budget.

Also, on July 21, 2023, EPA published a final rule to determine that the West Pinal PM-10 Nonattainment Area did not attain the PM-10 national ambient air quality standards by the December 31, 2022 attainment date and required a new state implementation plan (SIP) revision that provides for expeditious attainment of the PM-10 standard and for a five percent annual reduction in PM-10 emissions in the nonattainment area, effective August 21, 2023 (EPA, 2023). On December 15, 2023, the 2023 Five Percent Plan for PM-10 for the West Pinal County Nonattainment Area was submitted to EPA. At this time, EPA has not approved or found adequate the motor vehicle emissions budgets.

Since there are no PM-10 emission budgets that have been found to be adequate or approved by EPA, an Action/Baseline analysis was performed in accordance with the EPA transportation conformity rule (EPA, 2012b). The baseline network includes regionally significant highways open to traffic and transit service in operation by December 31, 2025 and regionally significant projects, regardless of funding source, that met one of the following criteria: are under construction, have completed the NEPA process, undergoing right of way acquisition by the scheduled start of the conformity analysis, on January 27, 2026, or regionally significant projects included in the baseline scenario for the previous conformity analysis that was completed in December 2025. These criteria comply with Section 93.119(h) of the EPA conformity regulations. Each action network includes regionally significant highway and transit projects from the MAG and Sun Corridor MPO TIPs and RTPs in the West Pinal PM-10 Nonattainment Area, that are scheduled to be open to the public by 2030, 2040, and 2050, respectively.

Also, for information, MAG conducted a budget test using the 2026 budget established in the submitted 2023 Five Percent Particulate Plan for PM-10 for the West Pinal Nonattainment Area. The 2023 Five Percent Particulate Plan for PM-10 establishes a 2026 budget of 42.5 metric tons per day for the attainment year. The budget includes PM-10 emissions from vehicle exhaust, tire wear and brake wear, road construction, reentrained dust from vehicle travel on paved roads, and fugitive dust from vehicle travel on public and private (non-agricultural) unpaved roads.

PM-2.5

On February 3, 2011, EPA designated the West Central Pinal PM-2.5 Nonattainment Area in Pinal County, effective March 7, 2011 (EPA, 2011). On September 4, 2013, EPA published in the *Federal Register* a determination that the West Central Pinal nonattainment area has attained the 2006 24-hour PM-2.5 standard based on clean data at the monitor during the 2010-2012 period (EPA, 2013).

Conformity analyses must also be performed for the PM-2.5 nonattainment area, even if EPA issues a clean data finding. On October 3, 2019, EPA published a final rule with a determination that the West Central Pinal PM-2.5 Nonattainment Area attained the 2006 24-hour PM-2.5 standard by the December 31, 2017 attainment date based on 2015-2017 data, effective November 4, 2019 (EPA, 2019).

Since EPA or the Arizona Department of Environmental Quality have not determined that nitrogen oxide (NOx) emissions are an insignificant contributor to the PM-2.5 attainment problem, per Section 93.119(f)(9) of EPA conformity regulations, NOx, as well as PM-2.5 emissions from onroad mobile sources, were included in the Action/Baseline analysis for the Pinal PM-2.5 nonattainment area.

Since there are no PM-2.5 and NOx emission budgets that have been found to be adequate or approved by EPA, an Action/Baseline analysis was performed in accordance with the latest EPA conformity guidance (EPA, 2012b). The baseline network includes regionally significant highways open to traffic and transit service in operation by December 31, 2025 and regionally significant projects, regardless of funding source, that met one of the following criteria: are under construction, have completed the NEPA process, undergoing right of way acquisition by the scheduled start of the conformity analysis, on January 27, 2026, or regionally significant projects included in the baseline scenario for the previous conformity analysis that was completed in December 2025. These criteria comply with Section 93.119(h) of the EPA conformity regulations. Each action network includes regionally significant highway and transit projects from the MAG and Sun Corridor MPO TIPs and RTPs in the West Central Pinal PM-2.5 Nonattainment Area, that are scheduled to be open to the public by 2030, 2040, and 2050, respectively.

ANALYSIS YEARS

Pinal County Nonattainment Areas

In selecting Action/Baseline analysis years for the Pinal County nonattainment areas, which do not have approved or adequate motor vehicle emissions budgets, the conformity rule (Section 93.119(g)) indicates that the years must be no more than ten years apart, the first year must be no more than five years beyond the year in which the conformity determination is being made, and the last year must be aligned with the transportation plans (i.e., the MOMENTUM 2050 MAG Regional Transportation Plan Update and the Sun Corridor MPO Regional Transportation Plan 2050 Update, both of which contain projects in the Pinal nonattainment areas).

These three criteria are met by the years 2030, 2040, and 2050. For the Sun Corridor MPO Conformity Analysis, onroad mobile source emissions were estimated for the Action/Baseline scenarios for 2030, 2040, and 2050. PM-10 emissions were estimated for the West Pinal PM-10 Nonattainment Area, while PM-2.5 and nitrogen oxide (NOx) emissions were estimated for the West Central Pinal PM-2.5 Nonattainment Area.

Also, for informational purposes, MAG conducted a conformity budget test using the budget established in the submitted 2023 Five Percent Particulate Plan for PM-10 for the West Pinal County Nonattainment Area. The analysis years include 2026, 2030, 2040, and 2050. The year 2026 was modeled since it is the attainment year in the 2023 Five Percent Particulate Plan for PM-10. The years 2030 and 2040 were modeled since these are intermediate years that meet the federal conformity requirement that analysis years be no more than ten years apart. The year 2050 was modeled since it is the last year of MOMENTUM 2050 MAG Regional Transportation Plan Update and the Sun Corridor MPO Regional Transportation Plan 2050 Update.

2 LATEST PLANNING ASSUMPTIONS

The Clean Air Act states that “the determination of conformity shall be based on the most recent estimates of emissions, and such estimates shall be determined from the most recent population, employment, travel, and congestion estimates as determined by the MPO or other agency authorized to make such estimates.” On January 18, 2001, the U.S. DOT issued guidance developed jointly with EPA to provide additional clarification concerning the use of latest planning assumptions in conformity determinations (U.S. DOT, 2001). In December 2008, EPA published revisions to the 2001 guidance, “Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations” (EPA, 2008b).

Key elements of this guidance are identified below:

- Areas are strongly encouraged to review and strive towards regular five-year updates of planning assumptions, especially population, employment, and vehicle registration assumptions.

- The latest planning assumptions must be derived from the population, employment, travel, and congestion estimates that have been most recently developed by the MPO (or other agency authorized to make such estimates) and approved by the MPO.

- Conformity determinations that are based on information that is older than five years should include written justification for not using more recent information. For areas where updates are appropriate, the conformity determination should include an anticipated schedule for updating assumptions.

The latest planning assumptions for conformity analyses for the MAG transportation modeling domain covering Maricopa and Pinal counties, are summarized in Table 2. The methodology and scheduled updates for the planning assumptions are discussed below.

The conformity regulations (EPA, 2012b) indicate that “the conformity determination...must be based upon the most recent planning assumptions in force at the time the conformity analysis begins...as determined through the interagency consultation process.” It has been determined through the consultation process that the “time that the conformity analysis begins” will be the day that the first traffic assignment is submitted for travel demand modeling for the Sun Corridor MPO Conformity Analysis. For this conformity analysis, “time that the conformity analysis begins” was January 27, 2026.

TABLE 2. LATEST PLANNING ASSUMPTIONS FOR SUN CORRIDOR MPO CONFORMITY DETERMINATIONS FOR THE MAG TRANSPORTATION MODELING DOMAIN COVERING MARICOPA AND PINAL COUNTIES

Assumption	Source	MAG Models	Next Scheduled Update
Population and Employment	Under Arizona Governor's Executive Order 2011-04, official County projections are updated every 3 to 4 years. These official projections are used by all agencies for planning purposes. The Arizona State Demographer prepared a new set of Maricopa County projections based on the U.S. Census Bureau's 2017-2021 American Community Survey. Employment projections were prepared by Dr. George Hammond at the University of Arizona's Economic and Business Research Center in December 2022. MAG developed a set of subcounty population and employment projections for Maricopa County that are consistent with the State Demographer's population projections. The MAG Regional Council approved the subcounty socioeconomic projections in June 2023. In addition, Central Arizona Governments (CAG) approved the Pinal County subcounty socioeconomic projections, based on the State's Pinal County projections, in June 2023. The MAG Traffic Analysis Zone System was updated to reflect the latest socioeconomic changes in July 2023.	AZ-SMART (UrbanSim)	Under the Governor's Executive Order 2011-04, official county socioeconomic projections will be developed by the Arizona State Demographer. According to the schedule set forth in the Executive Order, the State Demographer will produce county level projections of population by December 2025. Following that release, MAG will produce subcounty population and employment projections by June 2026.
Traffic Counts	The highway models were validated for the 2018 base year based on traffic count data from approximately 1,000 traffic count locations, collected by MAG in 2018-2019 during peak seasons. In order to evaluate how well the model aligns with more recent traffic trends, the MAG transportation models were also compared against 730 count locations collected in 2023-2024 for the 2024 model run using the same version of the model that is calibrated to the base year of 2018.	MAG Travel Demand Models	Region-wide traffic counts are typically collected by MAG every 3-4 years, depending on available funds and model base year definition. MAG has completed new traffic count data collection during peak seasons of 2023 - 2025.

TABLE 2 (CONTINUED). LATEST PLANNING ASSUMPTIONS FOR SUN CORRIDOR MPO CONFORMITY DETERMINATIONS FOR THE MAG TRANSPORTATION MODELING DOMAIN COVERING MARICOPA AND PINAL COUNTIES

Assumption	Source	MAG Models	Next Scheduled Update
Vehicle Miles of Travel	MAG's Activity Based Model is based on the Coordinated Travel Regional Activity Based Modeling Platform (CT-RAMP2) family of Activity Based Models for travel demand forecasting. The calibration work for the major components of the Activity Based Model has been completed. Datasets used in the model calibration process include 2017 Household and Establishment surveys and the 2019 transit on-board survey. In addition, 2013-2017 ACS PUMS and MAG socioeconomic data are also used to generate a synthetic population which is input to the Activity Based Model. Activity Based Model components such as long-term choice for mandatory activity (work and school) location models, day-level models for activity participation, tour formation, and other tour and trip detail models such as time-of-day choice and mode choice were recalibrated based on the 2017 Household Travel Survey and the 2019 transit on-board survey. The truck model was recalibrated based on the 2017 ATRI data, 2015 StreetLight data, and 2013 Transearch data. The external travel model was recalibrated in 2014 based on regional growth projections for Arizona and neighboring states. Incremental updates and improvements were introduced to the model to reflect network changes, socioeconomic forecast changes, and changes in the traffic zone system. MAG conducted a comprehensive revalidation of the Activity Based Model using 2018-2019 traffic counts and 2018 speed data. The overall calibration year for the model is 2018 and the latest base year based on a comprehensive validation is 2018.	MAG Travel Demand Models	MAG has completed a new regional household travel survey to capture behavioral shifts triggered in the post-pandemic era that may impact activity and travel behavior in the region. Additionally, MAG recently completed a travel survey to better understand the travel behavior of the Arizona State University student population. The MAG forecasting model is currently being updated to a new base year of 2025 based on the above travel surveys and other recent data sources. The major updates related to model recalibration were completed at the end of calendar year 2025, but some additional refinements and testing are currently ongoing. The model is expected to be ready for use after the end of Fiscal Year 2026 (June 2026) following sensitivity tests to confirm that the model response is logical.

TABLE 2 (CONTINUED). LATEST PLANNING ASSUMPTIONS FOR SUN CORRIDOR MPO CONFORMITY DETERMINATIONS FOR THE MAG TRANSPORTATION MODELING DOMAIN COVERING MARICOPA AND PINAL COUNTIES

Assumption	Source	MAG Models	Next Scheduled Update
Speeds	The highway models were validated using peak season average speed based on 50 million traffic speed records purchased from HERE for calendar year 2018. To evaluate how well the model aligns with more recent traffic trends, MAG also used 2024 INRIX regionwide speed data to compare the speed estimates produced by the transportation model with the 2024 model run.	MAG Travel Demand Models	Commercial travel speed data are acquired by MAG periodically to validate the transportation models. MAG also utilizes commercial speed data for future estimation and model calibration purposes. MAG has access to, and has utilized new speed data that were required for the ongoing model calibration and validation to the new base year. MAG has also collaborated with ADOT and capitalized on ADOT commercial speed data contracts.
Vehicle Registrations	For this conformity analysis, the 2025 vehicle registration data provided by ADOT in January 2026 were used as MOVES source population, age distribution, and Alternative Vehicle Fuel and Technology (AVFT) input data by decoding the vehicle identification numbers (VIN) and classifying them into MOVES source types using the scripts developed by ERG.	MOVES4	MAG will decode the latest VIN registration data provided by ADOT for MOVES source types and AVFT data for future conformity determinations.
Implementation Measures	Latest implementation status of commitments in prior SIPs.	N/A	Updated for every conformity analysis.

POPULATION AND EMPLOYMENT

In accordance with the Governor's Executive Order 2011-04, official county level population projections based on the 2017-2021 American Community Survey have been developed by the Arizona State Demographer. The State Demographer completed the county level projections in December 2022. MAG prepared subcounty socioeconomic projections for Maricopa County that were adopted by the MAG Regional Council in June 2023. The Central Arizona Governments (CAG) approved subcounty population projections for Pinal County in June 2023.

The travel and speed estimates produced by the MAG transportation models for the analysis years in the Sun Corridor MPO Conformity Analysis are based on the MAG and CAG subcounty population and employment projections that are consistent with the 2017-2021 American Community Survey.

Methodology

The Arizona State Demographer prepared the official Arizona population projections by county, using 2017-2021 American Community Survey data as the base. MAG used those population projections consistent with the 2017-2021 American Community Survey. These projections for Maricopa County were distributed to smaller geographic areas by MAG using the latest available data and a state-of-the-art land use model system called AZ-SMART. The nationally recognized UrbanSim microsimulation model was integrated into AZ-SMART and used to allocate county projections of households and employment to land use parcels based on measures such as accessibility to employment, adjacent land uses, highway access, and proximity to other development.

Population and employment at the land use parcel level in the MAG planning area were aggregated to TAZs using AZ-SMART. The subcounty socioeconomic projections developed with the AZ-SMART model were approved by the MAG Regional Council in June 2023.

Since the MAG transportation modeling area includes Pinal County, in collaboration with the Central Arizona Governments (CAG), MAG has also prepared socioeconomic projections for Pinal County. MAG prepared the projections at the traffic analysis zone (TAZ) level by controlling to the County control totals approved by CAG. AZ-SMART, the MAG socioeconomic modeling system, was utilized to produce the MPA and TAZ projections for Pinal County. The TAZ projections were reviewed by the CAG Management Committee in June 2023.

Next Scheduled Update

Under the Governor's Executive Order 2011-04, official county socioeconomic projections will be developed by the Arizona State Demographer. According to the schedule set forth in the Executive Order, the State Demographer will develop new county level projections

of population by December 2025. MAG will then develop a set of subcounty population and employment projections for Pinal County that are consistent with the State's population projections.

TRAFFIC COUNTS

The highway traffic volumes estimated by the MAG transportation models were validated in 2021 for the 2018 base year, using traffic counts from approximately 1,000 freeway and arterial locations. The traffic counts were collected by MAG during peak seasons of 2018-2019 in Maricopa and Pinal counties. MAG transportation models were recalibrated based on the travel surveys conducted in 2017. New model validations are based on the model runs with updated socioeconomic input files and recalibrated transportation models. Use of the most recent traffic counts to validate the models is consistent with the federal conformity guidance which strongly encourages areas to update the planning assumptions for network-based travel models at least every five years (EPA, 2008b).

Methodology

MAG uses TransCAD software, as well as custom developed programs, to perform travel demand modeling. TransCAD provides a geographic information systems (GIS) interface that facilitates transportation modeling. The MAG transportation models follow activity-based model procedure that includes accessibility calculation, population synthesis, long-term choice for mandatory activities such as work and school location, day-level models for activity participation, tour formation, time allocation, tour-level models such as time-of-day choice and mode choice, and traffic/transit assignment. The mode choice model is sensitive to highway and transit travel times, as well as pricing variables. Highway and transit route choice is determined in the assignment step, based on operating costs, travel times, and distances. Capacity-restrained traffic assignments are performed for the AM peak period, midday, the PM peak period, and nighttime. A feedback loop between traffic assignment for the current loop and accessibility calculation for the next loop is utilized to achieve near-equilibrium highway speeds.

Next Scheduled Update

Region-wide traffic counts are typically collected by MAG every 3-4 years. MAG conducts incremental updates, recalibration and validation of the regional model on an on-going basis in order to maintain relevancy of the regional forecast and as new data sets become available. Rapid changes in technology and transportation data field change the ways regional models are developed and maintained. MAG model development plans reflect these changes and capitalize on the most recent offerings in transportation data. MAG has completed new traffic count data collection during peak seasons of 2023 - 2025.

VEHICLE MILES OF TRAVEL

MAG travel forecasting model is calibrated based on data from the 2017 household travel survey and 2019 regional transit on-board survey.

The transportation models simulate peak and daily traffic volumes on more than 30,000 highway links, as well as the transit trips on bus and light rail routes in the MAG transportation modeling domain covering Maricopa and Pinal counties. Vehicle miles of travel (VMT) by link, output by the highway assignment process, are input to the MAG MOVESLink4 model used to estimate onroad mobile source emissions for conformity analyses.

Transportation model estimates of vehicle volumes are validated using actual traffic counts. The MAG transportation models were validated against over 1,000 count locations collected in 2018-2019 for the 2018 base year. Table 3 summarizes the validation results by area type for freeways and arterials. Both the R-squared (R^2) and Root Mean Square Error (RMSE) statistics indicate that there is a good fit between transportation model-estimated 2018 weekday traffic volumes and traffic count data.

In order to evaluate how well the model aligns with more recent traffic trends, the MAG transportation models were also compared against 730 count locations collected in 2023-2024 for the 2024 model run using the same version of the model that is calibrated to the base year of 2018. Table 4 summarizes the comparison results by area type for freeways and arterials. Both the R-squared (R^2) and Root Mean Square Error statistics indicate that there is a good fit between transportation model-estimated 2024 weekday traffic volumes and traffic count data.

R^2: The coefficient of determination, or R^2, is a measure that provides information about the goodness of fit of a model. In the context of regression, it is a statistical measure of how well the regression line approximates the actual data.

Percent RMSE: The Root Mean Square Error of a sample is the quadratic mean of the differences between the observed values and predicted ones. Percent RMSE is the ratio of “RMSE” over “mean of observed values” in percent form.

$$RMSE = \sqrt{\frac{\sum_{i=1}^{N}\left[(Count_i - Model_i)^2\right]}{N}}$$

and

$$\%RMSE = \frac{RMSE}{\left(\frac{\sum_{i=1}^{N} Count_i}{N}\right)} \times 100$$

where N is the number of observed values.

Typically, for a regional model comparable to the size of the MAG Activity-Based Model, an overall R^2 over 0.85 and an RMSE under 40% is considered a good fit. The MAG model validation statistics surpass these requirements with an overall R^2 of 0.961 and an RMSE of 26.5% for 2018 and an overall R^2 of 0.955 and an RMSE of 27.7% for 2024. A more detailed statistics by Area Type is summarized in Table 3 and Table 4 below.

TABLE 3.
AGGREGATED MODEL VALIDATION RESULTS
MODEL-ESTIMATED 2018 WEEKDAY VOLUMES VS. 2018 TRAFFIC COUNTS

	Freeways and Arterials	
Area Type	**R^2**	**% RMSE**
CBD	0.974	24.5%
Outlying CBD	0.967	23.0%
Mixed Urban	0.943	24.0%
Suburban	0.877	33.6%
Rural	0.895	36.1%
All	0.961	26.5%

TABLE 4.
AGGREGATED MODEL COMPARISON RESULTS
MODEL-ESTIMATED 2024 WEEKDAY VOLUMES VS. 2023-2024 TRAFFIC COUNTS

	Freeways and Arterials	
Area Type	**R^2**	**% RMSE**
CBD	0.981	33.0%
Outlying CBD	0.959	25.6%
Mixed Urban	0.958	22.5%
Suburban	0.889	29.2%
Rural	0.941	23.8%
All	0.955	27.7%

Next Scheduled Update

MAG completed a new regional household travel survey to capture behavioral shifts triggered in the post-pandemic era that may impact activity and travel behavior in the region. Additionally, MAG has also recently completed a travel survey to better understand the travel behavior of the Arizona State University student population. The MAG forecasting model is currently being updated to a new base year of 2025 based on the above travel surveys and other recent data sources. The major updates related to model recalibration were completed at the end of the calendar year 2025, but some additional refinements and testing are currently ongoing. The model is expected to be ready for use and fully deployed before the end of FY 2026 (June 2026) following sensitivity tests to confirm that the model response is logical.

SPEEDS

Speeds obtained from the capacity-restrained traffic assignments are used to recompute link travel times that are then fed-back into the travel demand modeling chain. Accessibility calculation, long-term choice for mandatory activities such as work and school location, day-level models for activity participation, tour formation, time allocation, and tour-level models such as time-of-day choice and mode choice of the chain are executed until PM peak period trip tables and link volumes are in equilibrium. In addition to vehicle miles of travel, the MAG transportation models calculate system performance measures such as vehicle hours of travel and volume to capacity ratios.

MAG acquires commercial speed data from third party vendors and uses the data to compare with model-estimated speeds. MAG purchased 2018 speed data from HERE that was used to validate the speeds estimated by the MAG transportation models in 2021, as discussed in the Methodology section below.

Methodology

MAG used the 2018 HERE regionwide speed data to validate the speed estimates produced by the transportation model for the 2018 model run. In order to evaluate how well the model aligns with more recent traffic trends, MAG also used 2024 INRIX regionwide speed data to compare the speed estimates produced by the transportation model with the 2024 model run. The model-estimated speeds are in reasonable agreement with observed arterial and freeway speeds during the peak and off-peak periods.

Next Scheduled Update

MAG has access to commercial speed data from INRIX continuously. The recalibrated model will be validated with new speed and traffic count data as appropriate.

VEHICLE REGISTRATIONS

MAG contracted with Eastern Research Group, Inc. (ERG) to decode vehicle identification numbers (VINs) from Arizona registration data and classify vehicles registered in Maricopa and Pinal counties into the vehicle types, fuel types, and model years needed as inputs to the MOVES model. For the Sun Corridor MPO Conformity Analysis, the vehicle source type populations were derived using ERG's vehicle classification scripts, the 2025 vehicle registration data provided in January 2026 by Arizona Department of Transportation, the transit bus data (see Chapter 4, Table 18), and the MOVES4 default source type population data (see Table 10). ERG's vehicle classification scripts decode a Vehicle Identification Number (VIN) for each vehicle in the ADOT vehicle registration data, extract vehicles registered in Maricopa and Pinal counties, remove non-road equipment or trailers, remove duplicate entries, classify the VIN decoded data into MOVES source type categories, and generate the MOVES source type population input for Maricopa and Pinal counties by totaling populations grouped by source type. Since vehicle registration and VIN decoded data do not provide short-haul or long-haul truck population, the MOVES4 default source type population data are used to derive short-haul/long-haul fractions for single unit trucks (Source Types 52 and 53) and combination trucks (Source Types 61 and 62). The source type population derived using ERG's vehicle classification scripts is provided in Table 10.

For this conformity analysis, MAG used MOVES4 to project source type population for each horizon year by applying MOVES5 default source type population growth rate between the calendar year 2025 and the horizon year for each source type as shown in

Table 15. MOVES5 default source type population growth rates were derived from the up-to-date vehicle stock estimates of Annual Energy Outlook (AEO) 2023. To verify adequacy of applying MOVES5 default source type population growth rate to this region, historic source type population growth rates were compared between the U.S. and Arizona. According to the EPA Population and Activity of Onroad Vehicles, November 2024, MOVES5 default source type population for pre-2023 were mainly derived from the FHWA's annual Highway Statistics report (EPA, 2024). For the vehicle population growth in the FHWA's annual Highway Statistics report, Arizona has less annual growth rate than the U.S. for the past six years (2017-2022). Therefore, applying MOVES5 default source type population growth rates to Maricopa County for the horizon years appears to represent potential sales growth in this region adequately and conservatively.

Finally, source type population for the selected nonattainment area was extracted using a ratio of the population projections between the county and the nonattainment area. The population projections for future years were developed using the socioeconomic projection data approved by the MAG Regional Council in June 2023.

IMPLEMENTATION MEASURES

Pinal County Nonattainment Areas

For the Pinal County nonattainment areas, emission reduction credit was assumed for the committed measures in the SIPs including the measures in Table 5 for performing the conformity analysis. The West Pinal PM-10 Nonattainment Area includes a small portion of Area A, where participation in the Vehicle Inspection/Maintenance Program is required for all vehicles registered in Area A. These control measures reduce tailpipe emissions of PM-10 as well as ozone precursor emissions, volatile organic compounds and nitrogen oxides.

TABLE 5.
COMMITTED MEASURES IN THE WEST PINAL
PM-10 NONATTAINMENT AREA USED FOR EMISSION REDUCTION CREDIT

Measure #	Reference	Measure Description	Pollutant(s)
4	MAG 2009 Eight-Hour Ozone Maintenance Plan	Tougher Enforcement of Vehicle Registration and Emission Test Compliance	PM-10
6	MAG 2009 Eight-Hour Ozone Maintenance Plan	Expansion of Area A Boundaries (HB 2538)	PM-10

3 TRANSPORTATION MODELING

The transportation modeling performed for the Sun Corridor MPO Conformity Analysis for a proposed amendment to the FY 2025-2029 Sun Corridor MPO Transportation Improvement Program and Sun Corridor MPO Regional Transportation Plan 2050 Update is based on the latest planning assumptions, as required in the federal conformity rule (40 CFR 93.110) and documented in Chapter 2. A summary of the transportation model characteristics, key socioeconomic data, and other data related to the land use and transportation system forecasts is provided in this chapter.

TRANSPORTATION MODELS

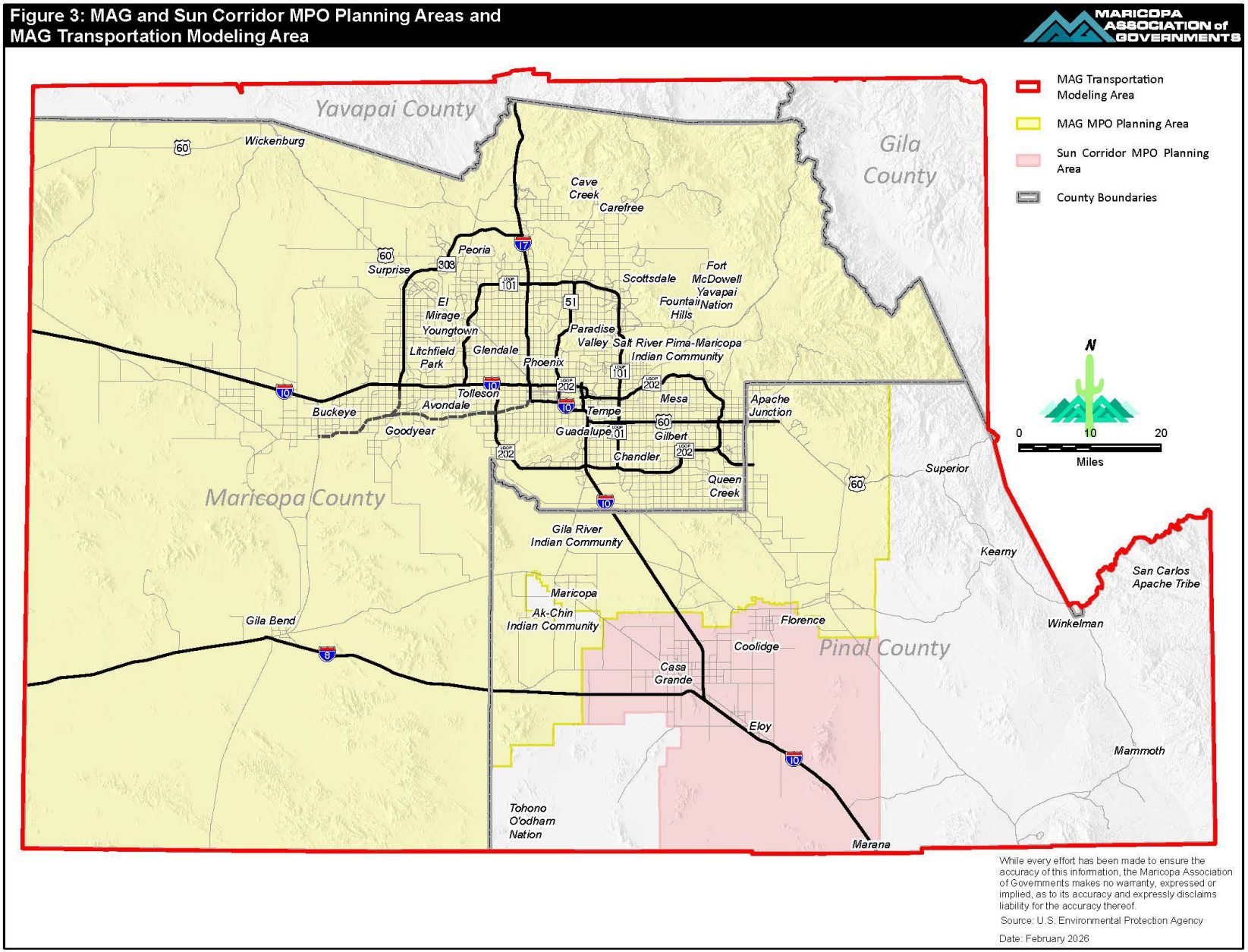
MAG regional transportation modeling is performed using TransCAD software for both highway and transit network assignments. The transportation models forecast AM peak period, midday, PM peak period, and nighttime vehicle traffic, as well as daily transit ridership, for the MAG transportation modeling area. The transportation model utilized for the Sun Corridor MPO Conformity Analysis contains approximately 3,600 traffic analysis zones and covers an area of approximately 16,000 square miles in Maricopa and Pinal counties. A map of the transportation modeling domain is provided in Figure 3. The current official model was comprehensively validated for 2018 traffic data. The base year for the most recent validations is 2018 and traffic counts from approximately 1,000 freeway and arterial locations were used. MAG recalibrated the travel demand model using the 2017 Household Travel Survey and the 2019 transit on-board survey. Several other datasets were used in the recalibration process to update various components of the model. MAG conducted speed data validations with the 2018 commercial speed data from HERE. MAG utilized 2017 ATRI data, 2015 Streetlight data, and 2013 Transearch data to recalibrate the truck models.

The MAG transportation models exhibit the following characteristics, which are consistent with the federal transportation conformity rule (Section 93.122(b)):

- The current traffic volumes simulated by the MAG transportation models were validated to traffic counts from approximately 1,000 freeway and arterial locations. This validation demonstrated a good statistical fit between actual and model-estimated daily traffic volumes.

- The population, households, and employment inputs to the travel demand models are based on the official Pinal County socioeconomic projections which were approved by the MAG Regional Council in June 2023. The Central Arizona Governments (CAG) approved subcounty population projections for Pinal County in June 2023. These projections were prepared using the AZ-SMART land use model system and UrbanSim.

Figure 3: MAG and Sun Corridor MPO Planning Areas and MAG Transportation Modeling Area



While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof.

Source: U.S. Environmental Protection Agency

Date: February 2026

- The population and employment projections used in the conformity analysis are consistent with the transportation system alternatives considered. In the MAG land use models, transportation system accessibility influences the allocation of population and employment to smaller geographic areas. The UrbanSim model was integrated into AZ-SMART and used to allocate county projections of households and employment to regional market areas based upon the pre-existing location of these activities, land consumption, and transportation system accessibility. These congested travel times are derived from an appropriate capacity-restrained traffic assignment for each forecast year. UrbanSim uses transportation system accessibility measures, such as proximity to the closest highway, in determining the likelihood that a land use parcel will develop during a given forecast interval. AZ-SMART also aggregates population, households, and employment projections by land use parcel to the TAZ-level for input to the transportation models. Congested travel times output by the transportation models are fed-back into the land use models to ensure that there is consistency between the transportation system assumptions and the land use projections.

- The transportation models perform capacity-restrained traffic assignments. Traffic assignments are produced for the AM peak period, mid-day, PM peak period, and nighttime, with volumes and congestion estimated for each period.

- Speeds obtained from the traffic assignments are used to recompute link travel times that are then fed back in the travel demand modeling chain. The various submodels within the Activity-Based Model (ABM) are executed until convergence criteria are met. MAG convergence criteria are based on the recommendations produced by the Federal Transit Administration.

- The travel impedances used in the traffic assignment as well as the accessibilities that serve as inputs to multiple submodels in the ABM such as car ownership, daily activity pattern (DAP), and tour frequency models include a composite function of highway travel times and costs. The mode choice logit model is sensitive to highway and transit travel times, as well as pricing variables.

- As a result of the feedback loop in the MAG travel demand modeling process, the final peak and off-peak speeds are sensitive to the capacity-restrained volumes on each highway segment represented in the network. MAG routinely validates model outputs with commercial speed data by time period. MAG has purchased and utilized 2018 HERE data for the validation of the base year 2018.

SOCIOECONOMIC PROJECTIONS

Section 93.110 of the federal conformity rule requires that the population and employment projections used in the conformity analysis be the most recent estimates that have been officially approved by the Metropolitan Planning Organization (i.e. MAG, for the Maricopa County nonattainment areas). The Sun Corridor MPO Conformity Analysis is based on socioeconomic projections that were approved by the MAG Regional Council in June 2023 and Central Arizona Governments (CAG) in June 2023.

In accordance with the Arizona Governor's Executive Order 2011-04, the population projections used for all State agency planning purposes were updated by the Arizona State Demographer consistent with the 2017-2021 American Community Survey. MAG then prepared socioeconomic projections by traffic analysis zone (TAZ), based on the State's county-level population projections. MAG allocated the projections for Maricopa County to traffic analysis zones (TAZs) using the AZ-SMART model system. The official Maricopa County socioeconomic projections based on State Demographer county projections, were approved by the MAG Regional Council in June 2023.

In addition, socioeconomic projections for Pinal County were prepared by MAG utilizing AZ-SMART and were approved in collaboration with Central Arizona Governments (CAG). The projections by Municipal Planning Area (MPA) for Pinal County were approved by the CAG Regional Council in June 2023 and the TAZ projections are based upon the approved MPA projections.

The TAZ population, households and employment projections take into account the transportation improvements contained in the conforming TIP (FY 2022-2025) and RTP (including amendments through December 2022) in effect at the time the projections were approved. For the Sun Corridor MPO Conformity Analysis, the projections of population, households, and employment by TAZ were input to the MAG transportation models to estimate auto and transit trips, VMT, and speeds for each analysis year.

TRAFFIC ESTIMATES

This section describes the development of the highway and transit networks that were used to perform the Sun Corridor MPO Conformity Analysis for the proposed amendment to the FY 2025-2029 Sun Corridor MPO Transportation Improvement Program and Sun Corridor MPO Regional Transportation Plan 2050 Update. A summary of the population, employment, and travel characteristics for the MAG transportation modeling area for each Action scenario in the conformity analysis is presented in Table 6. The vehicle miles of travel forecasts for each of the pollutant specific modeling areas for the Pinal PM-10 and PM-2.5 nonattainment areas are presented in Chapter 4.

TABLE 6.
TRAFFIC NETWORK COMPARISON FOR ACTION SCENARIOS EVALUATED FOR THE CONFORMITY ANALYSIS

Year	Total Population[a] (thousands)	Total Employment[a] (thousands)	Average Weekday VMT[b] (millions)	Average PM Peak Period Speed[c]	Freeway Lane Miles[d]
2030	5,788	2,787	152.8	32.1	4,650
2040	6,542	3,173	179.0	31.6	4,947
2050	7,180	3,463	201.8	30.9	5,171

[a] Population and employment estimates are for the 16,000 square mile transportation modeling area in Maricopa and Pinal Counties. Total population includes resident population in households and group quarters, transient population, and seasonal population. Total employment includes the number of workers in public, retail, office, industrial, work-at-home, construction, non-site based and other land use employees.

[b] Vehicle miles of travel (VMT) is obtained from the summation of VMTs in the AM peak, Mid-Day, PM peak, and Nighttime from the action traffic assignments for the transportation modeling area.

[c] Average speed on freeways, HOV lanes, expressways, arterials, ramps and collector-distributor roads in the transportation modeling area during the PM peak period.

[d] Freeways, expressways, ramps, HOV lanes are included in the lane miles reported for freeways in the transportation modeling area.

Transportation Network Assumptions

Not all of the street, freeway, and transit projects included in the TIP qualify for inclusion in the model networks. Projects which call for study, design, right-of-way acquisition, intersection improvements, center lane additions, curb improvements, or non-capacity improvements are not included in the networks. When these projects result in actual facility construction projects, the associated capacity changes are coded into the network, as appropriate. Since the networks define capacity in terms of the number of through traffic lanes, only construction projects that increase the lane-miles of through traffic are included. Generally, MAG networks include only the one-mile grid system of streets, plus freeways. This includes all streets classified as arterials, six-legged arterials,

expressways, collector-distributor roads, ramps, parkways as well as some collectors. In addition, fixed guideway system transit facilities and park-and-ride locations are included in the networks.

Traffic on collectors and local streets not explicitly coded on the networks are simulated in the models by use of abstract links called centroid connectors. These represent collectors, local streets and driveways which connect a neighborhood to a regionally significant roadway. Centroid connectors also include travel occurring on public and private unpaved roads and alleys.

Highway Networks

The 2030, 2040, and 2050 travel demand model networks used in the conformity analyses for the Action scenarios for the Pinal County nonattainment areas assume implementation of all qualifying highway projects in the FY 2026-2030 MAG Transportation Improvement Program (TIP) and MOMENTUM 2050 MAG Regional Transportation Plan (RTP) Update, as well as other qualifying highway projects to be implemented in Pinal County from the Sun Corridor MPO FY 2025-2029 TIP and Sun Corridor MPO Regional Transportation Plan 2050 Update.

The networks used in the 2030, 2040, and 2050 Baseline scenarios for the Pinal County nonattainment areas contain regionally significant highway projects open to traffic by December 31, 2025 and regionally significant projects, regardless of funding source, that met one of the following criteria: are under construction, have completed the NEPA process, undergoing right of way acquisition by the scheduled start of the conformity analysis, on January 27, 2026, or regionally significant projects included in the baseline scenario for the previous conformity analysis that was completed in December 2025. These criteria comply with Section 93.119(h) of the EPA conformity regulations.

Coding Conventions

Specific coding conventions or criteria are applied to determine whether a project qualifies for travel demand model network coding. This results in coding of all arterial streets and some collectors. The coding conventions are:

1) Capacity-related projects on existing links or extensions of existing links on the base highway network are coded in future networks. This includes projects on freeways, the mile-street grid, and half-mile streets already on the base network.

2) Capacity-related projects which are not on links or extensions of links in the base network are coded, if the street is considered a logical part of the one-mile street grid system. If the project is on a half-mile street, it is considered for inclusion on a case-by-case basis. The key factors considered in making this assessment include:

    - the density of current and future development and travel in the area of the project;

- whether the change may be accommodated without increasing the number of zones; and

- whether the change is consistent with standard network coding practices.

Transit Networks and Operations

Transit networks are a necessary part of the MAG travel demand models and are required for producing a coherent regional multimodal transportation forecast that includes transit ridership. For all analysis years, the bus and rail networks reflect the latest planning information available at the time the conformity analysis began.

Transit Operations in Pinal County

In Pinal County, the cities of Coolidge and Maricopa operate transit service. The City of Coolidge operates the Cotton Express that provides deviated flex route bus service and curb-to-curb paratransit service in Coolidge. The Cotton Express is a local circulator that provides bus service between neighborhoods and business, schools, and government offices. Fares range from $1.00 for one-way, $2.00 for daily, and $30.00 for monthly fare for age 12 to adult.

The City of Coolidge also operates the Central Arizona Regional Transit (CART) bus system that provides regional transportation services in central Pinal County between Coolidge, Casa Grande, Florence, and Central Arizona College. Fares range from $2.00 for one-way, $4.00 for daily, $60.00 for monthly, and $90.00 for local and regional monthly fare for ages 13 to 54. Table 7 provides a summary of the transit fares for the Cotton Express and the Central Arizona Regional Transit bus system.

The City of Maricopa operates a local circulator transit service, Maricopa Express Transit, within the city at no charge. The fixed route service operates Monday through Friday from 8 a.m. to 4 p.m. Also, local Dial-a-Ride is available Monday through Friday from 8 a.m. to 5 p.m. at a fare of $1.00 per one-way trip.

The MAG travel demand models and the highway and transit networks described above are utilized to estimate daily vehicle travel and transit ridership in the MAG transportation modeling area. The primary input to the air quality modeling process is transportation model estimates of daily vehicle traffic and speeds on each highway link, along with the attendant link lengths and coordinate data, for each nonattainment area. A detailed description of the emissions models utilized for the conformity analysis is provided in Chapter 4.

TABLE 7.
SUMMARY OF TRANSIT FARES FOR
COTTON EXPRESS AND CENTRAL ARIZONA REGIONAL TRANSIT SERVICES

Fixed Route Transit Services in Pinal County	Fares
Cotton Express	
One-way	$1.00
Daily	$2.00
Monthly	$30.00
Central Arizona Regional Transit	
One-way	$2.00
Daily	$4.00
Monthly	$60.00
Local & Regional Monthly	$90.00

Note: Demand and deviated route fares are available for the Cotton Express. For the Central Arizona Regional Transit service, lower fares apply to children 12 and under or students.

4 AIR QUALITY MODELING

For the Sun Corridor MPO Conformity Analysis, air quality modeling was performed for the Action/Baseline interim conformity tests for analysis years 2030, 2040, and 2050 for particulate matter PM-10 for the West Pinal PM-10 Nonattainment Area and PM-2.5 and nitrogen oxides (NOx) for the West Central Pinal PM-2.5 Nonattainment Area.

Also, for informational purposes, MAG performed the conformity budget test comparing the projected emissions for analysis years 2026, 2030, 2040, and 2050 with the 2026 motor vehicle emissions budget established in the submitted 2023 Five Percent Particulate Plan for PM-10 for the West Pinal County Nonattainment Area. The 2023 Five Percent Particulate Plan for PM-10 for the West Pinal County Nonattainment Area was submitted to EPA in December 2023.

The models which have been used to estimate PM-10, PM-2.5, and NOx are the EPA Motor Vehicle Emission Simulator 4 (MOVES) model to derive motor vehicle emission factors, MOVESLink4 for the calculation of spatially and temporally allocated onroad vehicle emissions using the emission factors from the above models and travel and speed data from the MAG Activity-Based transportation model, and AP-42 to derive paved and unpaved road PM-10 emissions.

On September 12, 2023, EPA published in the *Federal Register* the availability of the emissions model MOVES4 for use in state implementation plans and transportation conformity. The announcement started a two-year transportation conformity grace period that ended on September 12, 2025. Also, on December 11, 2024, EPA published in the *Federal Register* the availability of the latest emissions model MOVES5 for use in state implementation plans and transportation conformity. The announcement started a two-year transportation conformity grace period that ends on December 11, 2026.

For the Pinal County PM-10 and PM-2.5 nonattainment areas, there are no adequate or approved motor vehicle emissions budgets for conformity. Therefore, the Action/Baseline interim conformity tests were applied. The Action/Baseline test involved the comparison of the Action and Baseline scenario emissions for analysis years 2030, 2040, and 2050 for the West Pinal PM-10 Nonattainment Area and West Central Pinal PM-2.5 Nonattainment Area. The conformity rule requirements for the selection of the analysis years are summarized in Chapter 1.

The inputs to MOVES4, MOVESLink4, and AP-42 models used in estimating onroad vehicle emissions for the Pinal County PM-10 and PM-2.5 nonattainment areas are described below.

MOVES4

MOVES4 is the onroad emissions model developed by EPA for the purpose of estimating motor vehicle emission factors in unit of gram per vehicle mile of travel. MOVES requires local data such as the Inspection and Maintenance (I/M) program, meteorological data, vehicle populations, source type age distribution, annual average daily vehicle miles of travel (VMT), VMT fractions, road type distribution, average speed distribution, fuel data, and Alternative Vehicle and Fuel Technologies (AVFT). This model was used to estimate ozone precursors and particulate (exhaust, tire wear, and brake wear) emission factors for the Maricopa nonattainment areas. MOVES is also used to estimate particulate (exhaust, tire wear, and brake wear) emission factors for the Pinal County PM-10 and PM-2.5 nonattainment areas and NOx exhaust emission factors for the Pinal PM-2.5 nonattainment area. The output from the MOVES4 model included emission factors by hour, roadway facility type, pollutant, vehicle class, and area type.

I/M Programs

MOVES4 has a table for Inspection and Maintenance (I/M) programs that reflects the actual proportion of vehicles subject to the specified levels of inspection. The term “I/M vehicles” denotes vehicles which are required to undergo an emission test and/or inspection under the Vehicle Inspection/Maintenance Program administered by the Arizona Department of Environmental Quality (ADEQ). The MOVES table was developed using the I/M program data provided by ADEQ. It is important to note that participation in the I/M program is required for all vehicles registered in Area A, except for certain model years and vehicle classes.

Inspection and Maintenance program benefits were assumed in the modeling. The I/M runs reflect the provisions of the enhanced inspection program which was implemented in January 1995 and the measure “Phased-in Emission Test Cutpoints”, implemented in January 2000. The cutpoint values used are the MOVES4 default Phase 2 cutpoints. For the four horizon years modeled in this analysis, it was assumed that the onboard diagnostic (OBD) test would be used for the model year 1996 and newer vehicles with an exemption for all vehicles of the current plus four model years.

The compliance factors for MOVES vehicle Inspection and Maintenance programs were derived from gasoline regulatory class coverage adjustments, compliance rate, waiver rate, and failure rate. The gasoline regulatory class coverage adjustments were obtained from the MOVES Technical Guidance. Compliance rate, waiver rate, and failure rate were calculated using the ADEQ vehicle inspection data. Table 8 shows the MOVES compliance factors for I/M programs in 2026.

TABLE 8.
THE COMPLIANCE FACTORS FOR MOVES VEHICLE
INSPECTION AND MAINTENANCE PROGRAMS IN AREA A

I/M Test Type	MOVES Test StandardID	Model Years		Test Frequency	MOVES Regulatory Class ID	Compliance Factor
		From	To			
Exhaust Loaded-Idle	13	1967	1980	Annual	21	85.65%
					31	88.45%
					32	87.85%
Exhaust IM147	33	1981	1995	Biennial	21	91.78%
					31	91.93%
					32	86.14%
Exhaust OBD	51	1996	2021	Biennial	21	99.48%
					31	99.30%
					32	97.37%
Exhaust Loaded-Idle	13	1967	2021	Annual	41	98.86%
					42	98.99%
					43	97.83%
					51	96.24%
					52	98.99%
					53	98.94%
					54	97.98%
					61	88.84%
					62	88.84%
Evaporative Gas Cap	41	1967	1980	Annual	21	85.57%
					31	88.41%
					32	87.82%
Evaporative Gas Cap and Pressure Check	44	1981	1995	Biennial	21	91.77%
					31	91.93%
					32	86.13%
Evaporative OBD and Gas Cap	45	1996	2021	Biennial	21	99.48%
					31	99.13%
					32	95.94%
Evaporative Gas Cap	41	1967	2021	Annual	41	98.85%
					42	98.99%
					43	97.83%
					51	96.20%

I/M Test Type	MOVES Test StandardID	Model Years		Test Frequency	MOVES Regulatory Class ID	Compliance Factor
		From	To		52	98.99%
					53	98.94%
					54	97.98%
					61	88.09%
					62	88.09%

MOVES4 outputs were weighted to account for vehicles driving in the modeling area that do not participate in the I/M programs. Therefore, each modeled scenario required runs with and without the I/M program benefits. For this analysis, it was assumed that 91.6 percent of eligible onroad vehicles participate in the I/M programs. This fraction reflects an increase in the participation in the I/M programs due to implementation of the measure, "Tougher Enforcement of Vehicle Registration and Emission Test Compliance". For all scenarios modeled for this analysis, the inputs for each run included oxygenated gasoline with an assumed market share of 100 percent ethanol. The gasoline volatility and average oxygen content of the ethanol blend gasoline were based on the regulatory limits provided to MAG by the Arizona Department of Agriculture (AZDA) Weights and Measures Services Division.

The MOVES4 runs that reflected the I/M programs in Area A assumed vehicle waiver rates of 1.3 percent or 1.0 percent, depending on model year. These fractions reflected the lower waiver rates resulting from the implementation of "One Time Waiver from Vehicle Emissions Test".

Meteorological Data

MOVES4 requires hourly temperature and relative humidity data by specific month of the year. The 2017 meteorological data used in the MAG 2023 Five Percent Plan for PM-10 were used for the conformity analysis for the West Pinal PM-10 and West Central Pinal PM-2.5 nonattainment areas. Specifically, average temperature and relative humidity for each month of 2017 were utilized in Pinal County (see Table 9).

The transportation conformity regulations at 40 CFR 93.122(a)(6) require that ambient temperature used for the regional emissions analysis shall be consistent with those used to establish the motor vehicle emissions budget in the applicable implementation plan. Section 2.9 of EPA's Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations, December 2008, also states that other meteorological factors such as humidity must be consistent with those used to establish the motor vehicle emissions budget. In June 2024, MAG conducted a series of sensitivity tests and found that the MOVES run with monthly average meteorological data estimates more accurate emissions than the MOVES run with seasonal average meteorological

data. Based on this finding, MAG used monthly average meteorological data for this conformity analysis.

On October 4, 2024, MAG staff discussed changes to the HPMS reconciliation factor and the use of monthly average meteorological data that more accurately estimate emissions with EPA and FHWA. EPA and FHWA concurred with both proposed changes for regional emissions analyses.

TABLE 9.
METEOROLOGICAL DATA FOR THE WEST PINAL PM-10 AND
WEST CENTRAL PINAL PM-2.5 NONATTAINMENT AREAS

Temperature (F)												
Hour ID	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	48.0	48.0	56.0	64.0	70.0	83.0	86.0	85.0	79.0	65.0	54.0	45.0
2	47.0	47.0	54.0	62.0	69.0	81.0	84.0	83.0	78.0	64.0	52.0	44.0
3	46.0	46.0	53.0	60.0	66.0	79.0	84.0	83.0	76.0	63.0	51.0	43.0
4	46.0	45.0	52.0	59.0	64.0	76.0	83.0	81.0	75.0	62.0	51.0	43.0
5	45.0	44.0	51.0	57.0	63.0	74.0	82.0	80.0	75.0	61.0	50.0	42.0
6	45.0	43.0	50.0	56.0	62.0	74.0	82.0	79.0	74.0	61.0	49.0	41.0
7	44.0	43.0	50.0	60.0	68.0	80.0	84.0	81.0	75.0	61.0	49.0	41.0
8	44.0	45.0	55.0	65.0	73.0	85.0	86.0	84.0	79.0	66.0	51.0	41.0
9	47.0	50.0	60.0	70.0	77.0	89.0	89.0	87.0	82.0	70.0	57.0	46.0
10	52.0	54.0	65.0	75.0	81.0	93.0	92.0	91.0	86.0	75.0	61.0	50.0
11	54.0	58.0	69.0	77.0	84.0	96.0	94.0	93.0	89.0	79.0	65.0	54.0
12	57.0	62.0	72.0	80.0	86.0	99.0	96.0	96.0	91.0	82.0	69.0	57.0
13	59.0	64.0	74.0	82.0	88.0	100.0	98.0	98.0	93.0	84.0	71.0	60.0
14	61.0	66.0	76.0	84.0	90.0	102.0	99.0	99.0	95.0	85.0	72.0	61.0
15	61.0	67.0	77.0	85.0	90.0	102.0	100.0	99.0	95.0	86.0	73.0	62.0
16	61.0	67.0	77.0	86.0	91.0	103.0	101.0	99.0	96.0	86.0	73.0	62.0
17	61.0	67.0	77.0	85.0	90.0	102.0	101.0	99.0	95.0	85.0	72.0	60.0
18	58.0	65.0	75.0	84.0	89.0	101.0	99.0	97.0	93.0	82.0	67.0	56.0
19	55.0	60.0	71.0	81.0	87.0	100.0	96.0	95.0	90.0	77.0	64.0	53.0
20	54.0	57.0	67.0	77.0	83.0	95.0	94.0	92.0	87.0	75.0	62.0	51.0
21	53.0	55.0	64.0	74.0	80.0	93.0	91.0	91.0	85.0	72.0	60.0	50.0
22	51.0	53.0	62.0	72.0	77.0	90.0	90.0	89.0	83.0	71.0	58.0	48.0
23	50.0	51.0	60.0	69.0	74.0	88.0	88.0	88.0	82.0	68.0	56.0	47.0
24	48.0	49.0	58.0	67.0	72.0	84.0	87.0	85.0	80.0	67.0	54.0	46.0

Relative Humidity (%)												
Hour ID	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	72.0	52.0	40.0	23.0	26.0	19.0	53.0	44.0	46.0	41.0	46.0	61.0
2	74.0	54.0	42.0	25.0	27.0	21.0	55.0	47.0	47.0	43.0	47.0	62.0
3	75.0	55.0	44.0	27.0	30.0	22.0	56.0	47.0	49.0	45.0	49.0	63.0
4	76.0	56.0	47.0	29.0	31.0	24.0	58.0	49.0	51.0	46.0	51.0	64.0
5	76.0	58.0	48.0	30.0	33.0	25.0	60.0	52.0	52.0	47.0	51.0	66.0
6	77.0	59.0	50.0	32.0	34.0	26.0	62.0	54.0	53.0	48.0	53.0	66.0

7	77.0	60.0	50.0	30.0	31.0	24.0	59.0	51.0	53.0	48.0	54.0	67.0
8	78.0	59.0	44.0	26.0	28.0	22.0	53.0	47.0	48.0	43.0	51.0	67.0
9	71.0	50.0	38.0	23.0	24.0	19.0	48.0	42.0	43.0	38.0	45.0	61.0
10	61.0	45.0	33.0	20.0	21.0	16.0	43.0	37.0	39.0	34.0	39.0	54.0
11	57.0	38.0	28.0	17.0	19.0	14.0	39.0	33.0	35.0	30.0	34.0	48.0
12	51.0	34.0	25.0	15.0	16.0	12.0	36.0	30.0	32.0	26.0	31.0	43.0
13	47.0	31.0	23.0	14.0	15.0	12.0	33.0	27.0	29.0	24.0	28.0	39.0
14	43.0	29.0	21.0	12.0	14.0	10.0	31.0	25.0	27.0	22.0	26.0	37.0
15	43.0	27.0	20.0	12.0	13.0	10.0	30.0	25.0	26.0	21.0	25.0	36.0
16	44.0	26.0	19.0	11.0	13.0	9.0	29.0	26.0	26.0	21.0	25.0	35.0
17	44.0	26.0	19.0	11.0	12.0	8.0	29.0	26.0	26.0	22.0	26.0	37.0
18	50.0	28.0	20.0	11.0	14.0	8.0	31.0	29.0	28.0	23.0	30.0	43.0
19	56.0	33.0	23.0	12.0	15.0	8.0	36.0	31.0	30.0	27.0	33.0	48.0
20	58.0	38.0	27.0	14.0	16.0	11.0	38.0	35.0	34.0	30.0	35.0	51.0
21	59.0	41.0	29.0	16.0	19.0	13.0	43.0	34.0	36.0	32.0	38.0	53.0
22	63.0	44.0	31.0	17.0	21.0	14.0	46.0	36.0	39.0	34.0	40.0	56.0
23	67.0	47.0	34.0	19.0	23.0	15.0	49.0	37.0	40.0	37.0	43.0	57.0
24	70.0	50.0	37.0	21.0	25.0	17.0	50.0	42.0	43.0	39.0	45.0	59.0

Vehicle Source Type Population

In February 2024, MAG contracted with Eastern Research Group, Inc. (ERG) to decode vehicle identification numbers (VINs) from Arizona registration data and classify vehicles registered in Maricopa and Pinal counties into the vehicle types, fuel types, and model years needed as inputs to the MOVES model. For the Sun Corridor MPO Conformity Analysis, the vehicle source type populations were derived using ERG's vehicle classification scripts, the 2025 vehicle registration data provided in January 2026 by the Arizona Department of Transportation, the transit bus data (see Table 19), and the MOVES4 default source type population data (see Table 10). ERG's vehicle classification scripts decode a Vehicle Identification Number (VIN) for each vehicle in the ADOT vehicle registration data, extract vehicles registered in Maricopa and Pinal counties, remove non-road equipment or trailers, remove duplicate entries, classify the VIN decoded data into MOVES source type categories, and generate the MOVES source type population input for Maricopa and Pinal counties by totaling populations grouped by source type. Since vehicle registration and VIN decoded data do not provide short-haul or long-haul truck population, the MOVES4 default source type population data are used to derive short-haul/long-haul fractions for single unit trucks (Source Types 52 and 53) and combination trucks (Source Types 61 and 62). The source type population derived using ERG's vehicle classification scripts is provided in Table 10.

For this conformity analysis, MAG used MOVES4 to project source type population for each horizon year by applying MOVES5 default source type population growth rate between the calendar year 2025 and the horizon year for each source type as shown in Table 11. MOVES5 default source type population growth rates were derived from the up-to-date vehicle stock estimates of Annual Energy Outlook (AEO) 2023. To verify adequacy

of applying MOVES5 default source type population growth rate to this region, historic source type population growth rates were compared between the U.S. and Arizona. According to the EPA Population and Activity of Onroad Vehicles, November 2024, MOVES5 default source type population for pre-2023 were mainly derived from the FHWA's annual Highway Statistics report (EPA, 2024). For the vehicle population growth in the FHWA's annual Highway Statistics report, Arizona has less annual growth rate than the U.S. for the past six years (2017-2022). Therefore, applying MOVES5 default source type population growth rates to Pinal County for the horizon years appears to represent potential sales growth in this region adequately and conservatively.

Finally, source type population for the selected nonattainment area was computed using a ratio of the population projections between the county and the nonattainment area. The population projections for future years were provided by the MAG socioeconomic modeling staff, which were approved by the MAG Regional Council in June 2023.

TABLE 10.
SOURCE TYPE POPULATION FOR PINAL COUNTY

	Pinal County	
Source Type	**MOVES4 Default for 2025**	**2025 Population with 2025 Vehicle Registration Data**
11	13,037	15,903
21	117,069	146,842
31	201,833	219,796
32	18,189	6,287
41	513	73
42	153	28
43	737	131
51	92	17
52	13,766	10,159
53	603	445
54	1,916	3,128
61	2,861	865
62	2,196	574
Total	372,964	404,248

TABLE 11.
PROJECTION RATIOS OF SOURCE TYPE POPULATION
FOR PINAL COUNTY

Source Type	Pinal County		
	MOVES5 Default Source Type Population		Projection Ratio from 2025 to 2050
	2025	2050	
11	12,525	13,928	1.1120
21	115,986	81,967	0.7067
31	200,808	283,295	1.4108
32	18,200	25,676	1.4108
41	520	752	1.4463
42	145	210	1.4463
43	723	1,046	1.4463
51	79	128	1.6185
52	14,017	22,686	1.6185
53	614	994	1.6185
54	1,700	2,752	1.6185
61	2,534	2,953	1.1652
62	2,669	3,109	1.1652

Vehicle Source Type Age Distribution

The source type age distribution was derived using ERG's vehicle classification scripts, ADOT 2025 vehicle registration data, transit bus data from public transit providers, and MOVES4 default age distributions. ERG's vehicle classification scripts generated the source type age distributions from the VIN decoded registration data for most of the source types, except transit bus (source type 42) and long-haul truck (source types 53 and 62). Age distribution for transit bus was developed using the local transit bus data provided by ADOT (see Table 18) for Pinal County.

The age distribution for the long-haul truck was obtained from the MOVES4 default age distribution. The age distribution for the calendar year 2025 was projected for the horizon years using the MOVES Age Distribution Projection Tool.

Vehicle Miles of Travel

Vehicle miles of travel (VMT) is used to estimate onroad exhaust, brake wear, and tire wear emissions. The VMT for the West Pinal PM-10 Nonattainment Area and the West Central Pinal PM-2.5 Nonattainment Area were derived from traffic assignment data output from the MAG Activity-Based transportation model.

For the Pinal County nonattainment areas, for PM-10, PM-2.5, and NOx the VMT estimates reflected annual average daily traffic volumes in the Action and Baseline scenarios for each analysis year in the West Pinal PM-10 Nonattainment Area and the West Central Pinal PM-2.5 Nonattainment Area, respectively. The VMT projections used to estimate emissions for each pollutant analyzed in the conformity analysis are provided in Table 12.

TABLE 12.
TOTAL VMT USED IN THE CONFORMITY ANALYSIS FOR THE
PINAL COUNTY NONATTAINMENT AREAS
(Daily vehicle miles of travel for pollutant-specific areas)

YEAR	PM-10 NONATTAINMENT AREA		PM-2.5 NONATTAINMENT AREA	
	Action	Baseline	Action	Baseline
2030	7,961,029	7,714,004	959,669	944,254
2040	11,463,441	10,837,411	1,299,452	1,392,627
2050	15,672,097	14,474,329	1,711,460	1,848,767

VMT Fraction

Since VMT varies by month, day of week, and hour, MOVES4 requires month/day/hour VMT fractions and the Annual Average Daily Vehicles Miles Travelled (AADVMT) conversion factor as a local input to derive specific weekday, monthly, seasonal and yearly average VMT from the annual average weekday transportation assignment data from the MAG Activity-Based transportation model for freeways and arterials.

The 2022 ADOT Transportation Data Management System data for Pinal County were collected from the website, https://adot.public.ms2soft.com/tcds/. Data from five permanent traffic count stations for freeways in Pinal County were used to develop the AADVMT conversions for freeways, and data from four stations for arterials in Pinal County were used to develop the AADVMT conversion for arterials. The AADVMT conversions derived from the 2022 traffic count data were used in developing the annual average daily VMTs for freeways and arterials from the annual average weekday transportation network data for the West Pinal PM-10 and West Central Pinal PM-2.5 nonattainment areas. The AADVMT conversions used in the West Pinal PM-10 and West Central Pinal PM-2.5 nonattainment areas for the conformity analysis are 1.01 for freeways and 0.93 for arterials.

Road Type Distribution

The local road type distributions were derived from the MAG Activity-Based Model (ABM) transportation network assignment data that provided VMTs for local road types and ABM vehicle classes. MAG ABM network assignment data provided all road type distributions for the MOVES runs for the conformity analysis. The matchup methods used in mapping the ABM vehicle classes to the MOVES source types are provided in Table 13.

TABLE 13.
MATCHUP TABLE FOR ABM VEHICLE CLASSES AND
MOVES SOURCE TYPES

MAG Activity-Based Model Vehicle Class	**Source Type**
MC (Motorcycle)	11. Motorcycle
LDV (Light Duty Vehicle)	21. Passenger Car 31. Passenger Truck
LGT (Light Commercial Truck)	32. Light Commercial Truck
BUS (Transit Bus)	42. Transit Bus
MED (Medium Duty Vehicle)	51. Refuse Truck 52. Single Unit Short-haul Truck 53. Single Unit Long-haul Truck 54. Motor Home
HVY (Heavy Duty Vehicle)	41. Other Buses 43. School Bus 61. Combination Short-haul Truck 62. Combination Long-haul Truck

The same road type distribution was used for the source types within a given transportation model vehicle class. The road type distributions to the MOVES source types used for Pinal County in 2030 are provided in Table 14 as an example. For Table 14, road type distributions are identified as Off-network (road type ID 1), Rural Restricted Access (road type ID 2), Rural Unrestricted Access (road type ID 3), Urban Restricted Access (road type ID 4), and Urban Unrestricted Access (road type ID 5).

Average Speed Distribution

In MOVES, vehicle power, speed, and acceleration have a significant effect on vehicle emissions for all pollutants. The speed distribution is required for the MOVES inventory mode run, while the MOVES emission rate mode run uses the link-specific speed instead of the speed distribution. Since MAG uses the emission rate mode to calculate onroad emissions based on link-specific speeds and VMTs for road types 2 to 5, the speed distribution input was not used in the conformity analysis.

TABLE 14.
ROAD TYPE DISTRIBUTION FOR PINAL COUNTY IN 2030

ABM Vehicle Class	sourceTypeID	roadTypeID	roadTypeVMTFraction	
			PM-10 Conformity	PM2.5 Conformity
MC	11	1	0.00000	0.00000
		2	0.15802	0.03761
		3	0.32405	0.29671
		4	0.02383	0.00000
		5	0.49410	0.66568
LDV	21 31	1	0.00000	0.00000
		2	0.19055	0.04903
		3	0.29955	0.25604
		4	0.02629	0.00000
		5	0.48361	0.69492
LGT	32	1	0.00000	0.00000
		2	0.16222	0.05516
		3	0.38887	0.45541
		4	0.06776	0.00000
		5	0.38116	0.48942
BUS	42	1	0.00000	0.00000
		2	0.00000	0.00000
		3	0.28213	0.00000
		4	0.00000	0.00000
		5	0.71787	1.00000
MED	51 52 53 54	1	0.00000	0.00000
		2	0.49774	0.39095
		3	0.20217	0.27464
		4	0.09226	0.00000
		5	0.20783	0.33441
HVY	41 43	1	0.00000	0.00000
		2	0.65818	0.70246
		3	0.07550	0.11059
		4	0.15621	0.00000
		5	0.11011	0.18696
	61 62	1	0.00000	0.00000
		2	0.80969	0.87184
		3	0.04763	0.07038
		4	0.10894	0.00000
		5	0.03373	0.05778

The MAG Activity-Based Model transportation network assignment data provide link-specific data in the four time periods: AM peak (6:00-8:59), Mid-day (9:00-13:59), PM peak (14:00-17:59), Nighttime (0:00-5:59 and 18:00-23:59).

Fuel Data

In consultation with FHWA, the fuel formulation data are developed based on the MOVES4 default fuel parameters, the local gasoline Reid Vapor Pressure (RVP) regulatory values from the Arizona Department of Agriculture (AZDA), and the MOVES4 Fuel Wizard. The MOVES4 default gasoline fuel parameters for Pinal County were derived using the MOVES4 County Data Manager and are provided in Table 15 (Note: The MOVES4 default RVP parameters listed in Table 15 are for informational purposes only. Pinal County regulatory RVP values are used in place of MOVES4 defaults as described further below).

TABLE 15.
PINAL COUNTY MOVES4 DEFAULT GASOLINE FUEL PARAMETERS BY MONTH

	Month											
Fuel Parameter	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
fuelFormulationID	9022	9022	9022	9023	9021	9021	9021	9021	9021	9023	9022	9022
fuelSubtypeID	12	12	12	12	12	12	12	12	12	12	12	12
RVP	10.5	10.5	10.5	10.5	10	10	10	10	10	10.5	10.5	10.5
sulfurLevel	7.71	7.71	7.71	8.12	7.15	7.15	7.15	7.15	7.15	8.12	7.71	7.71
ETOHVolume	10	10	10	10	10	10	10	10	10	10	10	10
MTBEVolume	0	0	0	0	0	0	0	0	0	0	0	0
ETBEVolume	0	0	0	0	0	0	0	0	0	0	0	0
TAMEVolume	0	0	0	0	0	0	0	0	0	0	0	0
aromaticContent	22.18	22.18	22.18	22.68	23.04	23.04	23.04	23.04	23.04	22.68	22.18	22.18
olefinContent	7.62	7.62	7.62	7.83	8.22	8.22	8.22	8.22	8.22	7.83	7.62	7.62
benzeneContent	0.67	0.67	0.67	0.67	0.70	0.70	0.70	0.70	0.70	0.67	0.67	0.67
e200	44.66	44.66	44.66	44.90	42.77	42.77	42.77	42.77	42.77	44.90	44.66	44.66
e300	84.08	84.08	84.08	84.38	83.86	83.86	83.86	83.86	83.86	84.38	84.08	84.08
BioDieselEsterVolume	0	0	0	0	0	0	0	0	0	0	0	0
CetaneIndex	0	0	0	0	0	0	0	0	0	0	0	0
PAHContent	0	0	0	0	0	0	0	0	0	0	0	0
T50	229.2	229.2	229.2	227.9	240.0	240.0	240.0	240.0	240.0	227.9	229.2	229.2
T90	325.1	325.1	325.1	323.9	326.1	326.1	326.1	326.1	326.1	323.9	325.1	325.1

The MOVES4 default gasoline fuel parameters for Pinal County are set for three distinct seasons: winter period (January, February, March, November, December), summer period (May, June, July, August, September), and transitional period (April and October).

Within Maricopa and Pinal counties, specific geographic areas designated as Area A and Area C have been created to implement different fuel parameter regulations. Area A includes wintertime and summertime RVP limits, while Area C only includes summertime RVP limits. A map showing Area A and Area C is included in Figure 4 below.

In Pinal County, a small portion of the West Pinal PM-10 Nonattainment Area is situated within Area A, whereas Area C encompasses the remaining portion, including the entirety of the West Central Pinal PM-2.5 Nonattainment Area and most of the PM-10 nonattainment area. The MOVES4 Fuel Wizard adjusts the MOVES4 default gasoline fuel parameters for each month using the Arizona monthly regulatory RVP values for both Area A and Area C in Table 16. Given in Table 17, the final two sets of gasoline fuel parameters adjusted by the MOVES4 Fuel Wizard with the regulatory RVPs for the 12 months were used for the West Pinal PM-10 and West Central Pinal PM-2.5 conformity tests.

TABLE 16.
ARIZONA REGULATORY RVP FOR AREA A AND AREA C BY MONTH FOR GASOLINE IN PINAL COUNTY

Month	Averaged Reid Vapor Pressure (pounds per square inch) for AREA A	Averaged Reid Vapor Pressure (pounds per square inch) for AREA C
January	9.0	13.5
February	9.0	13.5
March	9.0	11.5
April	10.0	10.0
May	9.0	10.0
June	7.0	7.0
July	7.0	7.0
August	7.0	7.0
September	7.0	7.0
October	9.0	10.0
November	9.0	11.5
December	9.0	13.5

Figure 4: Area A and Area C in Maricopa and Pinal Counties

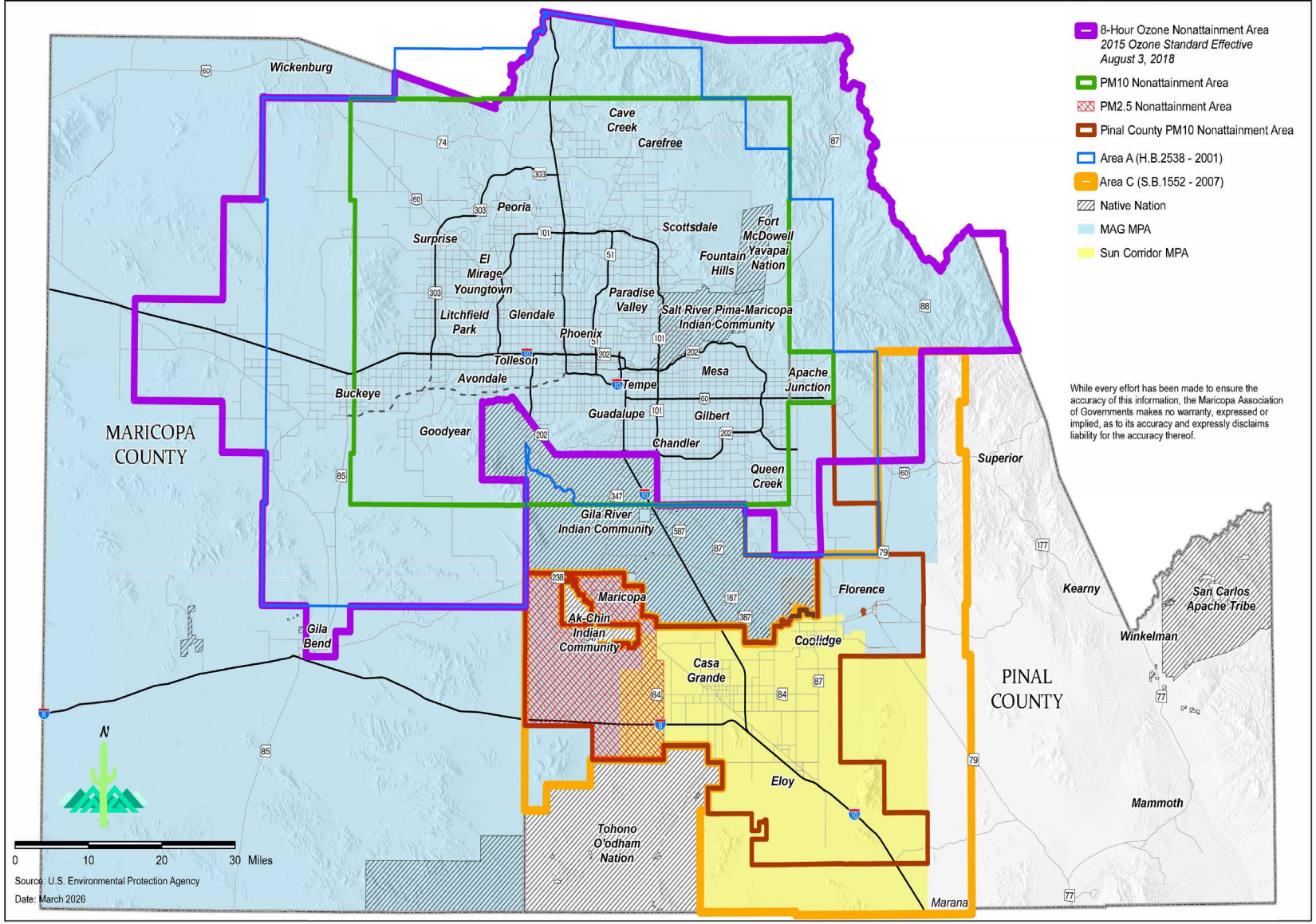


TABLE 17.
TWO SETS OF PINAL COUNTY GASOLINE PARAMETERS FOR PM-10 AND PM-2.5 CONFORMITY TESTS IN BOTH AREA A AND AREA C BY MONTH

	Month (AREA A)											
Fuel Parameter	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
fuelFormulationID	9023	9023	9023	9024	9025	9026	9026	9026	9026	9030	9023	9023
fuelSubtypeID	12	12	12	12	12	12	12	12	12	12	12	12
RVP	9	9	9	10	9	7	7	7	7	9	9	9
sulfurLevel	7.71	7.71	7.71	8.12	7.15	7.15	7.15	7.15	7.15	8.12	7.71	7.71
ETOHVolume	10	10	10	10	10	10	10	10	10	10	10	10
MTBEVolume	0	0	0	0	0	0	0	0	0	0	0	0
ETBEVolume	0	0	0	0	0	0	0	0	0	0	0	0
TAMEVolume	0	0	0	0	0	0	0	0	0	0	0	0
aromaticContent	22.18	22.18	22.18	22.68	23.04	23.04	23.04	23.04	23.04	22.68	22.18	22.18
olefinContent	7.62	7.62	7.62	7.83	8.22	8.22	8.22	8.22	8.22	7.83	7.62	7.62
benzeneContent	0.67	0.67	0.67	0.67	0.70	0.70	0.70	0.70	0.70	0.67	0.67	0.67
e200	32.16	32.16	32.16	35.11	28.00	23.41	23.41	23.41	23.41	32.82	32.16	32.16
e300	83.24	83.24	83.24	83.98	83.27	82.35	82.35	82.35	82.35	83.52	83.24	83.24
BioDieselEsterVolume	0	0	0	0	0	0	0	0	0	0	0	0
CetaneIndex	0	0	0	0	0	0	0	0	0	0	0	0
PAHContent	0	0	0	0	0	0	0	0	0	0	0	0
T50	236.2	236.2	236.2	230.2	244.7	254.1	254.1	254.1	254.1	234.9	236.2	236.2
T90	328.3	328.3	328.3	324.9	328.2	332.4	332.4	332.4	332.4	327.0	328.3	328.3

	Month (AREA C)											
Fuel Parameter	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
fuelFormulationID	9022	9022	9024	9023	9021	9020	9020	9020	9020	9023	9024	9022
fuelSubtypeID	12	12	12	12	12	12	12	12	12	12	12	12
RVP	13.5	13.5	11.5	10	10	7	7	7	7	10	11.5	13.5
sulfurLevel	7.71	7.71	7.71	8.12	7.15	7.15	7.15	7.15	7.15	8.12	7.71	7.71
ETOHVolume	10	10	10	10	10	10	10	10	10	10	10	10
MTBEVolume	0	0	0	0	0	0	0	0	0	0	0	0
ETBEVolume	0	0	0	0	0	0	0	0	0	0	0	0
TAMEVolume	0	0	0	0	0	0	0	0	0	0	0	0
aromaticContent	22.18	22.18	22.18	22.68	23.04	23.04	23.04	23.04	23.04	22.68	22.18	22.18
olefinContent	7.62	7.62	7.62	7.83	8.22	8.22	8.22	8.22	8.22	7.83	7.62	7.62
benzeneContent	0.67	0.67	0.67	0.67	0.70	0.70	0.70	0.70	0.70	0.67	0.67	0.67
e200	42.49	42.49	37.90	35.11	42.77	23.41	23.41	23.41	23.41	35.11	37.90	42.49
e300	85.33	85.33	84.40	83.98	83.86	82.35	82.35	82.35	82.35	83.98	84.40	85.33

Fuel Parameter	Month (AREA C)											
	1	2	3	4	5	6	7	8	9	10	11	12
BioDieselEsterVolume	0	0	0	0	0	0	0	0	0	0	0	0
CetaneIndex	0	0	0	0	0	0	0	0	0	0	0	0
PAHContent	0	0	0	0	0	0	0	0	0	0	0	0
T50	215.1	215.1	224.5	230.2	240.0	254.1	254.1	254.1	254.1	230.2	224.5	215.1
T90	318.8	318.8	323.0	324.9	326.1	332.4	332.4	332.4	332.4	324.9	323.0	318.8

Alternative Vehicle Fuel and Technologies (AVFT) Data

The AVFT table is used to adjust fuel type distributions to reflect local information, such as vehicle registration data. The AVFT table was derived using ERG's vehicle classification scripts, ADOT 2025 vehicle registration data, transit bus data from public transit providers, and the MOVES4 default AVFT to adjust fuel type distributions for the conformity analysis in Maricopa and Pinal counties.

The Pinal County 2025 transit bus data were obtained from the Arizona Department of Transportation (ADOT) in February 2026. For the conformity analysis for the West Pinal PM-10 and West Central Pinal PM-2.5 nonattainment areas, the Pinal County 2025 transit bus data is provided in Table 18.

TABLE 18.
TRANSIT BUS DATA IN PINAL COUNTY

Model Year	2025 Transit Bus Data	
	Gasoline	Diesel
2007	1	0
2008	0	0
2009	0	3
2010	0	0
2011	0	0
2012	0	0
2013	0	0
2014	2	1
2015	5	0
2016	0	0
2017	1	0
2018	3	1
2019	1	0
2020	3	0
2021	0	2
2022	0	0

Model Year	2025 Transit Bus Data	
	Gasoline	Diesel
2023	3	0
2024	1	0
2025	0	0
TOTAL	27	

MOVES4 AVFT input requires fuel engine fraction (e.g. gasoline or diesel) by source type and model year. Fuel engine fraction for transit bus was calculated based on transit bus population by fuel type for each model year. Table 19 shows the MOVES AVFT 2025 inputs for the conformity analysis for the West Pinal PM-10 and West Central Pinal PM-2.5 nonattainment areas.

TABLE 19.
ADJUSTED MOVES AVFT INPUTS FOR TRANSIT BUS IN PINAL COUNTY

sourceTypeID	modelYearID	fuelTypeID	engTechID	fuelEngFraction
42	2007	1	1	1.00000
42	2007	2	1	0.00000
42	2007	3	1	0.00000
42	2007	9	30	0.00000
42	2007	9	40	0.00000
42	2008	1	1	0.15051
42	2008	2	1	0.75128
42	2008	3	1	0.09821
42	2008	9	30	0.00000
42	2008	9	40	0.00000
42	2009	1	1	0.00000
42	2009	2	1	1.00000
42	2009	3	1	0.00000
42	2009	9	30	0.00000
42	2009	9	40	0.00000
42	2010	1	1	0.17557
42	2010	2	1	0.79552
42	2010	3	1	0.02891
42	2010	9	30	0.00000
42	2010	9	40	0.00000
42	2011	1	1	0.22970
42	2011	2	1	0.67036
42	2011	3	1	0.09994
42	2011	9	30	0.00000
42	2011	9	40	0.00000
42	2012	1	1	0.23327

sourceTypeID	modelYearID	fuelTypeID	engTechID	fuelEngFraction
42	2012	2	1	0.69241
42	2012	3	1	0.07432
42	2012	9	30	0.00000
42	2012	9	40	0.00000
42	2013	1	1	0.21471
42	2013	2	1	0.68374
42	2013	3	1	0.10154
42	2013	9	30	0.00000
42	2013	9	40	0.00000
42	2014	1	1	0.66667
42	2014	2	1	0.33333
42	2014	3	1	0.00000
42	2014	9	30	0.00000
42	2014	9	40	0.00000
42	2015	1	1	1.00000
42	2015	2	1	0.00000
42	2015	3	1	0.00000
42	2015	9	30	0.00000
42	2015	9	40	0.00000
42	2016	1	1	0.25540
42	2016	2	1	0.64255
42	2016	3	1	0.09466
42	2016	9	30	0.00739
42	2016	9	40	0.00000
42	2017	1	1	1.00000
42	2017	2	1	0.00000
42	2017	3	1	0.00000
42	2017	9	30	0.00000
42	2017	9	40	0.00000
42	2018	1	1	0.75000
42	2018	2	1	0.25000
42	2018	3	1	0.00000
42	2018	9	30	0.00000
42	2018	9	40	0.00000
42	2019	1	1	1.00000
42	2019	2	1	0.00000
42	2019	3	1	0.00000
42	2019	9	30	0.00000
42	2019	9	40	0.00000
42	2020	1	1	1.00000
42	2020	2	1	0.00000
42	2020	3	1	0.00000
42	2020	9	30	0.00000
42	2020	9	40	0.00000
42	2021	1	1	0.00000
42	2021	2	1	1.00000
42	2021	3	1	0.00000

sourceTypeID	modelYearID	fuelTypeID	engTechID	fuelEngFraction
42	2021	9	30	0.00000
42	2021	9	40	0.00000
42	2022	1	1	0.28243
42	2022	2	1	0.60622
42	2022	3	1	0.09748
42	2022	9	30	0.01387
42	2022	9	40	0.00000
42	2023	1	1	1.00000
42	2023	2	1	0.00000
42	2023	3	1	0.00000
42	2023	9	30	0.00000
42	2023	9	40	0.00000
42	2024	1	1	1.00000
42	2024	2	1	0.00000
42	2024	3	1	0.00000
42	2024	9	30	0.00000
42	2024	9	40	0.00000
42	2025	1	1	0.30319
42	2025	2	1	0.58950
42	2025	3	1	0.08350
42	2025	9	30	0.02381
42	2025	9	40	0.00000

MOVESLink4

MOVESLink4 processes link data files output by the MAG transportation models. The program calculates emissions for roadway links in the MAG highway networks, which include all of Maricopa and Pinal counties. Traffic volumes for four time periods (AM peak, mid-day, PM peak, and nighttime) for each link are converted into hourly volumes based upon traffic count data collected in Maricopa and Pinal counties. Hourly emission factors are developed by running MOVES4 for each facility type, area type, and vehicle class using link speeds by time of day.

The transportation model inputs to MOVESLink4 consist of database formatted files that contain link-specific data and node coordinate definitions. MOVESLink4 also requires the following data as input:

- A table containing adjustment factors used to allocate traffic volumes for four time periods to hourly traffic volumes.

- A matrix of emission factors for a range of hours, facility types, area types, vehicle classes, and vehicle ages (generated by the MOVES model).

- The ratio of vehicles participating in the I/M program.

- The year being modeled.

- The regulatory fuel RVP values and MOVES default fuel parameters adjusted by the MOVES Fuel Wizard.

- The annual transit bus data for natural gas, gasoline, and diesel fuels.

For the Sun Corridor MPO Conformity Analysis, the applicable conformity tests for PM-10 in the West Pinal PM-10 Nonattainment Area and PM-2.5 and NOx in the West Central Pinal PM-2.5 Nonattainment Area are the Action/Baseline scenario analyses for 2030, 2040, and 2050. MOVES4 and MOVESLink4 were applied to estimate vehicle emissions for PM-10, PM-2.5, and NOx.

Traffic data (vehicle miles of travel and speeds by link) were generated with the MAG transportation models. GIS was used to derive VMT and vehicle speed by link for the West Pinal PM-10 and West Central Pinal PM-2.5 nonattainment areas. The MOVESLink4 model was used to calculate vehicle exhaust, tire wear and brake wear emissions for each nonattainment area using MOVES4 emission factors and the traffic data.

For this conformity analysis, MAG utilized monthly average meteorological and fuel inputs and processed MOVES4 for each month of the selected season resulting in a more accurate estimate of emissions. As a post processing step, MOVESLink4 model calculated the weighted seasonal average emissions for each day type (weekday and weekend) from the monthly average results by weighting the number of days for each month for the selected season. Finally, MOVESLink4 model calculated the weighted seasonal average day emissions by weighting the number of days for each day type.

On October 4, 2024, MAG staff discussed changes to the HPMS reconciliation factor and the use of monthly average meteorological data that more accurately estimate emissions with EPA and FHWA. EPA and FHWA concurred with both proposed changes for regional emissions analyses.

AP-42

PM-10 emission factors for reentrained dust from vehicles traveling on unpaved and paved roads in the West Pinal PM-10 nonattainment areas are calculated using the latest equations found in Sections 13.2.2 and 13.2.1.3, respectively, of AP-42, EPA Compilation of Air Pollutant Emission Factors. The AP-42 equation for paved roads was revised by EPA in January 2011. The unpaved and paved road emission factors are multiplied by vehicle miles of travel to estimate unpaved and paved road emissions. The following two sections discuss the assumptions used to calculate PM-10 emissions from unpaved and paved roads.

Paved and unpaved road PM-2.5 emissions were not estimated for the West Central Pinal PM-2.5 Nonattainment Area, because Section 93.119(f)(8) of the EPA transportation conformity regulations indicates that reentrained road dust only needs to be included in the conformity analysis for PM-2.5 nonattainment areas if EPA or the Arizona Department of Environmental Quality have made a finding and notified MAG and the U.S. Department of Transportation that these sources are a significant contributor to the PM-2.5 problem.

PM-10 Emissions from Public and Private Unpaved Roads

The AP-42 equation that calculates PM-10 emission factors for unpaved road fugitive dust requires as input the road surface material silt content, road surface moisture content, average vehicle speed, and the annual number of wet days (with at least 0.01 inch of precipitation). For the West Pinal PM-10 Nonattainment Area, the AP-42 inputs for public unpaved roads are provided in Table 20 and the AP-42 inputs for private unpaved roads are provided in Table 21. Average vehicle speeds are available for five classes of public unpaved roads (Classes A-E) and are identical to the average speeds used in the 2017 Base Year PM-10 Emissions Inventory for the West Pinal County Serious PM-10 Nonattainment Area, December 2023. The 2017 Base Year PM-10 Emissions Inventory was used in the development of the 2023 Five Percent Particulate Plan for PM-10 for the West Pinal County Nonattainment Area. For the five classes, Class A represents the lowest average daily traffic (ADT) roads and Class E represents the highest ADT roads.

PCAQCD provided a GIS shapefile in 2021 that contained the lengths and ADT for all public unpaved roads within the nonattainment area. Using the data from this shapefile and the AP-42 equation values, 2017 base year emissions for all public unpaved roads were calculated. To be consistent with the 2023 Five Percent Particulate Plan for PM-10, for the Action/Baseline analysis years, the same values used to calculate 2017 base year emissions are used, with the exception of grown ADT values. Consistent with assumptions in the 2023 Five Percent Particulate Plan for PM-10, 2030, 2040 and 2050 ADT on each public unpaved road is grown from 2017 ADT by using the VMT growth rate observed on paved low-ADT arterials from the Action and Baseline scenarios as a surrogate.

TABLE 20.
WEST PINAL PM-10 NONATTAINMENT AREA PUBLIC UNPAVED ROADS
(2017 BASE YEAR INVENTORY DATA)

	k	s	S	M	C	P		
Road Type	**lb/mi**	**%**	**mph**	**%**	**lb/mi**	**wet days**	**ADT**	**Miles**
Class A	1.8	7.1	29	0.3	0.00047	25	15	7.22
Class B	1.8	7.1	44	0.3	0.00047	25	53	324.10
Class C	1.8	7.1	37	0.3	0.00047	25	104	14.63
Class D	1.8	7.1	47	0.3	0.00047	25	160	21.3
Class E	1.8	7.1	40	0.3	0.00047	25	485	7.18

TABLE 21.
WEST PINAL PM-10 NONATTAINMENT AREA PRIVATE UNPAVED ROADS
(2017 BASE YEAR INVENTORY DATA)

Road Type	k lb/mi	s %	S mph	M %	C lb/mi	P wet days	ADT	Miles
Non-Irrigation Roads	1.8	14.4	25	0.3	0.00047	25	29	1,027.54
Alleys	1.8	14.4	10	0.3	0.00047	25	4	51.88

In addition to growing ADT of public unpaved roads by the growth rate described above, unpaved public roads that have been paved since 2017 have been removed. In the committed controls for the 2023 Five Percent Particulate Plan for PM-10, beginning in 2023, all unpaved public roads with ADT above 26 are required to be either paved or stabilized. The 2023 Five Percent Particulate Plan for PM-10 assumes that beginning in 2024, implementation of these committed controls will result in combined emission reduction benefits equivalent to the paving of 15 miles per year and the stabilization of 15 miles per year as documented in the Technical Support Document for the 2023 Five Percent Particulate Plan for PM-10. This assumption is carried forward into future years until all unpaved roads with ADT above 26 are paved or stabilized.

For the Action scenario, the control assumptions for public unpaved roads from the 2023 Five Percent Particulate Plan for PM-10 are applied without any modification. For the Baseline scenario, the control assumptions are reduced in the future, as under a Baseline scenario less funds are allocated for the paving and stabilizing of unpaved roads, and less new paved roads are being built, which increases and forces increased traffic onto existing unpaved roads. To account for this, under a Baseline scenario, it is assumed that emissions reductions equivalent to the paving and stabilizing of 10 miles per year are occurring, instead of the 15 miles per year assumed in the 2023 Five Percent Particulate Plan for PM-10.

On January 15, 2025, EPA and FHWA concurred with the assumption of reducing the number of unpaved roads paved under the Baseline scenarios to 10 miles per year. MAG explained that this assumption is reasonable because new road paving projects that would normally be included and identified for funding in a TIP under an Action scenario (for example, paving projects funded with CMAQ funds) are not to be included in the status quo Baseline scenario. As such, it is very reasonable to assume that without the identification and funding for paving projects that exist in the Action scenario, the Baseline scenario will not be able to fund the paving of public unpaved roads beyond present activities, or at a rate that would be equal to the Action scenario. In fact, it would not be unreasonable to assume that no new paving projects would continue under the Baseline scenario, as there would be no funding identified for these paving projects. However, to keep assumptions conservative in estimating emissions for a Baseline scenario, road paving projects were only reduced by 33%, from the 15 miles per year expected in the Action scenario, resulting in the 10 miles per year currently assumed in the Baseline

scenario. While the requirement to control PM-10 emissions from public unpaved roads with ADT above 26 exists under both an Action and a Baseline scenario, the rate at which public unpaved roads are either paved or stabilized will be different under each scenario given the project identification and funding limitations of a Baseline scenario. For example, an unpaved road that is scheduled to be paved with CMAQ funding under the Action scenario, may only be able to be stabilized under a Baseline scenario if funding for paving has not been identified. In general, stabilization only provides 50% of the emission reduction benefits that paving provides, thus resulting in different emissions under the Baseline or Action scenario.

The ADT is multiplied by the miles to calculate VMT. The VMT is multiplied by the AP-42 emission factor to obtain the PM-10 unpaved road emissions for each of the five road type classifications (Classes A-E).

As described in the 2023 Five Percent Particulate Plan for PM-10 motor vehicle emissions budgets, private unpaved roads include non-irrigation roads and alleys. Consistent with the assumptions in the 2023 Five Percent Particulate Plan for PM-10, it is assumed that there is no growth in VMT from private unpaved roads from the 2017 base year PM-10 emissions for either the Action scenario or the Baseline scenario. To calculate 2030, 2040, and 2050 PM-10 emissions from private unpaved roads, 2017 base year PM-10 emissions are held constant. The 2023 Five Percent Particulate Plan for PM-10 assumes that the committed control measures for unpaved roads will only be applied to public unpaved roads due to the financial difficulties in using public funds on private roads. If a private unpaved road becomes paved, or becomes a public unpaved road, those emissions are removed from the private unpaved road inventory. After accounting for known paving, private unpaved road emissions in 2030, 2040 and 2050 are identical for the Action and Baseline scenarios.

For this updated methodology, PM-10 emissions from unpaved agricultural roads (e.g. irrigation canal roads, harvest roads, etc.) are no longer included in the Action/Baseline scenarios as these roads have not been included in the motor vehicle emissions budget in the 2023 Five Percent Particulate Plan for PM-10.

PM-10 Emissions for Reentrained Dust from Paved Roads

For the West Pinal PM-10 Nonattainment Area, the estimation of PM-10 emissions for reentrained dust from paved roads are also based on the AP-42 equation released by EPA in January 2011 and are consistent with the data inputs and control assumptions described in the 2023 Five Percent Particulate Plan for PM-10.

The AP-42 equation that calculates PM-10 emission factors for paved road fugitive dust requires as input the road surface silt loading, the average weight of vehicles traveling on paved roads, and the number of wet days (with at least 0.01 inch of precipitation). These values are shown in Table 22 below for the Action scenarios and Table 23 for the Baseline scenarios.

The silt loadings were derived from the MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area and were used in the development of the motor vehicle emissions budgets in the 2023 Five Percent Particulate Plan for PM-10. Since the silt loadings are stratified by road type, vehicle weights are estimated separately for freeways and arterials for each analysis year. The average vehicle weights for freeways and arterials were calculated using MOVES4 Source Type (i.e., vehicle class) output, based on vehicle registrations for Pinal County and the latest traffic assignment data for each year for the Action and Baseline scenarios. The average vehicle weights for freeways and arterials in units of tons, are shown in Table 22 below for the Action scenarios and in Table 23 for the Baseline scenarios.

TABLE 22.
PAVED ROAD REENTRAINED PM-10 EMISSIONS IN THE WEST PINAL PM-10 NONATTAINMENT AREA (ACTION SCENARIO)

Year	Facility Type	k g/mi	sL g/m^2	W tons	P* wet days	N days in yr	E g/vmt	VMT mile/day
2026	Freeway	1.00	0.02	8.12	25	365	0.24	2,205,116
	High ADT Arterial	1.00	0.07	2.68	25	365	0.23	1,614,367
	Low ADT Arterial	1.00	0.23	2.68	25	365	0.71	2,840,861
2030	Freeway	1.00	0.02	8.23	25	365	0.24	2,450,843
	High ADT Arterial	1.00	0.07	2.67	25	365	0.23	2,247,777
	Low ADT Arterial	1.00	0.23	2.67	25	365	0.70	3,262,409
2040	Freeway	1.00	0.02	8.61	25	366	0.25	3,262,336
	High ADT Arterial	1.00	0.07	2.74	25	366	0.23	4,094,243
	Low ADT Arterial	1.00	0.23	2.74	25	366	0.72	4,106,862
2050	Freeway	1.00	0.02	9.16	25	365	0.27	4,344,237
	High ADT Arterial	1.00	0.07	2.74	25	365	0.23	6,532,004
	Low ADT Arterial	1.00	0.23	2.74	25	365	0.72	4,795,856

TABLE 23.
PAVED ROAD REENTRAINED PM-10 EMISSIONS IN THE WEST PINAL PM-10 NONATTAINMENT AREA (BASELINE SCENARIO)

Year	Facility Type	k g/mi	sL g/m^2	W tons	P* wet days	N days in yr	E g/vmt	VMT mile/day
2030	Freeway	1.00	0.02	8.26	25	365	0.24	2,529,974
	High ADT Arterial	1.00	0.07	2.60	25	365	0.22	2,288,064
	Low ADT Arterial	1.00	0.23	2.60	25	365	0.68	2,895,966
2040	Freeway	1.00	0.02	8.72	25	366	0.25	3,479,080
	High ADT Arterial	1.00	0.07	2.56	25	366	0.22	3,953,224
	Low ADT Arterial	1.00	0.23	2.56	25	366	0.67	3,405,107
2050	Freeway	1.00	0.02	9.11	25	365	0.27	4,765,305
	High ADT Arterial	1.00	0.07	2.55	25	365	0.22	5,732,394
	Low ADT Arterial	1.00	0.23	2.55	25	365	0.67	3,976,630

A control factor based upon the control effectiveness assumptions in the 2023 Five

Percent Plan is equally applied to both the resulting Action and Baseline AP-42 emission factors to reflect the adopted controls in the 2023 Five Percent Particulate Plan for PM-10.

In addition to AP-42 emission factors for freeways, high ADT arterials, and low ADT arterials, the 2023 Five Percent Particulate Plan for PM-10 also includes paved road reentrained dust PM-10 emissions from asphalt rock dust palliative (ARDP, often referred to as “chip-sealed” roads) roads. Consistent with the 2023 Five Percent Particulate Plan for PM-10, ARDP roads are assumed to emit reentrained road dust at a rate 10 percent higher than traditionally paved roads, since ARDP roads require more upkeep to maintain. ARDP roads are assumed to have the same silt loading content as low ADT arterials. The same paved road control factors applied to traditionally paved roads are also applied to ARDP roads, consistent with the assumptions in the 2023 Five Percent Particulate Plan for PM-10.

The Action and Baseline AP-42 emission factors for paved roads are multiplied by the VMT for freeways, high traffic arterials, low traffic arterials and ARDP roads to obtain total paved road emissions. The VMTs for freeways and high and low traffic arterials for the Action and Baseline scenarios are derived from the MAG transportation model traffic assignments. All centroid connectors are considered low traffic arterials. VMT on ARDP roads is grown from the 2017 base year inventory data based upon the growth rate of low ADT arterials from 2017 to the analysis years, as the ABM network assignments do not provide VMT estimates for ARDP roads.

Road Construction

As required under 40 CFR 93.122(e) of the transportation conformity rule, PM-10 emission estimates from road construction in the West Pinal PM-10 Nonattainment Area are included in the Sun Corridor MPO Conformity Analysis for the Action scenarios. On March 6, 2025, EPA and FHWA concurred with a new approach to estimate road construction dust emissions from the network assignment data. MAG reviewed how other agencies calculate road construction emissions for their conformity analyses and developed a new calculation method to estimate road construction dust emissions from the ABM network assignments. The new calculation method is based on a CARB methodology which multiplies an average project duration, an emission rate, and acres disturbed by new road built. Then control efficiency and rule effectiveness are applied to the emission estimates. In the new calculation method, the average project duration of 12 months, emission rates of 0.265 tons/acre-month, control efficiency of 90%, and rule effectiveness of 90% are obtained from the 2023 Five Percent Particulate Plan for PM-10. In the West Pinal PM-10 Nonattainment Area, daily emissions are derived from annual calculations using a 365-day period. For the Baseline scenario, road construction emissions are assumed to be zero since no new construction is anticipated in future analysis years, as specified in the 2023 Five Percent Particulate Plan for PM-10.

Road construction emissions for the West Central Pinal PM-2.5 Nonattainment Area were

not included in the Action/Baseline scenarios per 40 CFR 93.122(f), as there is no implementation plan that identifies construction-related PM-2.5 emissions as a significant contributor to the PM-2.5 nonattainment problem.

5 TIP AND REGIONAL TRANSPORTATION PLAN CONFORMITY

The principal requirements of the federal transportation conformity rule for TIP and Regional Transportation Plan conformity determinations are: (1) the TIP and Regional Transportation Plan (RTP) must pass an emissions budget test with a budget that has been found to be adequate or approved by EPA for transportation conformity purposes, or interim emissions tests; (2) the latest planning assumptions and emission models in force at the time the conformity analysis begins must be employed; (3) the TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and (4) consultation. Consultation generally occurs both at the beginning of the process of preparing the conformity analysis, on the proposed models, associated methods, and assumptions for the upcoming analysis and the projects to be assessed, and at the end of the process, on the draft conformity analysis report. The final determination of conformity for the TIP and Regional Transportation Plan is the responsibility of the Federal Highway Administration and the Federal Transit Administration.

The previous chapters and the appendices present the documentation for all of the requirements listed above for conformity determinations, except for the conformity test results. Prior chapters have also addressed the updated documentation required under the federal transportation conformity rule for the latest planning assumptions. A status report on transportation control measures is not necessary since there are no applicable plans for the West Pinal PM-10 Nonattainment Area and West Central Pinal PM-2.5 Nonattainment Area. The Appendix includes the public notice, consultation correspondence, and any comments received and responses made as part of the public comment process.

This chapter presents the results of the conformity tests, satisfying the remaining requirement of the federal transportation conformity rule. Conformity interim emissions Action/Baseline tests were performed for the Pinal County nonattainment areas. The results of the Pinal County conformity analyses are described below.

PINAL COUNTY NONATTAINMENT AREAS

For the Pinal County nonattainment areas, Action/Baseline tests were conducted for particulate matter (PM-10) for the West Pinal PM-10 Nonattainment Area and particulate matter (PM-2.5) and nitrogen oxides (NOx) for the West Central Pinal PM-2.5 Nonattainment Area. Also, for informational purposes, MAG conducted a budget test using the 2026 budget established in the submitted 2023 Five Percent Particulate Plan for PM-10 for the West Pinal County Nonattainment Area. For each test, the required emissions estimates were developed using the transportation and emission modeling

approaches required under the federal transportation conformity rule and summarized in Chapters 3 and 4. The applicable conformity tests were reviewed in Chapter 1. The results are summarized below. Table 24 and figures 5 through 7 present the conformity results for the PM-10 and PM-2.5 nonattainment areas for each of the analysis years tested.

Conformity Test Results for the West Pinal PM-10 Nonattainment Area

As required by the EPA transportation conformity rule, the interim emissions tests must be applied since EPA has not found the 2026 budget to be adequate for transportation conformity purposes or approved the 2023 Five Percent Particulate Plan for PM-10 for the West Pinal County Nonattainment Area. The conformity modeling results for PM-10 are listed in Table 24 and graphed in Figure 5. The PM-10 emissions were calculated for the PM-10 nonattainment area for an annual average day.

The projected PM-10 emissions in 2030, 2040, and 2050 for the Action scenarios are 39,835, 35,305, and 32,917 kilograms per day, respectively. The projected PM-10 emissions in 2030, 2040, and 2050 for the Baseline scenarios are 41,209, 37,985, and 35,330 kilograms per day, respectively.

Since the PM-10 emissions projected for the Action scenarios are not greater than the PM-10 emissions projected for the Baseline scenarios in all conformity analysis years, it is also reasonable to expect the build emissions would not exceed the baseline emissions for the time periods between the analysis years. These results support a finding of conformity.

Also, for informational purposes, MAG conducted the budget test using the 2026 budget of 42.5 metric tons per day established in the submitted 2023 Five Percent Particulate Plan for PM-10 for the West Pinal County Nonattainment Area. The conformity modeling results are provided in Table 25. The PM-10 emissions were calculated for the West Pinal PM-10 Nonattainment Area for an annual average day. The projected emissions in 2026, 2030, 2040, and 2050 are 42.2, 39.8, 35.3, and 32.9 metric tons per day, respectively, which are all less than the 2026 motor vehicle emissions budget of 42.5 metric tons per day.

Conformity Test Results for the West Central Pinal PM-2.5 Nonattainment Area

The conformity modeling results for PM-2.5 and NOx are listed in Table 24 and graphed in Figure 6 and Figure 7. The PM-2.5 and NOx emissions were calculated for the West Central Pinal PM-2.5 Nonattainment Area for an annual average day.

The projected PM-2.5 emissions in 2030, 2040, and 2050 for the Action scenarios are 16, 14, and 16 kilograms per day, respectively. The projected PM-2.5 emissions in 2030, 2040, and 2050 for the Baseline scenarios are 16, 15, and 19 kilograms per day, respectively.

The projected NOx emissions in 2030, 2040, and 2050 for the Action scenarios are 319, 181, and 213 kilograms per day, respectively. The projected NOx emissions in 2030, 2040, and 2050 for the Baseline scenarios are 361, 263, and 311 kilograms per day, respectively.

Since the PM-2.5 and NOx emissions projected for the Action scenarios are not greater than the PM-2.5 and NOx emissions projected for the Baseline scenarios in all conformity analysis years, it is also reasonable to expect the build emissions would not exceed the baseline emissions for the time periods between the analysis years. These results support a finding of conformity.

Figure 5: PM-10 Results for Conformity Interim Emission (Action/Baseline) Test
Pinal County PM-10 Nonattainment Area

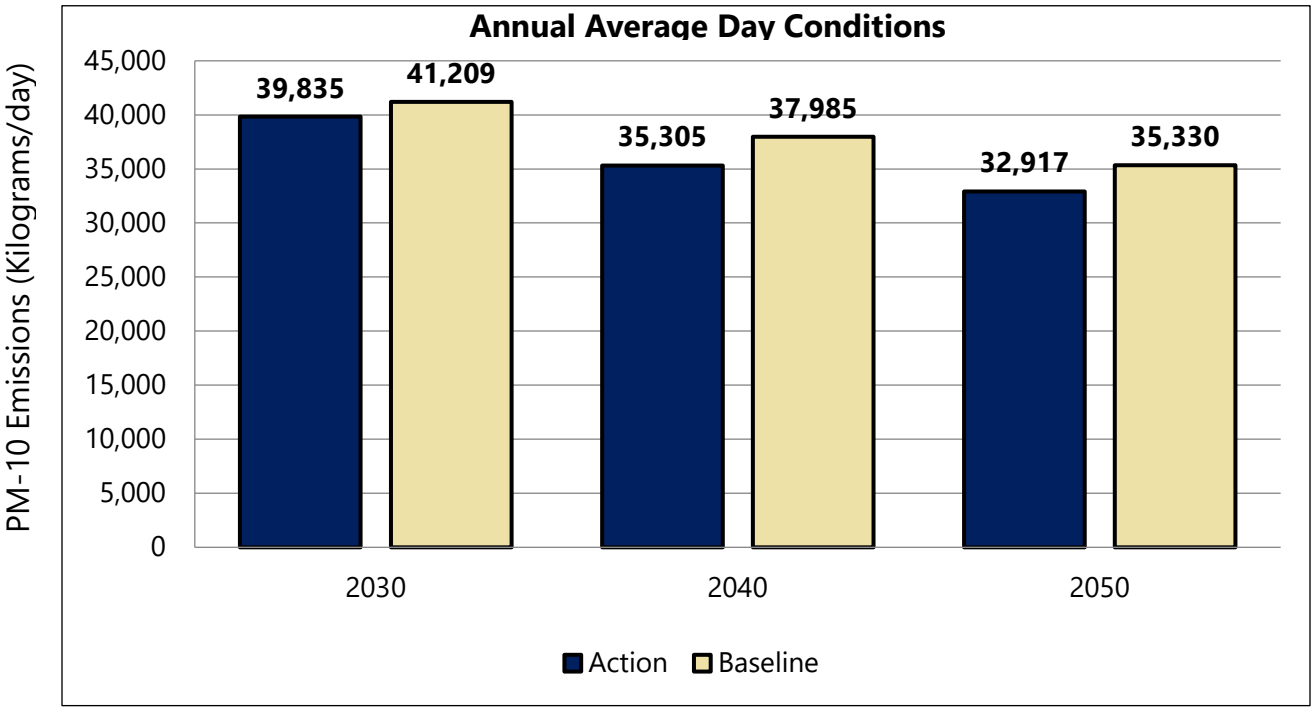


Figure 6: PM-2.5 Results for Conformity Interim Emission (Action/Baseline) Test

Pinal County PM-2.5 Nonattainment Area

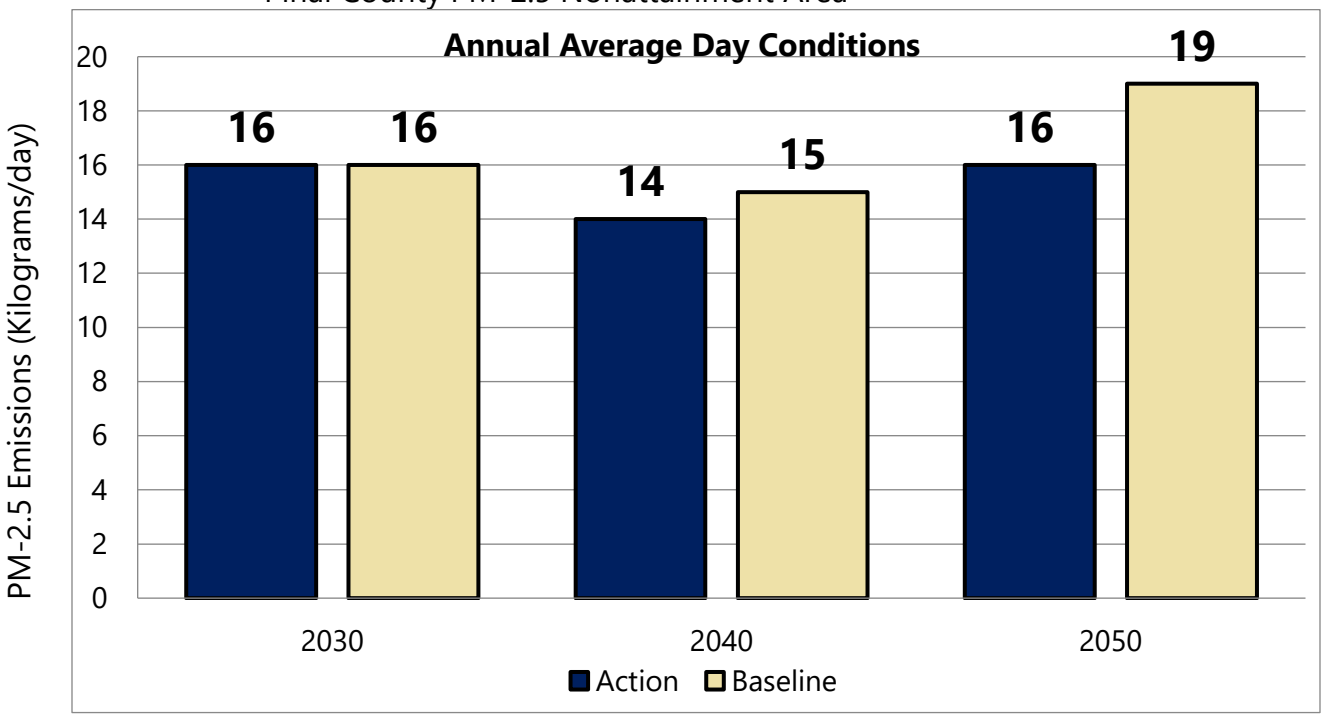


Figure 7: NOx Results for Conformity Interim Emission (Action/Baseline) Test

Pinal County PM-2.5 Nonattainment Area

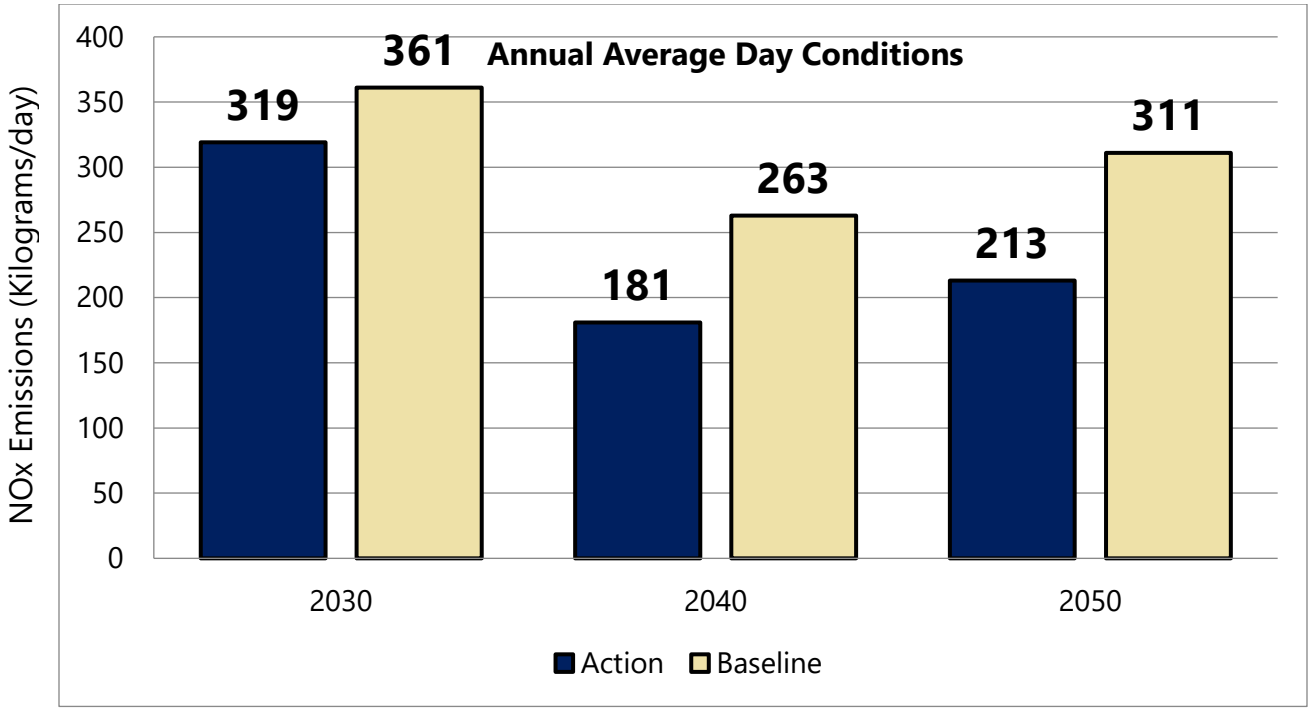


TABLE 24.
CONFORMITY INTERIM EMISSION (ACTION/BASELINE) TEST RESULTS
(KILOGRAMS/DAY) PINAL COUNTY NONATTAINMENT AREAS

Pollutant	PM-10	PM-2.5	NOx
2030			
- Action	39,835	16	319
- Baseline	41,209	16	361
2040			
- Action	35,305	14	181
- Baseline	37,985	15	263
2050			
- Action	32,917	16	213
- Baseline	35,330	19	311

TABLE 25.
CONFORMITY TEST RESULTS USING THE BUDGET FROM THE SUBMITTED 2023 FIVE PERCENT PLAN FOR PM-10 FOR THE PINAL PM-10 NONATTAINMENT AREA FOR INFORMATIONAL PURPOSES
(METRIC TONS/DAY)

Pollutant	**PM-10**
Budget Test	42.5
2026	42.2
2030	39.8
2040	35.3
2050	32.9

The submitted 2023 Five Percent Particulate Plan for PM-10 for the Pinal County Nonattainment Area establishes a 2026 PM-10 budget of 42.5 metric tons/day. EPA has advised that MAG should include the budgets from submitted plans so that an adequacy finding on a submitted SIP does not interfere with the conformity process.

GLOSSARY

40 CFR Parts 51 and 93	Sections 51 and 93 from Title 40 of the Code of Federal Regulations describing the transportation conformity rule.
ADEQ	Arizona Department of Environmental Quality.
ADOT	Arizona Department of Transportation.
AP-42	AP-42, Fifth Edition, provides PM-10 emission factors. Common name for the EPA Compilation of Air Pollutant Emission Factors.
Applicable Plan	An air quality plan that has been approved by EPA for a specific air pollutant.
A.R.S.	Arizona Revised Statutes. The codified laws of the State of Arizona.
Arterial Roadway	A major urban street serving through traffic and also providing access to adjacent land.
Attainment	The status of having air quality that is below (i.e., cleaner air) the allowable national standard for a particular pollutant.
AZ-SMART	Arizona Socioeconomic Modeling, Analysis, and Reporting Toolbox is the MAG socioeconomic model used to develop population and employment projections.
Action/Baseline	Action or Build refers to the Action scenario which assumes the Baseline or No-Build scenario and the implementation of the proposed action (included in the TIP or RTP) for each of the years to be analyzed. The Baseline scenario assumes the future transportation network without implementation of the proposed action (included in the TIP or RTP) for the years to be analyzed.

CAA	The U.S. Clean Air Act, referring to the Air Pollution Control Act of 1955, as subsequently amended in 1963, 1967, 1970, 1974, 1977, and 1990.
Capacity	The maximum number of vehicles that a roadway can carry in a given time period under prevailing roadway, traffic, and control conditions.
Centroid Connector	An abstract representation of the local street system, as used in MAG travel demand models. These links connect the centroids of zones, where trips begin or end, to arterial or collector roadways on the modeled road network.
CO	Carbon monoxide. A colorless, odorless, poisonous gas that results from the incomplete combustion of carbon-based fuels, such as gasoline.
Collector Roadway	A minor urban street providing access to and from local streets and serving adjacent land use.
Concentration	The relative content of a pollutant in the air, expressed as a volume unit to volume unit often expressed as an average for a specified time interval. For example, the national standard for ambient carbon monoxide concentration is an eight-hour average of 9.0 parts per million.
Conformity	An analysis which demonstrates that a transportation plan, program, or project conforms with the State Implementation Plan purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and that such activities will not cause or contribute to any new violation of any standard in any area; increase the frequency or severity of any existing violation of any standard in any area; or delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.
Congestion	Traffic congestion is a condition in which vehicles experience undue delay. It is quantified in the MAG travel demand models by the ratio of traffic volume to capacity (V/C). A V/C ratio of 1.00 or more is considered severe congestion.

Emission Factor	The rate at which a pollutant is emitted from a given source (example: grams per mile) for given conditions (e.g., vehicle type and model year, vehicle speed, fuel type, and ambient air temperature).
Episode Day	A day selected to represent conditions (meteorology, etc.) under which violations of the air quality standard for a particular pollutant are likely to occur.
EPA	United States Environmental Protection Agency.
Exceedance	A term used to refer to an episode during which ambient concentrations of an air pollutant in a region are higher than the allowable national standard.
FHWA	Federal Highway Administration.
FIP	Federal Implementation Plan.
FMS	Freeway Management System. Infrastructure such as cameras, variable message signs, and ramp metering systems to improve the flow of people and goods on limited access facilities.
FTA	Federal Transit Administration.
Freeway	A divided highway with two or more lanes for the exclusive use of traffic in each direction, and with full control of access and egress.
FY	Fiscal Year. The federal fiscal year extends from October 1 to September 30. For example, FY 2025 began on October 1, 2024.
Hot Spot	Localized area with the potential to cause or contribute to a violation of an air quality standard. For example, a busy intersection where vehicular traffic may cause or contribute to increased emissions of carbon monoxide may attribute to a violation of the standard.
HOV	High Occupancy Vehicle. Multi-occupant vehicles such as a carpool, vanpool, or bus.
HOV Lane	A roadway lane available for use by High Occupancy Vehicles.

HPMS	Highway Performance Monitoring System. Summary information for urbanized areas provides detailed data for a sample of the arterial and collector functional systems to assess highway condition, performance, air quality trends, and future investment requirements.
I/M	Vehicle Inspection/Maintenance Program.
ITS	Intelligent Transportation System. The deployment of advanced electronics and information technologies to improve the performance of freeways and arterial roadways.
Link	A computer record describing a section of roadway in the MAG transportation models.
Local Roadway	A road, usually with low traffic volume, designed solely to serve adjacent development rather than through traffic.
MAG	Maricopa Association of Governments. The Maricopa Association of Governments was designated the metropolitan planning agency for Maricopa County, Arizona, by Governor Jack Williams on December 14, 1973.
Metric Ton	A unit of mass equal to 1000 kilograms, or approximately 2203 pounds.
Mode Choice Model	A computer model which determines mode choice, such as transit, auto driver, and auto passenger, based on variables such as travel times, costs, and income of travelers.
MOVES4	MOVES4 is a currently approved EPA model for estimating onroad vehicle emission factors. This model is used to estimate the emission factors for CO, VOC, NOx, and PM-10 exhaust, tire wear, and brake wear emissions.
MOVESLink4	A MAG software program that combines emission factors (such as from MOVES4) with link-level transportation data to produce onroad mobile emission inventories.

MPO	Metropolitan Planning Organization. A body of elected public officials responsible for regional transportation decision-making, as required under federal transportation planning regulations.
NAAQS, or National Standard	Refers to the National Ambient Air Quality Standards (NAAQS) which are the maximum pollutant levels which may not be exceeded in the ambient air to protect the public from adverse health effects.
Network	A computer readable representation of a specific urban street and highway system.
Nonattainment Area	An area designated by the U.S. Environmental Protection Agency as not being in attainment of the national standard for a specified pollutant.
Node	A point identifying one end of a link in the MAG transportation models.
NO_x	Nitrogen Oxides includes nitric oxide (NO) and nitrogen dioxide (NO_2). These gaseous air pollutants combine with volatile organic compounds (i.e. hydrocarbons) in the presence of sunlight to produce ozone.
O_3	Ozone is a secondary pollutant formed by the combination of VOCs and NO_x in the presence of sunlight.
OBD	On-Board Diagnostics. A computer based system built into all model year 1996 and newer light-duty cars and trucks. OBD monitors the performance of some of the engines= major components, including individual emission controls.
Phased in I/M Cutpoints	Cutpoints are the maximum emission level, by pollutant, used to determine if a vehicle passes or fails the emissions test administered through the vehicle inspection and maintenance program. The phased-in I/M cutpoints are the cutpoints currently enacted into legislation for vehicles subject to the enhanced emissions test.
PCAQCD	Pinal County Air Quality Control District.
PM-10	Particulate Matter less than or equal to ten microns in diameter.

ppm	Parts per million, a measure of pollution concentration.
psi	Pounds per square inch, a measure of pressure.
Reentrained Dust	Dust deposited on the roadway that is subsequently projected into the air by the passage of motor vehicles.
RTP	Regional Transportation Plan.
SIP	State Implementation Plan. Mandated by the Clean Air Act, SIPs contain details to monitor, control, maintain, and enforce compliance with National Ambient Air Quality Standards.
Socioeconomic Data	Data consists primarily of TAZ-level household projections of population and employment by type which are input to the MAG travel demand models.
Sun Corridor MPO	Sun Corridor Metropolitan Planning Organization was designated on May 6, 2013 and includes the cities of Casa Grande, Coolidge, Eloy and unincorporated areas of Pinal County.
TAZ	Traffic Analysis Zone. A small geographic area for which socioeconomic data is estimated in the MAG travel demand models.
TCM	Transportation Control Measure. A TCM as defined in CAA Section 108(f)(1)(A) includes any measure in an applicable implementation plan which is intended to reduce emissions from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions (e.g., transit improvements).
TIP	Transportation Improvement Program. An annual or biennial document listing transportation projects to be funded in upcoming years.
TransCAD	Software programs which are used to perform the MAG travel demand modeling.
U.S. DOT	United States Department of Transportation.

V/C Ratio	Volume to Capacity Ratio. A parameter used to measure congestion. For a given roadway link, it is calculated as total traffic volume divided by capacity.
Violation	A term used to define the number of exceedances that result in noncompliance with the national standard.
VMT	Vehicle Miles of Travel. A measure of total vehicle travel within a specified area and time frame.

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