



**Arizona Department of Transportation
Environmental Planning**

Air Quality Technical Report

SR 30: Sarival Ave. To SR 202L

Federal Project Numbers:

030-C(001), 030-C(002), 030-C(004)T, 030-C(005)T NH-801-B(ARG)

ADOT Project Numbers:

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September 2026

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by ADOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated June 25, 2024, and executed by FHWA and ADOT.

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EXECUTIVE SUMMARY

This Air Quality Technical Report supports the selected route for the future State Route 30 (SR 30) freeway corridor between State Route Loop 202 (SR 202L) and Sarival Avenue, near the future State Route Loop 303 (SR 303L). The report evaluates the project's potential air quality impacts within the study area.

According to this analysis, the project is not predicted to cause or exacerbate a violation of any National Ambient Air Quality Standards (NAAQS). It is also predicted to have no measurable effect on MSAT emissions.

1.0 INTRODUCTION

In 2019, the Arizona Department of Transportation (ADOT) completed an environmental and engineering study that identified the selected route for the future State Route 30 (SR 30) freeway corridor between State Route Loop 202 (SR 202L) and Sarival Avenue, near the future State Route Loop 303 (SR 303L). This corridor represents the Center Segment of the Tres Rios Freeway, which would serve as an alternate route to Interstate 10 (I-10). The East and West Segments of the SR 30 corridor will be constructed after the Center Segment and do not yet have an environmental or engineering study to define the selected routes. This Air Quality Technical Report has been prepared to demonstrate air quality conformity for projects located in the Center Segment in support of each project's environmental documentation.

1.1 PROJECT DESCRIPTION

The Center Segment of the SR 30 corridor will be built through multiple projects starting on the east end at SR 202L and continuing west until Sarival Avenue. Corridor improvements would create 17 new signalized intersections at SR 30 interchanges and impact nine existing intersections.

The first piece of SR 30 to be constructed will be between 97th Avenue and SR 202L (the Project), which is being designed as two separate projects: ADOT project F0504 includes SR 30 between 97th Avenue and 71st Avenue, while ADOT project F0501 includes SR 30 between 71st Avenue and SR 202L, as well as the improvements along SR 202L between approximately W Van Buren Street and Carver Road (Figure 1). Projects F0504 and F0501 are being designed concurrently and will ultimately be constructed together beginning in 2027. Construction is expected to take approximately three years. The Project is a new and expanded highway project located within Phoenix and Maricopa County, Arizona. The Project would occur within ADOT right-of-way (ROW), Maricopa County Department of Transportation (MCDOT) ROW, Salt River Project (SRP) easement on Bureau of Reclamation (BOR), SRP easement on City of Phoenix (COP), and SRP easement on private lands.

Figure 1. Map of the Proposed Ultimate SR 30 Corridor



The purpose of the Project is to improve east-west highway capacity in western Maricopa County by constructing this segment of SR 30 and connect to SR 202L as a three-legged system Traffic Interchange (TI) (north, south, and west legs) during the initial phase. It will accommodate anticipated growth and future traffic volumes through 2050, with the ability to expand to the ultimate planned roadway configuration consisting of four general purpose lanes and one HOV lane in each direction, and direct connecting HOV ramps between SR 30 and SR 202L.

The Center Section has undergone design and environmental analysis for two segments, as shown in Figure 2 and described below.

SR 30 – 97th Ave to 71st Ave Segment

The scope of work for this Project segment includes:

- Construct SR 30 mainline between 97th Avenue and 71st Avenue providing three general purpose lanes, as well as ramp auxiliary lanes in each direction
- Construct diamond traffic interchanges at 91st Avenue and 83rd Avenue
- Construct new overpasses at 87th Avenue and 75th Avenue
- Construct an equipment crossing at 79th Avenue
- Construct a bridge over and/or fill in the material source pit west of 75th Avenue
- Construct retaining walls, as needed
- Construct sound barriers, as needed
- Construct new pavement, curb and gutter, barriers, and guardrails, as needed
- Construct interim connections from existing crossroads to ultimate crossroads
- Construct temporary roadways to maintain traffic, as needed
- Remove temporary roadways, as needed
- Reconstruct existing roadways, as needed

- Modify existing drainage facilities and construct new drainage facilities, as needed
- Construct new Americans with Disabilities Act (ADA) features, as needed
- Construct shared-use paths and pedestrian bridges and associated amenities, as needed
- Construct new and/or replace fence, as needed
- Install signals and lighting, as needed
- Remove existing signage and provide new signage, including embedded advance warning signs
- Obliterate and install roadway striping and raised pavement markers, as needed
- Install Freeway Management System (FMS) infrastructure
- Trim and/or remove vegetation, as needed
- Install best management practices (BMPs) for erosion control, as needed
- Install planting and irrigation, as needed
- Seed disturbed areas with native plants species, as needed
- Construct new utilities and/or relocate and adjust utilities, as needed
- Conduct utility potholing and geotechnical investigations, as needed

SR 30 – 71st Ave to SR 202L Segment

The scope of work for this Project segment includes:

- Construct the outermost six lanes (three in each direction, or 3+0), auxiliary lanes, and the outside shoulders of the ultimate typical section
- Construct the three-legged system TI at SR 202L South Mountain including the following connections:
 - Eastbound (EB) SR 30 Ramp to Northbound (NB) SR 202L
 - NB SR 202 Ramp to Westbound (WB) SR 30
 - EB SR 30 Ramp to Southbound (SB) SR 202L
 - SB SR 202 Ramp to WB SR 30
- Construct a west half-diamond interchange at 67th Avenue
- Construct an East-South bridge over the future 67th Avenue EB on-ramp to SR30
- Construct three SR 30 general purpose lanes in each direction to 71st Avenue
- Construct new Americans with Disabilities Act features where applicable at 67th Avenue
- Widen SR 202L mainline to accommodate the ramp connections to and from SR 30
- Frontage Road bridges would include:
 - NB Frontage Road connection ramp over Baseline Road
 - NB Frontage Road over Southern Avenue
 - NB Frontage Road over Salt River

- An interim 8-foot-wide asphaltic concrete inside shoulder would also be included. The interim median will be a varying width open-graded median with cable barriers.

Features Common to Both Segments

General Project wide items for both segments include:

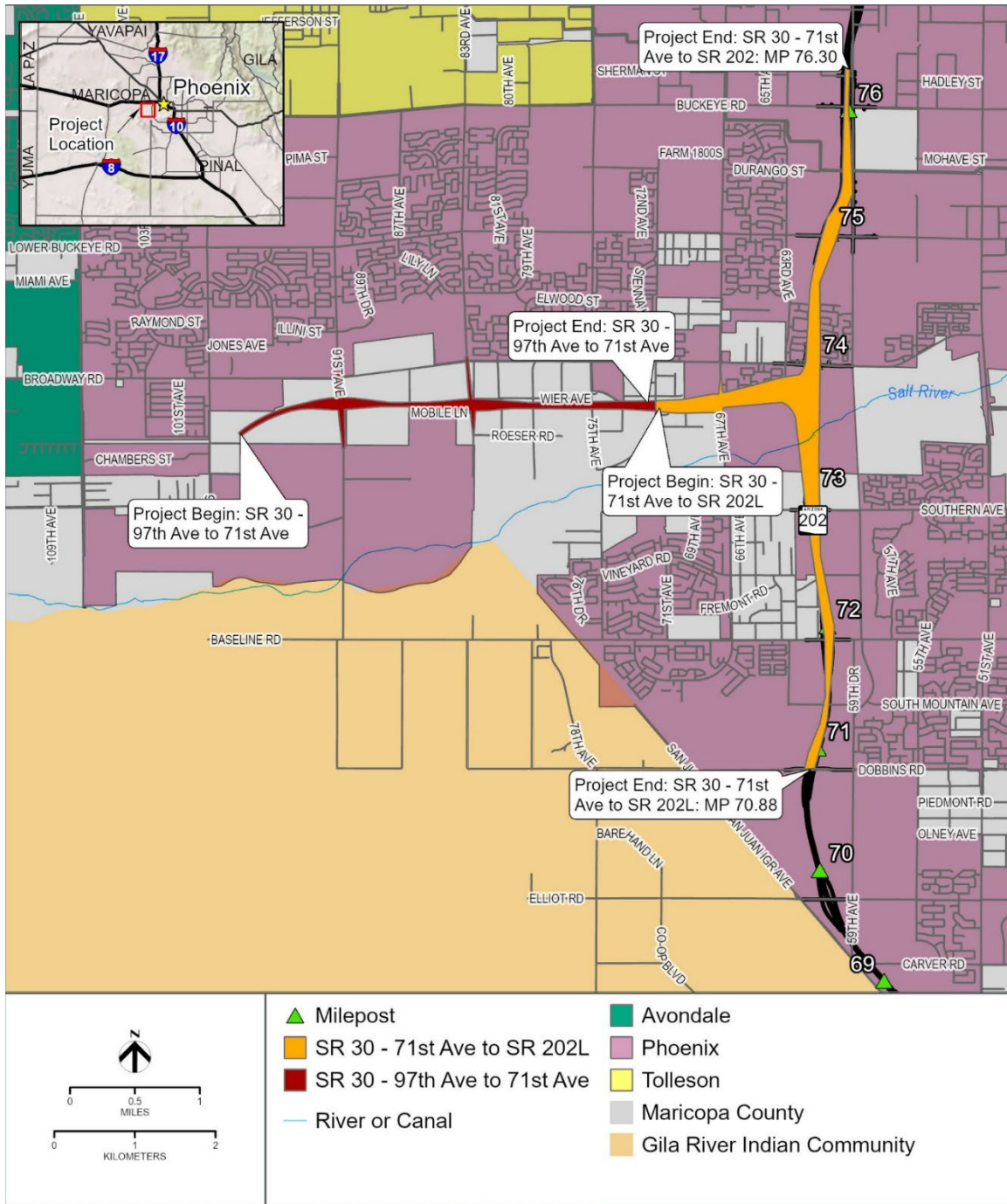
- Noise walls where warranted
- Installing FMS signage, signalization, lighting, other signing, and pavement marking
- Construction Maintenance of Traffic (MOT)
- Utility relocations within existing ADOT right of way and in arterial street crossings

New ROW, easements, and temporary construction easements (TCEs) would be required. Access to residences and businesses would be maintained throughout construction. The staging/stockpiling area would be designated within the project limits within previously disturbed areas. The construction start date is dependent on funding for construction. The construction duration is anticipated to be approximately 30 months. Once funding for construction is secured, additional schedule information will be developed and distributed during final design.

SR 30 – Sarival to 97th Ave

Construction of this segment of SR 30 is planned to occur after the completion of the southward extension of Loop 303 from Van Buren Street to MC 85, which is expected to begin in early 2026. Although final design is not complete, assumptions from the Maricopa Association of Government (MAG) regional travel demand model used for the October 2025 conformity analysis were used to provide volume and level of service (LOS) data for this conformity evaluation.

Figure 2. Corridor Segments that have Completed Design and Environmental Analysis



2.0 AFFECTED ENVIRONMENT

2.1 REGIONAL CLIMATE

The project is located in western Maricopa County south of the I-10 corridor in the south-central portion of the state. The Phoenix metropolitan area is located in the Salt River Valley, which is surrounded by low mountain ranges that influence local meteorological conditions. The region has an arid to semiarid climate, and long periods of time often occur with little or no precipitation. Based on NOAA climate normals for the 1991-2020 period, average annual precipitation in the Phoenix area is 7 inches. The air is generally dry and clear, with low relative humidity and a high percentage of sunshine. Phoenix has a hot desert climate with long, extremely hot summers and short, mild to warm winters. Temperatures of 90 degrees Fahrenheit occur frequently, and it is common to see temperatures over 100 degrees Fahrenheit (WRCC).

2.2 NATIONAL AMBIENT AIR QUALITY STANDARDS

As required by the Clean Air Act (CAA), NAAQS have been established for six major air pollutants: carbon monoxide, nitrogen dioxide, ozone, particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide, and lead. These standards are summarized in Table 1. “Primary” standards have been established to protect the public health; “secondary” standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.

Brief descriptions of those criteria pollutants relevant to transportation projects (ozone, carbon monoxide, and particulate matter) are provided in the following sections.

Table 1. National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide		primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3-month average	0.15 $\mu\text{g}/\text{m}^3$ ⁽¹⁾	Not to be exceeded
Nitrogen Dioxide (NO ₂)		primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		primary and secondary	Annual	53 ppb ⁽²⁾	Annual Mean
Ozone (O ₃)		primary and secondary	8-hour	0.070 ppm ⁽³⁾	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution	PM _{2.5}	primary	Annual	9.0 $\mu\text{g}/\text{m}^3$	Annual mean, averaged over 3 years
		secondary	Annual	15.0 $\mu\text{g}/\text{m}^3$	Annual mean, averaged over 3 years
		primary and secondary	24-hour	35 $\mu\text{g}/\text{m}^3$	98th percentile, averaged over 3 years
	PM ₁₀	primary and secondary	24-hour	150 $\mu\text{g}/\text{m}^3$	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO ₂)		primary	1-hour	75 ppb ⁽⁴⁾	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: EPA, <https://www.epa.gov/criteria-air-pollutants/naaqs-table>

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 $\mu\text{g}/\text{m}^3$ as a calendar quarter average) also remain in effect.

(2) The level of the annual NO₂ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O₃ standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) O₃ standards.

(4) The previous SO₂ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: 1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and 2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO₂ standards or is not meeting the requirements of a SIP call under the previous SO₂ standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

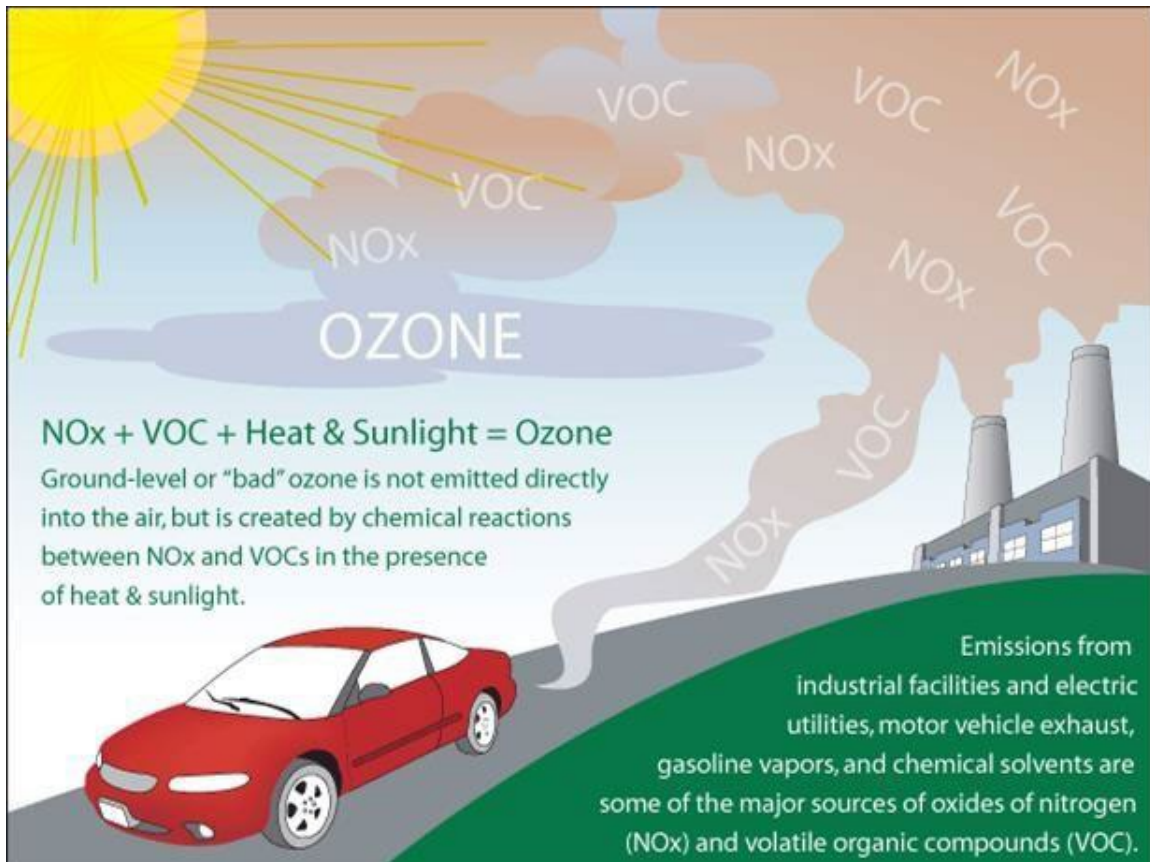
(5) The 2024 rulemaking added a new annual secondary NAAQS in 40 CFR Part 50 without altering the 1971 secondary 3-hour SO₂ NAAQS. Note that some areas may have certain continuing implementation obligations.

2.2.1 Ozone

Ozone (O_3) is a colorless toxic gas. As shown in Figure 3, O_3 is found in both the Earth's upper and lower atmospheric levels. In the upper atmosphere, O_3 is a naturally occurring gas that helps to prevent the sun's harmful ultraviolet rays from reaching the Earth. In the lower layer of the atmosphere, O_3 is human made. Although O_3 is not directly emitted, it forms in the lower atmosphere through a chemical reaction between hydrocarbons (HC), also referred to as Volatile Organic Compounds (VOC), and nitrogen oxides (NO_x) emitted from industrial sources and from automobiles. HC are compounds comprised primarily of atoms of hydrogen and carbon.

Substantial O_3 formations generally require a stable atmosphere with strong sunlight; thus, high levels of O_3 are generally a concern in the summer. O_3 is the main ingredient of smog. O_3 enters the bloodstream through the respiratory system and interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen. O_3 also damages vegetation by inhibiting its growth. The effects of changes in VOC and NO_x emissions for the proposed project are examined on a regional and statewide level.

Figure 3. Ozone in the Atmosphere



Source: EPA: <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics#wwh>

2.2.2 Carbon Monoxide

Carbon monoxide (CO) is a colorless gas that interferes with the transfer of oxygen to the brain. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. According to the 2014 National Emissions Inventory Report (EPA 2018), mobile sources (on-road motor vehicle exhaust) are the primary source of CO in both Gila County and in the U.S. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Prolonged exposure to high levels of CO can cause headaches, drowsiness, loss of equilibrium, or heart disease. CO levels are generally highest in the colder months of the year when inversion conditions (where warmer air traps colder air near the ground) are more frequent.

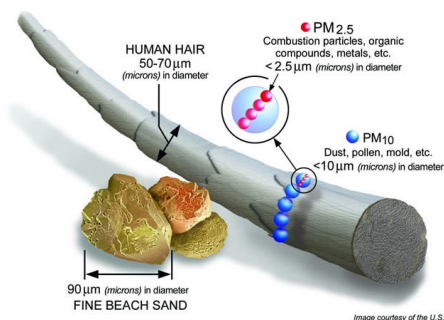
CO concentrations can vary greatly over relatively short distances. Relatively high concentrations of CO are typically found near congested intersections, along heavily used roadways carrying slow-moving traffic, and in areas where atmospheric dispersion is inhibited by urban “street canyon” conditions. Consequently, CO concentrations must be predicted on a microscale basis.

2.2.3 Particulate Matter

Particulate pollution is composed of solid particles or liquid droplets that are small enough to remain suspended in the air. In general, particulate pollution can include dust, soot, and smoke; these can be irritating but usually are not poisonous. Particulate pollution also can include bits of solid or liquid substances that can be highly toxic. Of particular concern are those particles that are smaller than, or equal to, 10 microns (PM₁₀) or 2.5 microns (PM_{2.5}) in size.

PM₁₀ refers to particulate matter less than 10 microns in diameter, about one-seventh the thickness of a human hair (Figure 4). Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals.

Figure 4. Relative Particulate Matter Size



Source: <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM>

Particulate matter also forms when gases emitted from motor vehicles undergo chemical reactions in the atmosphere.

Major sources of PM₁₀ include motor vehicles; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Suspended particulates produce haze and reduce visibility.

Data collected through numerous nationwide studies indicate that most of the PM₁₀ comes from the following:

- Fugitive dust
- Wind erosion
- Agricultural and forestry sources

A small portion of particulate matter is the product of fuel combustion processes. In the case of PM_{2.5}, the combustion of fossil fuels accounts for a large portion of this pollutant. The main health effect of airborne particulate matter is on the respiratory system. PM_{2.5} refers to particulates that are 2.5 microns or less in diameter, roughly 1/28th the diameter of a human hair. PM_{2.5} results from fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, PM_{2.5} can be formed in the atmosphere from gases such as sulfur dioxide, nitrogen oxides, and volatile organic compounds. Like PM₁₀, PM_{2.5} can penetrate the human respiratory system's natural defenses and damage the respiratory tract when inhaled. Whereas particles 2.5 to 10 microns in diameter tend to collect in the upper portion of the respiratory system, particles 2.5 microns or less are so tiny that they can penetrate deeper into the lungs and damage lung tissues. The effects of PM₁₀ and PM_{2.5} emissions from the project are examined on a localized, or microscale, basis and a regional basis.

2.3 MOBILE SOURCE AIR TOXICS

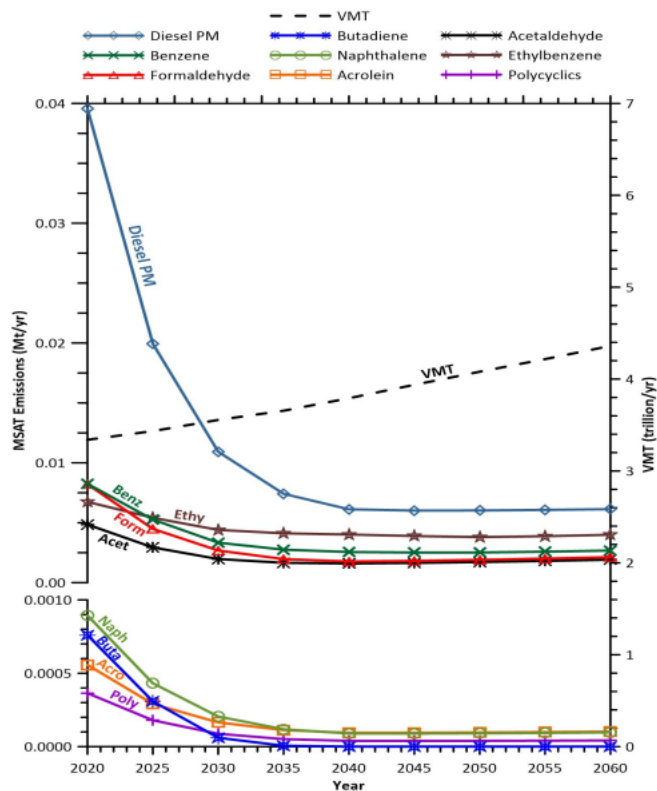
In addition to the criteria pollutants for which there are NAAQS, the EPA also regulates air toxics. Toxic air pollutants are those pollutants known or suspected to cause cancer or other serious health effects. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

Controlling air toxic emissions became a national priority with the passage of the CAA Amendments of 1990, whereby Congress mandated that EPA regulate 188 air toxics, also known as hazardous air pollutants. EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (<http://www.epa.gov/iris>). In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the

national- and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2011 National Air Toxics Assessment (NATA) (<https://www.epa.gov/national-air-toxics-assessment>). These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule mentioned above requires controls that will dramatically decrease mobile source air toxic (MSAT) emissions through cleaner fuels and cleaner engines. Using EPA's MOVES3 model, as shown in Figure 5, FHWA estimates that even if VMT increases by 31 percent from 2020 to 2060 as forecast, a combined reduction of 76 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Figure 5. National MSAT Emission Trends 2020 – 2060 For Vehicles Operating on Roadways Using EPA's MOVES3 Model



Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

Source: EPA MOVES3 model runs conducted by FHWA in March 2021:

https://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/fhwa_nepa_msat_memorandum_2023.pdf

2.4 ATTAINMENT STATUS

The Clean Air Act (CAA) authorizes the U.S. Environmental Protection Agency (EPA) to designate areas that do not meet the National Ambient Air Quality Standards (NAAQS) as nonattainment and to classify the severity of nonattainment. Areas designated as nonattainment are required to develop State Implementation Plans (SIPs) that identify control measures needed to attain and maintain the NAAQS.

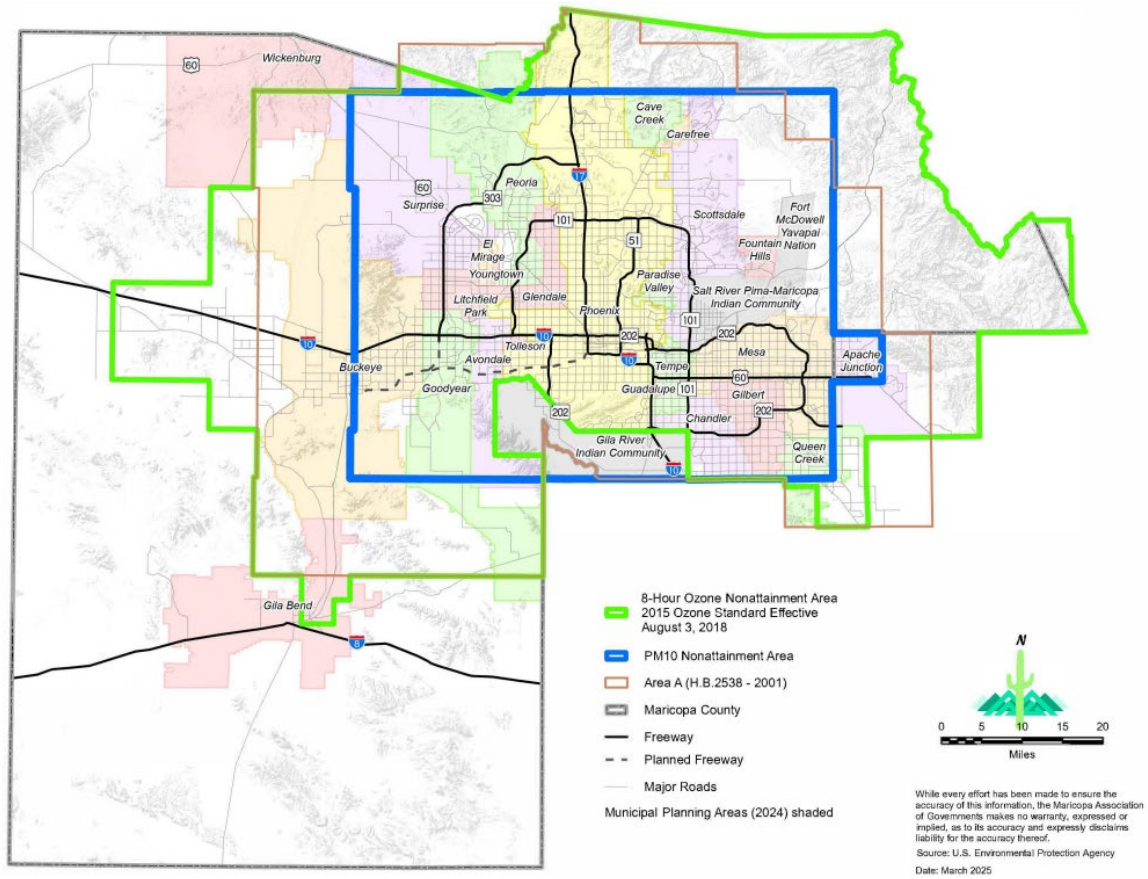
The project study area is located within the Phoenix region, which is designated by EPA as a nonattainment area for ozone and PM₁₀, as shown in Figure 6. EPA's current nonattainment listings identify the Phoenix–Mesa area as nonattainment for the 2015 8-hour ozone standard (Moderate classification) and identify the Phoenix planning area (parts of Maricopa and Pinal Counties) as a serious nonattainment area for the 1987 PM₁₀ standard.

EPA has taken multiple SIP actions for the Phoenix–Mesa ozone nonattainment area, including a final rule published June 2, 2020 approving portions of the MAG 2017 Eight-Hour Ozone Moderate Area Plan for the 2008 ozone standard (effective July 2, 2020). For PM₁₀, EPA has acted on the MAG Five Percent Plan for the Phoenix PM₁₀ nonattainment area, which covers the eastern portion of Maricopa County and includes Apache Junction in Pinal County.

The Project is included in the Maricopa Association of Governments (MAG) Regional Transportation Plan (RTP) MOMENTUM 2050 as Project ID: MAG-20-RTP-103, SR 30: SR 303L to SR 202L New Freeway. In addition, it is included in the FY 2025-2030 MAG Transportation Improvement Program (TIP).

On April 8, 2025, the Maricopa County carbon monoxide maintenance area reached the end of the 20-year maintenance period and therefore transportation conformity requirements no longer apply to carbon monoxide.

Figure 6. Air Quality Boundaries in the MAG Region



Source: Conformity Analysis For the FY 2026-2030 MAG Transportation Improvement Program and MOMENTUM 2050 Regional Transportation Plan Update (MAG 2025)

2.4.1 Ambient Pollutant Levels

In cooperation with EPA and other governmental agencies, The Maricopa County Air Quality Department operates air quality monitoring sites and a mobile air monitoring program to measure criteria pollutants. Table 2 presents the last three years of available monitor data gathered at two monitoring stations representative of the project area.

Table 2. Ambient Air Quality Monitor Data

Pollutant		Monitor Location	Monitor Value	2023	2024	2025
Carbon Monoxide (CO) [ppm]	1-Hour	3847 W Earll Dr West Phoenix, AZ Maricopa County	Maximum	3.2	4.0	5.6
			2nd Maximum	3.0	3.1	4.9
			# of Exceedances	0	0	0
	8-Hour		Maximum	2.2	2.8	4.8
			2nd Maximum	2.1	2.7	2.7
			# of Exceedances	0	0	0
Particulate Matter [ug/m³]	PM ₁₀	3847 W Earll Dr West Phoenix, AZ Maricopa County	Maximum 24-Hour	182	205	306
			Second Maximum	109	153	223
			# of Exceedances	1	1	3
	PM _{2.5}		24-Hour 98th Percentile	22	24	31
			Mean Annual	8.6	9.4	10.9
Ozone (O ₃) [ppm]	8-Hour	3847 W Earll Dr West Phoenix, AZ Maricopa County	First Highest	0.087	0.09	0.08
			Second Highest	0.083	0.086	0.076
			Third Highest	0.079	0.082	0.074
			Fourth Highest	0.077	0.082	0.072
			# of Days Standard Exceeded	19	20	5
Nitrogen Dioxide (NO ₂) [ppb]		3847 W Earll Dr West Phoenix, AZ Maricopa County	1-Hour Maximum	51	60	50
			1-Hour Second Maximum	51	56	50
			98th Percentile	47	52	49
			Annual Mean	13.99	14.43	14.43
Sulfur Dioxide (SO ₂) [ppb]		1645 E Roosevelt St- Central Phoenix Station Phoenix, AZ Maricopa County	1-Hour Maximum	10	50	4
			1-Hour 99 th Percentile	5	4	3
			24-Hour Maximum	1.4	2.4	1.2
			# of Days Standard Exceeded	0	0	0

Source: EPA AirData, <https://www.epa.gov/outdoor-air-quality-data> accessed March 11, 2026

3.0 ENVIRONMENTAL CONSEQUENCES

Project-level air quality analyses for proposed roadways typically focus on vehicle emissions of CO, PM₁₀, and MSATs. Although vehicle emissions include other pollutants, the concentrations of CO, PM₁₀, and MSATs are the most easily assessed and provide a convenient measure of the local air quality impacts from a proposed roadway. Other pollutants, such as O₃, nitrogen oxides, and hydrocarbons, are regional in nature, making a project-level evaluation not applicable. Project-level analyses can be completed using qualitative or quantitative methods, depending on the scale of the project, the level of design information available for the analysis, and the overall purpose of the analysis.

This section describes the methods, impact criteria, and results of air quality analyses of the proposed project. The analyses use guidelines and procedures provided in applicable air quality analysis protocols from EPA and FHWA. The Project Level PM Quantitative Hot-Spot Analysis – Project of Air Quality Concern Questionnaire and interagency consultation determined that this project was a project of air quality concern and required a PM₁₀ quantitative analysis.

3.1 CARBON MONOXIDE

On April 8, 2025, the Maricopa County CO maintenance area reached the end of the 20-year maintenance period and therefore transportation conformity requirements no longer apply to carbon monoxide. A project-level CO analysis was performed as part of the 2019 SR 30, Sarival Avenue to SR 202L Air Quality Report (2019 Air Quality Report) (ADOT 2019). The analysis demonstrated that predicted worst-case one-hour and 8-hour CO concentrations were not expected to cause or contribute to an exceedance of the NAAQS.

3.2 PM₁₀ QUANTITATIVE ANALYSIS

The Project is a new and expanded highway project that has a significant number of diesel vehicles (medium and heavy-duty trucks). The annual average daily traffic (AADT) and truck volume for the 2050 Build scenario were compared to the 2050 No-Build scenario on highway segments along the project corridor as shown in Table 1, based on the MAG regional travel demand model. The volumes represent projected growth in 2050 passenger vehicle and truck traffic due to planned projects and land use changes in the region.

SR 30 would be a new roadway, and all 2050 traffic volumes on SR 30 would be considered an increase from the No-Build condition. As shown in Table 3, the increased total volume of diesel traffic (represented by medium and heavy trucks) ranges from 13,899 to 36,050 AADT. Highway segments will have 125,000 AADT or more, including truck volume percentages greater than 8% of 125,000 AADT (10,000 trucks per day). Therefore, this would qualify as a significant number of diesel vehicles.

Table 3. Mainline Traffic for SR 30 and SR 202L

Mainline Segments		2050 No-Build		2050 Build		Difference (Build – No Build)	
		Total AADT	Truck AADT	Total AADT	Truck AADT	Total AADT	Truck AADT
Sarival Ave to 97th Ave Segment							
1	SR 30 West of Sarival	0	0	95,578	20,380	95,578	20,380
2	SR 30 Sarival between Sarival and Estrella	0	0	118,376	24,181	118,376	24,181
3	SR 30 between Estrella Ramps	0	0	108,791	23,618	108,791	23,618
4	SR 30 between Estrella and Bullard	0	0	131,837	26,094	131,837	26,094
5	SR 30 between Bullard Ramps	0	0	125,547	25,642	125,547	25,642
6	SR 30 between Bullard and Dysart	0	0	140,584	28,436	140,584	28,436
7	SR 30 between Dysart Ramps	0	0	134,948	27,995	134,948	27,995
8	SR 30 between Dysart and Avondale	0	0	139,643	28,802	139,643	28,802
9	SR 30 between Avondale Ramps	0	0	137,273	28,634	137,273	28,634
10	SR 30 between Avondale and 107th	0	0	154,116	30,640	154,116	30,640
11	SR 30 between 107th Ramps	0	0	149,441	30,426	149,441	30,426
97th Ave to 71st Ave Segment							
12	SR 30 between 107th and 91st	0	0	162,186	31,466	162,186	31,466
13	SR 30 between 91st Ramps	0	0	157,979	31,117	157,979	31,117
14	SR30 between 91st and 83rd	0	0	179,702	33,616	179,702	33,616
15	SR 30 between 83rd Ramps	0	0	173,996	33,212	173,996	33,212
16	SR 30 between 83rd and 67th	0	0	186,884	36,050	186,884	36,050
17	SR 30 between 67th Ramps	0	0	173,336	34,954	173,336	34,954
71st Ave to SR 202L Segment							
18	SR 30 between 67th and TI ramps	0	0	159,469	32,158	59,469	32,158
19	SR 30 between TI ramps	0	0	131,051	24,549	131,051	24,549
20	SR 202 between Dobbins ramps	121,518	26,498	131,112	31,749	9,594	5,251
21	SR 202 between Dobbins and Baseline	141,659	27,910	153,235	33,818	11,576	5,909
22	SR 202 between Baseline ramps	130,375	27,015	146,258	33,375	15,883	6,360
23	SR 202 and FR between Baseline and Southern	147,816	27,838	158,603	34,503	10,787	6,665
24	SR 202 between Southern ramps	146,156	27,526	77,576	14,347	(68,580)	(13,179)

Mainline Segments		2050 No-Build		2050 Build		Difference (Build – No Build)	
		Total AADT	Truck AADT	Total AADT	Truck AADT	Total AADT	Truck AADT
25	SR 202 between Southern on ramp and Broadway off ramp	168,999	28,881	103,694	15,564	(65,305)	(13,317)
26	SR 202 between Broadway off ramp and Broadway on ramp	147,760	25,616	86,633	13,899	(61,126)	(11,717)
27	SR 202 and FR between Broadway and Lower Buckeye	153,735	26,547	101,688	15,867	(52,047)	(10,679)
28	SR 202 between Lower Buckeye ramps	146,205	25,776	99,085	16,169	(47,120)	(9,606)
29	SR 202 between Lower Buckeye and Buckeye	165,003	26,109	107,743	16,644	(57,260)	(9,465)
30	SR 202 between Buckeye ramps	141,829	20,356	140,062	19,806	(1,767)	(550)

Note: AADT – Annual Average Daily Traffic.

Source: WSP, 2025 and Stanley Consultants, 2025.

Corridor improvements would create seventeen (17) new signalized intersections at SR 30 interchanges, and nine (9) existing intersections would be impacted. As shown in Table 4, two existing intersections at Lower Buckeye Rd and SR 202L SB and Southern Ave and SR 202L SB would operate at LOS D in the AM Peak in the No Build condition. In the Build Condition, both of those intersections would remain at LOS D in the AM Peak, and the intersection at Southern Ave would additionally worsen to LOS D in the PM Peak. Two other intersections, Lower Buckeye Rd and SR 202L NB and Broadway Road and SR 202L NB, would operate at LOS D in the AM Peak and PM Peak respectively. The remaining intersections would operate at LOS C or better in the 2050 Build condition.

Table 4. Intersection LOS for SR 30 and SR 202L

Level of Service (LOS)		2050 No-Build		2050 Build	
		AM Peak	PM Peak	AM Peak	PM Peak
		LOS (Delay)	LOS (Delay)	LOS (Delay)	LOS (Delay)
Sarival Ave to 97th Ave Segment					
1	Sarival at WB Ramp	-	-	C (33.2)	C (33.5)
2	Sarival at EB Ramp	-	-	C (26.1)	C (33.6)
3	Estrella at WB Ramps	-	-	C (21.5)	C (25.1)
4	Estrella at EB Ramps	-	-	C (22.3)	B (19.2)
5	Bullard at WB Ramps	-	-	C (32.6)	C (28.6)
6	Bullard at EB Ramps	-	-	C (26.8)	C (22.5)
7	Dysart at WB Ramps	-	-	C (26.2)	C (27.7)
8	Dysart at EB Ramps	-	-	C (21.9)	B (17.4)

9	Avondale at WB Ramps	-	-	B (19.5)	C (21.5)
10	Avondale at EB Ramps	-	-	B (18.8)	C (20.4)
11	107th at WB Ramps	-	-	C (20.7)	C (24.6)
12	107th at EB Ramps	-	-	C (23.8)	C (20.0)
97th Ave to 71st Ave Segment					
13	Broadway Rd & 91st Ave	F (599.5)	F (342.5)	C (33.6)	C (32.7)
14	Broadway Rd & 83rd Ave*	N/A	N/A	B (19.7)	B (30.8)
15	SR 30 WB Ramp & 91st Ave	-	-	B (19.9)	C (28.2)
16	SR 30 EB Ramp & 91st Ave	-	-	C (20.6)	C (22.2)
17	SR 30 WB Ramp & 83rd Ave	-	-	B (14.5)	B (20.6)
18	SR 30 EB Ramp & 83rd Ave	-	-	B (16.0)	B (21.6)
71st Ave to SR 202L Segment					
19	EB SR 30 Ramps & 67th Street	-	-	C (30.8)	B (15.1)
20	WB SR 30 Ramps & 67th Street	-	-	B (12.1)	C (27.1)
21	SR 202L NB Ramps & W Lower Buckeye Rd	C (25.4)	C (31.0)	C (32.4)	C (33.2)
22	SR 202L SB Ramps & W Lower Buckeye Rd	D (35.7)	C (21.6)	D (37.6)	C (25.5)
23	SR 202L NB Ramps & W Broadway Rd	C (21.9)	C (22.2)	C (27.8)	D (35.4)
24	SR 202L SB Ramps & W Broadway Rd	B (18.8)	B (12.9)	C (27.9)	C (33.9)
25	SR 202L NB Ramps & W Southern Ave	C (21.7)	C (22.1)	D (49.9)	C (33.4)
26	SR 202L SB Ramps & W Southern Ave	D (39.0)	C (34.4)	D (37.3)	C (31.3)
27	SR 202L NB Ramps & W Baseline Rd	B (15.1)	B (16.8)	B (19.2)	C (27.0)
28	SR 202L SB Ramps & W Baseline Rd	C (25.3)	C (24.6)	C (26.9)	C (27.0)

Note: * indicates intersection LOS unavailable for Two-Way Stop Control

Source: Synchro modeling

Table 5. Intersection Traffic for SR 30 and SR 202L

Intersections		2050 No-Build		2050 Build		Difference (Build - No-Build)	
		Total AADT	Truck AADT	Total AADT	Truck AADT	Total AADT	Truck AADT
Sarival Ave to 97th Ave Segment							
1	Sarival at WB Ramp	0	0	24,393	3,841	24,393	3,841
2	Sarival at EB Ramp	0	0	12,744	1,856	12,744	1,856
3	Estrella at WB Ramps	0	0	42,872	2,905	42,872	2,905
4	Estrella at EB Ramps	0	0	48,351	3,465	48,351	3,465
5	Bullard at WB Ramps	0	0	21,183	3,058	21,183	3,058
6	Bullard at EB Ramps	0	0	23,892	2,914	23,892	2,914
7	Dysart at WB Ramps	0	0	9,424	1,089	9,424	1,089
8	Dysart at EB Ramps	0	0	8,188	858	8,188	858
9	Avondale at WB Ramps	0	0	23,467	2,079	23,467	2,079
10	Avondale at EB Ramps	0	0	17,755	1,312	17,755	1,312
11	107th at WB Ramps	0	0	16,918	991	16,918	991
12	107th at EB Ramps	0	0	16,514	1,042	16,514	1,042
97th Ave to 71st Ave Segment							
13	91st Ave & Broadway Rd	36,712	3,379	34,583	2,854	-2,130	-525
14	91st Ave & WB Ramp	0	0	26,003	2,744	26,003	2,744
15	91st Ave & EB Ramp	0	0	17,163	1,658	17,163	1,658
16	83rd Ave & Broadway Rd	24,524	2,566	29,731	3,557	5,207	991
17	83rd Ave & WB Ramp	0	0	18,498	3,244	18,498	3,244
18	83rd Ave & EB Ramp	0	0	9,999	1,674	9,999	1,674
71st Ave to SR 202L Segment							
19	EB SR 30 Ramps & 67th Street	13,504	439	27,643	1,672	14,139	1,233
20	WB SR 30 Ramps & 67th Street	13,504	439	24,576	1,656	11,072	1,217
21	SR 202L NB Ramps & W Lower Buckeye Rd	37,475	2,486	28,045	1,561	-9,431	-925

22	SR 202L SB Ramps & W Lower Buckeye Rd	45,374	2,910	30,729	1,630	-14,645	-1,281
23	SR 202L NB Ramps & W Broadway Rd	24,260	2,633	15,316	1,338	-8,943	-1,294
24	SR 202L SB Ramps & W Broadway Rd	31,158	3,631	20,637	1,595	-10,520	-2,036
25	SR 202L NB Ramps & W Southern Ave	27,742	1,539	28,132	1,308	390	-231
26	SR 202L SB Ramps & W Southern Ave	26,459	1,327	23,351	1,141	-3,108	-186
27	SR 202L NB Ramps & W Baseline Rd	38,203	1,531	32,885	1,199	-5,317	-332
28	SR 202L SB Ramps & W Baseline Rd	34,682	1,398	28,763	871	-5,919	-526

Note: AADT – Annual Average Daily Traffic.

Source: WSP, 2025 and Stanley Consultants, 2025.

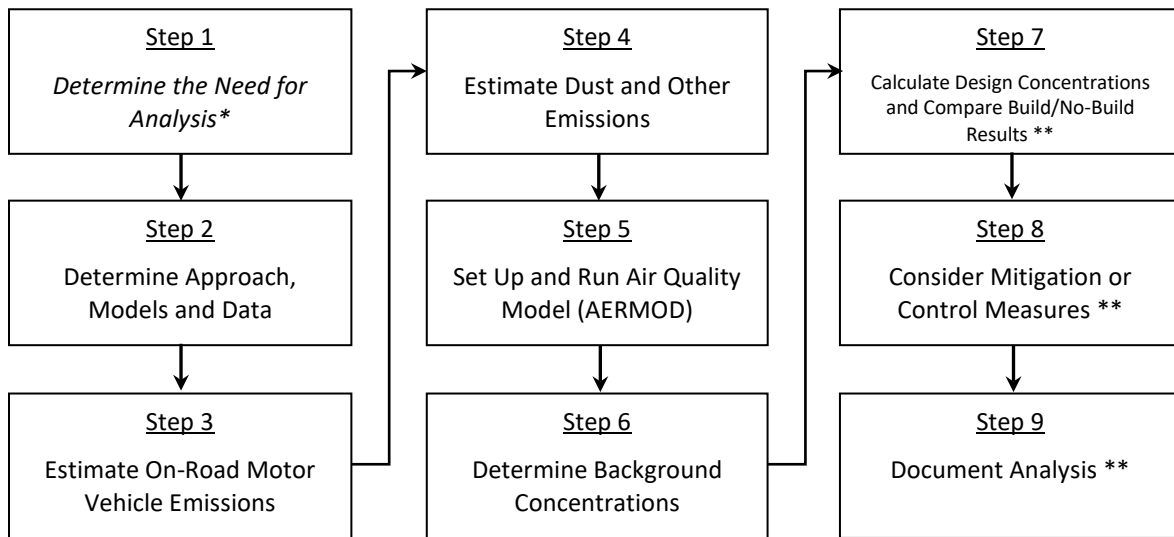
3.3 PM₁₀ HOT-SPOT ANALYSIS

The project study area is located in Maricopa County, Arizona, which is currently classified as a nonattainment area for the PM₁₀ 24-hour standard. The Project was presented to the MAG consultation partners, which classified the project as one of air quality concern. As such, a microscale 24-hour PM₁₀ hot-spot analysis was conducted.

3.3.1 Methodology

The nine-step process described in EPA's *Transportation Conformity Guidance for Quantitative Hot-Spot Analysis in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas* (EPA 2021) is used for hot-spot PM₁₀ analysis, see Figure 7. Each step is described below.

Figure 7. EPA's Nine-step Process for PM Analysis



Determine the Need for Analysis

Based on the ADOT PM₁₀ interagency consultation process, this project is classified as the project of air quality concern for PM₁₀ because it is a new highway project that has a significant number of diesel vehicles as specified in 40 CFR 93.123(b)(i). Therefore, project level hot-spot PM₁₀ analysis is warranted.

Determine Approach, Models and Data

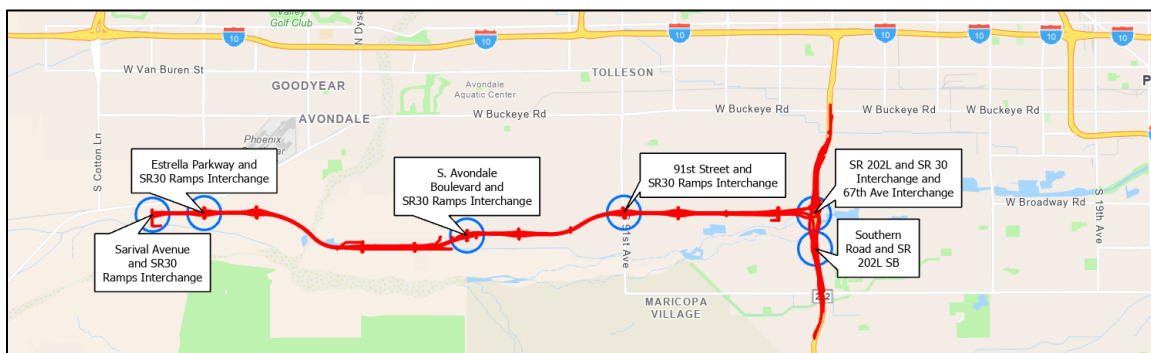
The PM₁₀ analysis methodology was presented to the interagency consultation partners through multiple consultations throughout a period ending on August 31, 2026. Based on the EPA guidance, and in consultation with FHWA, EPA and other agencies, three locations were chosen for the purpose of demonstrating project conformity because these locations have the greatest potential concentrations of PM₁₀ due to congestion and traffic volumes in 2050. As shown in Figure 8, The locations are as follows:

- **SR 202L and SR 30 traffic interchange and the 67th Ave TI.** This 1.2-mile segment includes traffic from both highways, and the current design has a number of changes since it was previously analyzed in the 2019 Air Quality Report.
- **Southern Road and SR 202L Ramps.** This segment includes the worst LOS in the 2050 Build Alternative for the Project at Southern Road and Northbound SR 202L.
- **91st Ave and SR 30 Ramps.** This segment is located near a dairy that contributes PM₁₀ emissions in the project vicinity that is not captured by the background monitor.

- **Avondale Blvd and SR30 Ramps.** This segment has the highest projected increase in total vehicle volume for the segments included in the Sarival to 97th funding piece.
- **Estrella Blvd and SR30 Ramps.** This segment has the highest projected increase in total vehicle volume.
- **Sarival Ave and SR 30 Ramps.** This segment has the highest projected increase in truck volumes and is closest to the interchange at SR303.

All model inputs and assumptions are included in Appendix A – Consultation Document for Project of Air Quality Concern.

Figure 8. Hot-Spot Modeling Locations



Estimate On-Road Vehicle Emissions

On-road vehicle emissions were estimated using MOVES4.0.2. Age distribution and vehicle mix were provided by MAG and, therefore, were consistent with the regional conformity analysis. Default fuel specifications were used per EPA. Climate data were based on AERMET data provided by ADEQ. MOVES input relies on link-specific data. Traffic data included link volume, speed, and average grade. A unique vehicle mix was calculated for each roadway segment based on the volumes of four vehicle type categories provided in the traffic data. Within each of the four vehicle type categories, the volumes were allocated to the associated MOVES source types using the regional distribution of vehicle population from MAG regional conformity modeling, as described in more detail in Appendix A.

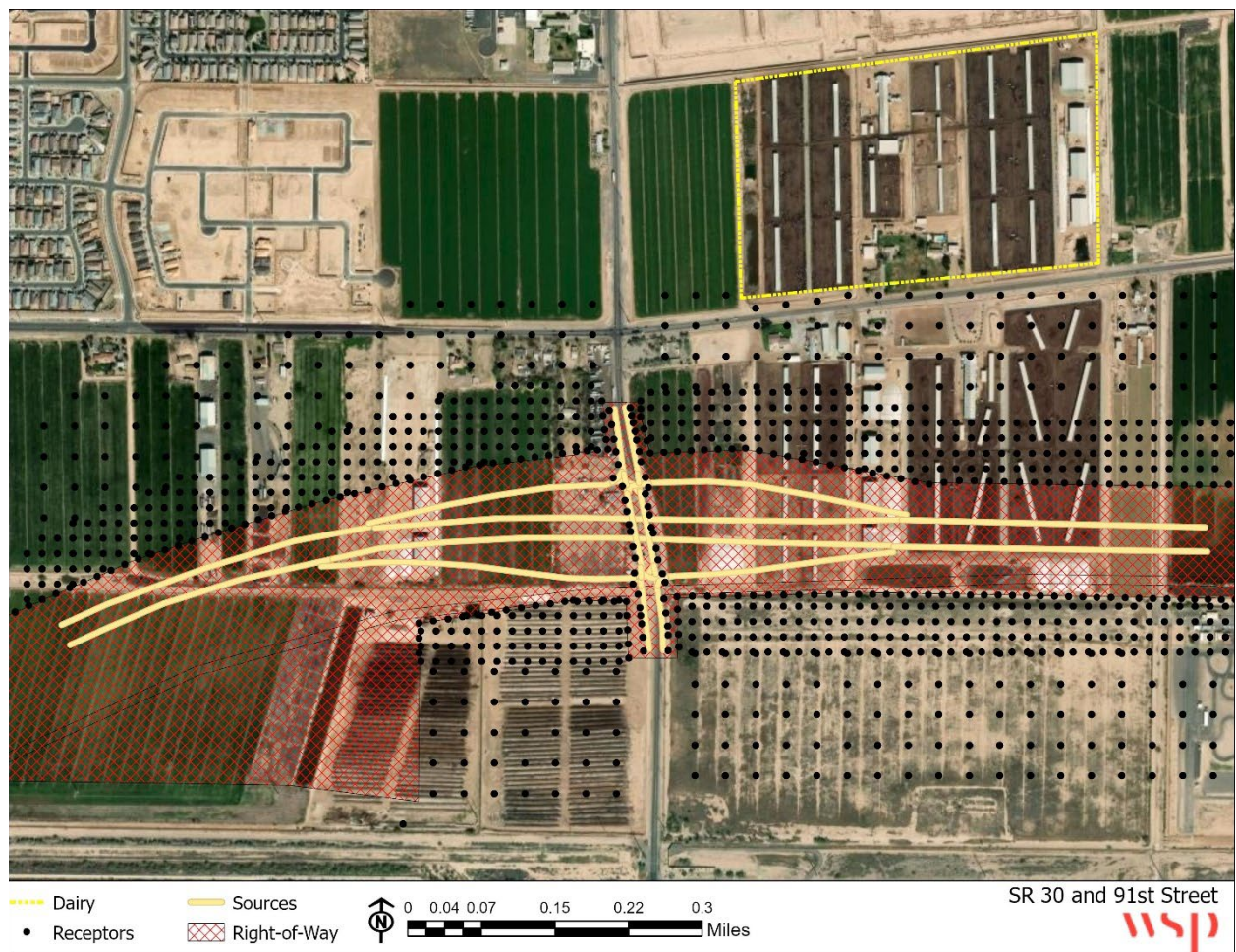
PM₁₀ emission factors were developed for an analysis year of 2050, which represents the year peak emissions from the project are expected. Vehicle emissions of PM₁₀ are a combination of vehicle exhaust, brakewear, tirewear, and road dust. Road dust is the largest contributor to the overall emissions. Because road dust is highly dependent on vehicle volumes, the analysis year of 2050 was selected as the year of peak emissions because it was the year with the greatest vehicle volumes.

The PM₁₀ emissions vary by time of day and by month. Volume and speed data for each link was obtained from the MAG travel demand model for A.M. peak, midday, P.M. peak, and overnight traffic conditions. A preliminary model run was conducted to

determine the month of highest emissions rates, based on the seasonal fuel specifications, and the highest emissions occurred in July. For each analysis site, MOVES was run for each of the four time periods (A.M. peak, midday, P.M. peak, and overnight) for July conditions for a total of 4 MOVES runs per location. For every link, a set of 4 emission factors in units of grams per hour was developed for the project's analysis year of 2050.

The PM₁₀ modeled links and receptors for modeling location are shown in the following figures. Figure 9 through Figure 14 show receptor locations at each of the modeled locations. Receptors were placed 5 meters from the roadway edge, extending up to 1000 feet with a spacing of 25 meters. Receptors were not placed in areas where the public does not have access, including median strips, right-of-way, and drainage pounds that lie to the south of SR 30. Receptors were placed along a shared use path and sidewalks, regardless of distance from roadways. An area source is included in Figure 9 that represents emissions from a nearby dairy as described in more detail in the following section.

Figure 9. Receptor Locations at 91st Street and SR 30 Ramps Interchange



Note: This model setup includes an area source to the northeast to represent dairy operations

Figure 10. Receptor Locations at Estrella Parkway and SR 30 Ramps Interchange

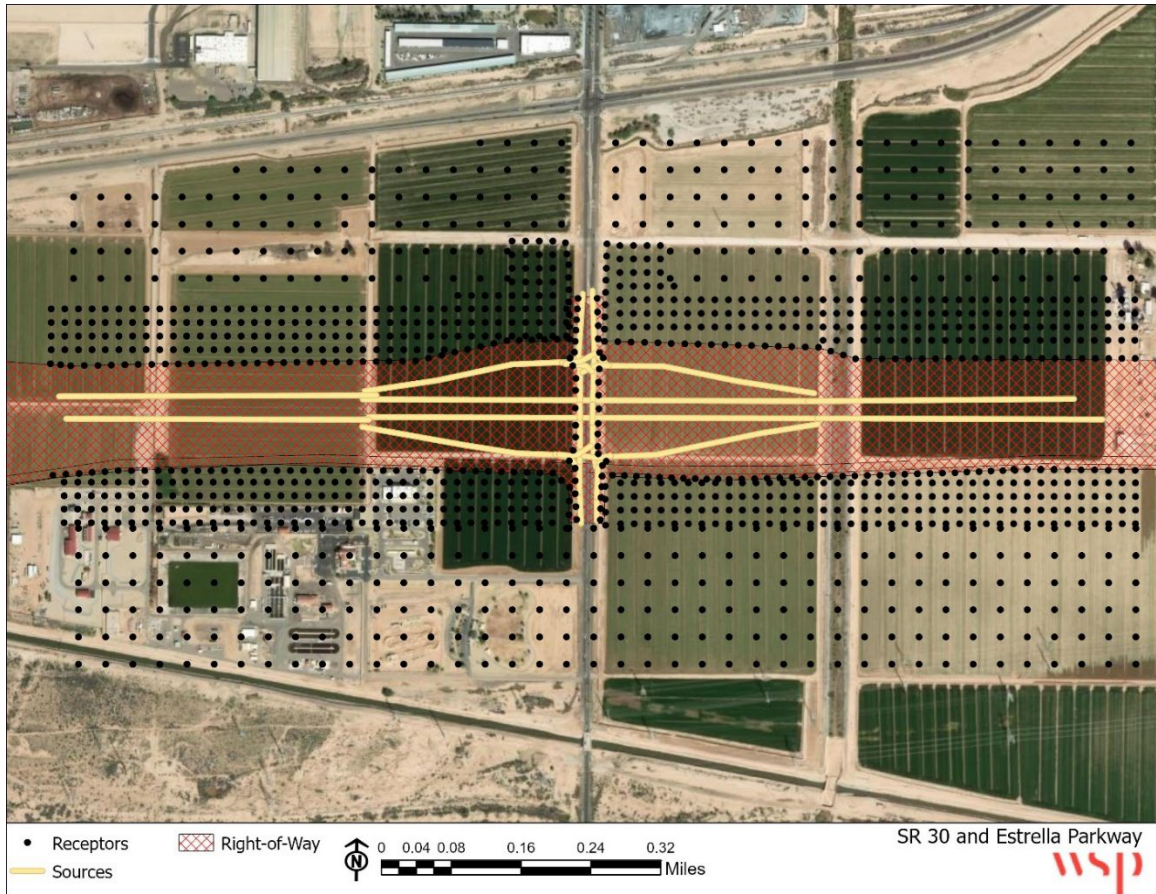


Figure 11. Receptor Locations at South Avondale Boulevard and SR 30 Ramps Interchange

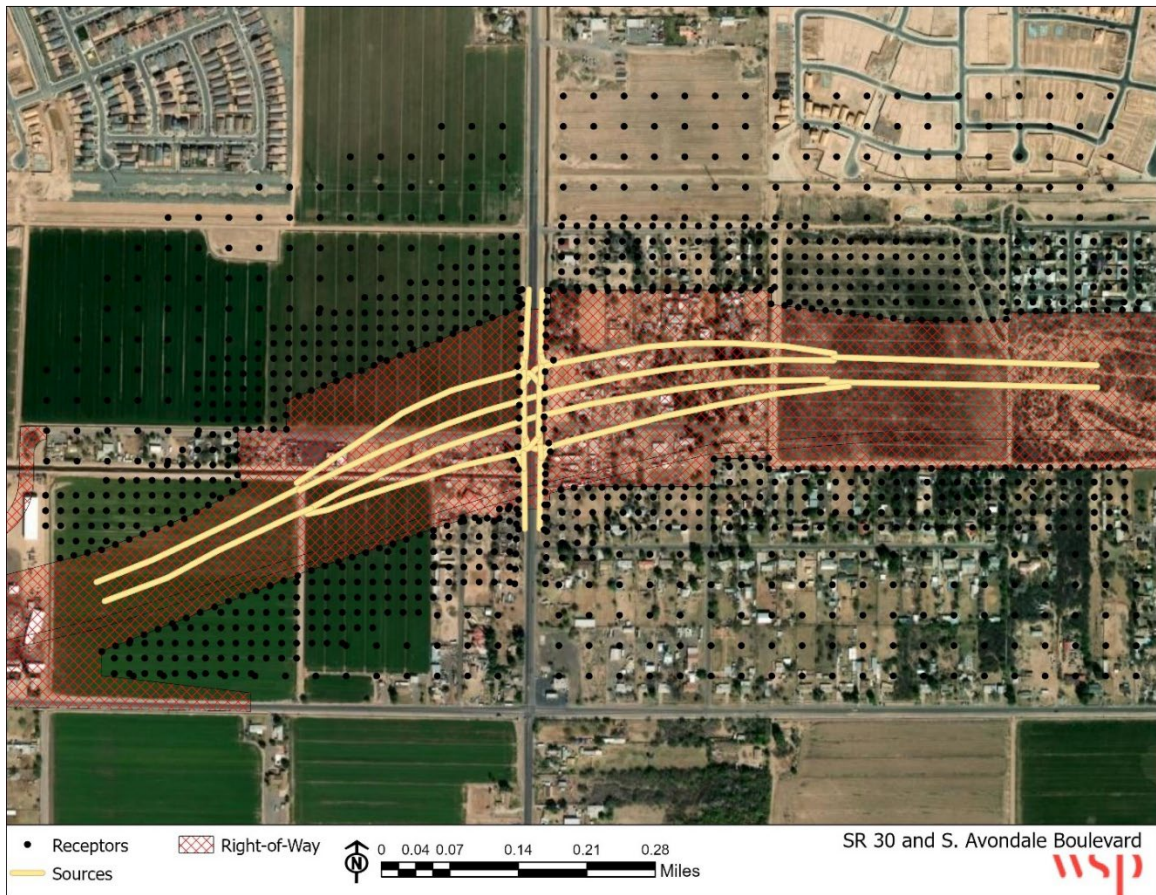


Figure 12. Receptor Locations at Sarival Avenue and SR 30 Ramps Interchange

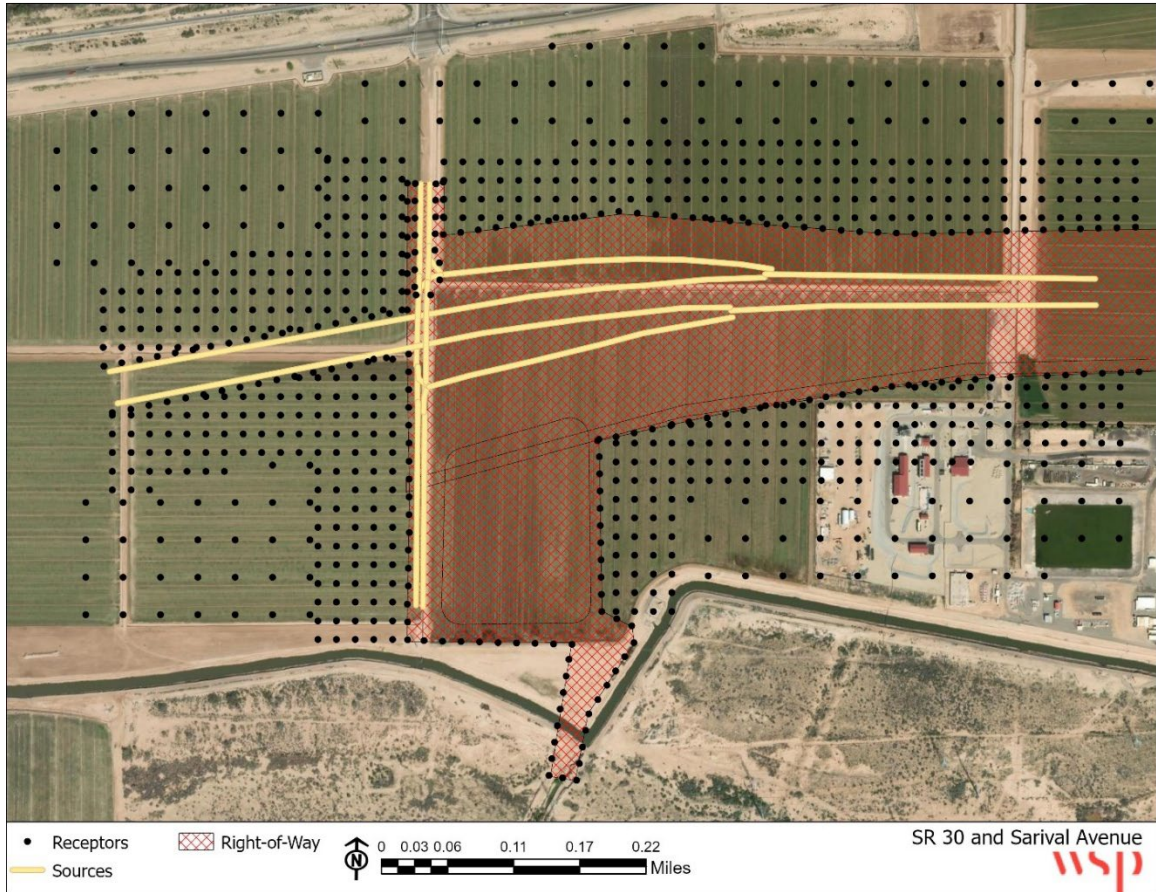


Figure 13. Receptor Locations at SR 202L and SR 30 Interchange and 67th Avenue Interchange

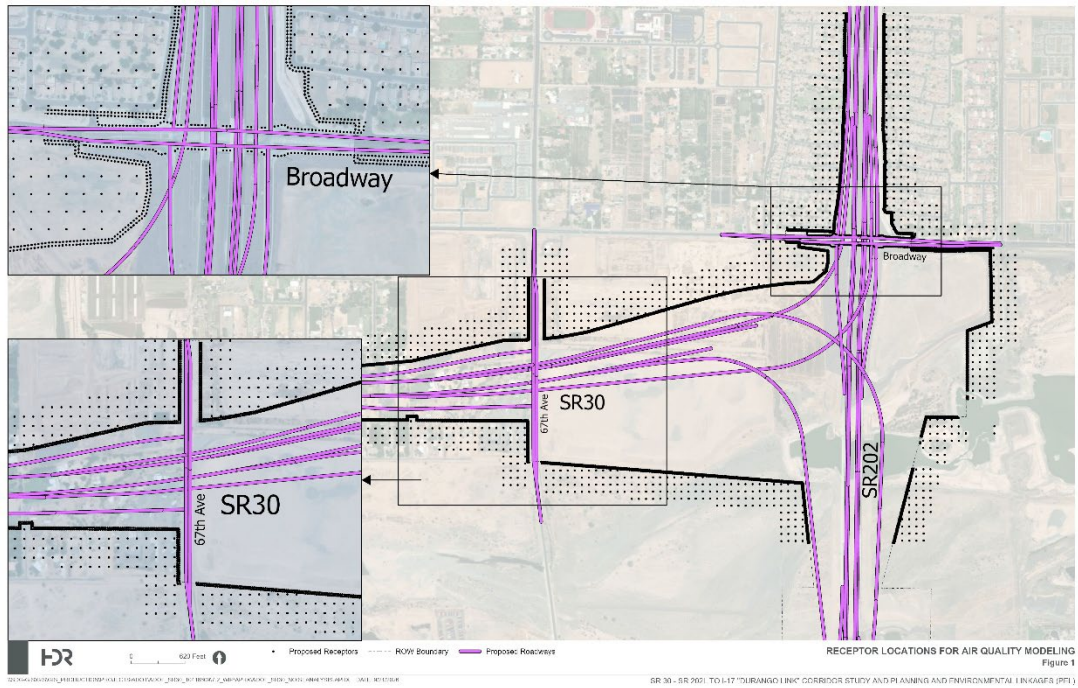
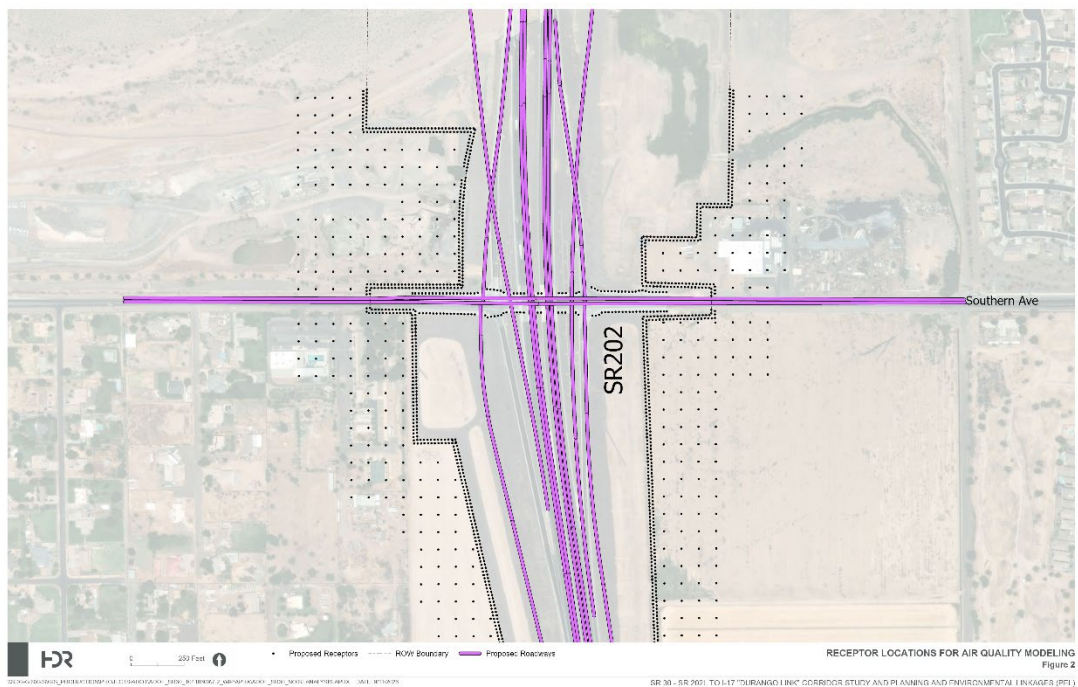


Figure 14. Receptor Locations at Southern Road and SR 202L Southbound



Estimate Emissions from Road Dust, Construction and Additional Sources

Re-entrained road dust must be included in all PM₁₀ hot-spot analyses. Section 13.2.1 of AP-42 provides a method for estimating emissions of re-entrained road dust using local values for precipitation, average vehicle weight, and silt loading.

The estimated road dust emission factors from the 2025 MAG Conformity Analysis for the analysis year 2050 were used for this PM hot-spot analysis, and the values are summarized in **Table 6**.

Table 6. MAG Road Dust Emission Factors

Facility Type	k	W (tons)	sL (g/m ²)	E (g/VMT)
Freeway	1	4.33	0.02	0.12
High Volume Arterial (>10,000 AADT)	1	2.72	0.07	0.23

Source: MAG 2025

g/m² = grams per square meter

g/VMT = grams per vehicle mile traveled

Emission factors for road dust were added to the emission factors generated for each link by MOVES for use in the AERMOD dispersion model.

Construction emissions were not included because construction will not occur at any individual location for more than five years. The project is not expected to impact emissions from any nearby sources.

As part of the interagency consultation process, nearby sources were evaluated to determine their potential to contribute PM concentrations to the project area and not likely to be reflected in background concentrations. Emissions from Goodyear Airport and fire training facility were reviewed and determined to have low potential to impact receptor concentrations. Three dairies were identified along the corridor, two of which have been closed for redevelopment. The remaining dairy located at South 91st Avenue and West Broadway Road is still in operation and assumed to remain in operation through 2050. Emissions of PM₁₀ are generated from livestock operations from fugitive dust kicked up by animal movement, feedlots, and secondary particle formation from gas precursors.

Emissions from the dairy were represented in the air quality analysis using data provided by Maricopa County, based on the dairy's maximum capacity of 3,000 cows. The location of the area source is shown in Figure 9.

Set Up and Run Air Dispersion Model (AERMOD)

EPA's AERMOD air dispersion model was used to estimate concentrations of PM₁₀ due to project operations. The model uses traffic data, emission factor data, and meteorological data to estimate ground-level concentrations of PM₁₀ at a series of receptors. For each modeled scenario, the model setup included a series of sources representing the roadway segments in the vicinity of the intersections being modeled.

Roadway segments were represented in AERMOD using the program's RLINE source type. Link-specific inputs included source location, source length and width, emission rate, release height, and initial vertical dimension.

AERMOD was run using five years meteorological data provided by ADEQ, based on observed surface data from Phoenix Sky Harbor International Airport and upper air data from Tucson International Airport for the 5-year period from 2020 through 2024.

Receptors were placed in order to estimate the highest concentrations of PM₁₀, to determine any possible violations of the NAAQS. Highest concentrations are expected to occur near the areas with the highest-volume roadways and near areas where vehicles are restarting and/or idling. Receptors were placed five meters from the roadways, spaced with a spacing of 25 meters at a height of 1.8 meters.

Determine Background Concentrations

The West Phoenix monitor was selected as the background monitor for this project analysis. Six monitors in the project vicinity were reviewed against EPA criteria for background monitor selection. The two monitors are heavily influenced by nearby industrial and commercial emission sources, and one is heavily influenced by agricultural activities; therefore, these three monitors do not represent the land use along the project corridor. Of the remaining monitors that are more representative of residential areas with limited industrial activities, West Phoenix is closest to the project footprint. The highest monitor values for each year are summarized in Table 7.

Table 7. West Phoenix Monitor Highest 24-hour PM₁₀ Concentrations (µg/m³)

Data Year	2023	2024	2025
1 st	182 ^b	205 ^{a,b}	306 ^b
2 nd	109	153	223 ^b
3 rd	104	108	220 ^b
4 th	83	97	116

^a Fourth highest over the last 3 years without removing atypical events

^b Flagged by Maricopa County as data associated with an exceptional event

Source: EPA. Air Data: Air Quality Data Collected at Outdoor Monitors Across the US. Available at: <https://www.epa.gov/outdoor-air-quality-data/download-daily-data>. Accessed March 11, 2026.

The fourth highest monitor value over three years from 2023 to 2025 is 205 µg/m³, which is greater than the NAAQS of 150 µg/m³. Several values during this time period

were flagged by MCAQD as data affected by an atypical air quality event, such as a high wind event, thunderstorm activity, or smoke from fireworks. An Atypical Events Report was prepared for the project to evaluate the local conditions on specific dates and demonstrate the monitor values are not representative of background PM₁₀ concentrations. The Atypical Events Report provides information to justify monitor value concentrations on three specific days were likely influenced by weather events. Once removed, the remaining data was used to calculate a PM₁₀ background concentration of 116 µg/m³), as shown in Table 8.

Table 8. West Phoenix Monitor Highest 24-hour PM₁₀ Concentrations, Removing Atypical Events (µg/m³)

Data Year	2023	2024	2025
1 st	109	205	306
2 nd	104	108	220
3 rd	83	97	116 ^a
4 th	79	97	109

^a Fourth highest over the last 3 years, removing atypical events.

Source: EPA. Air Data: Air Quality Data Collected at Outdoor Monitors Across the US. AQS Site ID: 04-013-0019. Available at: <https://www.epa.gov/outdoor-air-quality-data/download-daily-data>. Accessed March 11, 2026.

As a result, the predicted background concentration for the project, following removal of data associated with atypical events, is 116 µg/m³. This concentration is suitable for use as a reasonable background concentration for the project, as it is more representative of typical background concentrations for the project site excluding atypical events.

The approved background value was added to the AERMOD modeled values for comparison to the PM₁₀ NAAQS of 150 µg/m³ (pending EPA approval of the Atypical Events Report). The background values are conservative, because it is expected that ambient PM concentrations will be lower in future years as a result of State Implementation Plans and the general trend in declining vehicle emissions due to technological advances. It is assumed that emissions from other nearby sources are already included in the ambient monitoring data.

This selected monitor was approved during the interagency consultation process. Monitor site details, including a figure showing the distance to the monitor and a comparison to other nearby monitors, are included in the materials in Appendix A. The Atypical Events Report is currently pending EPA approval, and it is provided as Appendix B.

Calculate Design Values and Determine Conformity

The model results were added to the background concentrations for the Build alternative in order to calculate the design values. To determine the 24-hour PM₁₀ design value, the following steps were used, as outlined in the guidance:

1. From the air quality modeling results from the build scenario, identify the sixth-highest 24-hour concentration for each receptor. AERMOD output provides the sixth-highest modeled concentration from the 5-year period for each receptor.
2. Identify the receptor with the highest sixth-highest 24-hour concentration.
3. Identify the appropriate 24-hour background concentration from the three most recent years of air quality monitoring data. This value is $127 \mu\text{g}/\text{m}^3$, as described above.
4. For the receptor identified in Step 2, add the sixth-highest 24-hour modeled concentration to the appropriate 24-hour background concentration (from Step 3).
5. Round to the nearest $10 \mu\text{g}/\text{m}^3$. The result is the highest 24-hour PM_{10} design value in the build scenario.

Consider Mitigation or Control Measures

If the total concentration of the highest 24-hour PM_{10} design value is greater than the PM_{10} NAAQS, mitigation or control measures are needed to be considered to reduce emissions in the project areas.

Document Analysis

This Air Quality Technical Report documents the PM hot-spot results.

3.3.2 *PM₁₀ Modeling Results*

The modeled concentrations, including background, were compared to the applicable NAAQS. The result is shown in Table 9.

Table 9. Predicted 24-Hour PM_{10} Concentrations ($\mu\text{g}/\text{m}^3$)

Location	6 th -Highest PM ₁₀ Value	Background PM ₁₀ Value	Total Concentration	Total Concentration Rounded to the nearest 10 µg/m ³	PM ₁₀ NAAQS
SR 202L and SR 30 traffic interchange and the 67th Ave TI	20.4	116	136.4	140	150
Southern Road and SR 202L Ramps	25.8	116	141.8	140	150
91 st Ave and SR 30 Ramps	25.5	116	141.5	140	150
Avondale Blvd and SR30 Ramps	30.2	116	146.2	150	150
Estrella Blvd and SR30 Ramps	26.9	116	142.9	140	150
Sarival Ave and SR 30 Ramps	18.9	116	134.9	130	150

µg/m³ = micrograms per cubic meter

As shown in Table 8, the total concentrations for the two selected locations do not exceed the PM₁₀ NAAQS when rounded to the nearest 10 µg/m³. The project meets conformity requirements. Therefore, mitigation or control measures to reduce emissions in the project area do not need to be considered by the project sponsors.

Due to the large volume of input and output files created for this analysis, they are available electronically upon request.

3.4 MOBILE SOURCE AIR TOXICS

On February 3, 2006, the FHWA released Interim Guidance on Air Toxic Analysis in NEPA Documents. This guidance was superseded on January 18, 2023, by the FHWA's Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents (FHWA 2023a). The purpose of this guidance is to advise when and how to analyze MSATs in the NEPA environmental review process for highways. This guidance is considered interim because MSAT science is still evolving. As the science progresses, the FHWA will update the guidance.

A quantitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The FHWA's Updated Interim Guidance groups projects into the following tiers:

- Tier 1 - No analysis for projects without potential for meaningful MSAT effects.
- Tier 2 - Qualitative analysis for projects with low potential MSAT effects.
- Tier 3 - Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

The 2019 Air Quality Report demonstrated the project met criteria for Projects with Higher Potential MSATs Effects due to projected traffic volumes greater than 140,000 to 150,000 AADT. The report included a quantitative MSAT analysis based on the projected 2040 traffic volumes using the FHWA guidance applicable at the time. The analysis concluded that there would be changes in MSAT emissions in the immediate area of the project under the build Alternative, relative to the No-Build Alternative, as a result of VMT changes associated with the project; however, the MSAT emissions in 2040 trended significantly downward from the 2018 baseline.

3.4.1 Comparison to Previous MSAT Analysis

Traffic volumes for the current design have been projected to 2050 as part of MAG's regional transportation demand modeling. The 2050 AADT for six mainline segments are projected to be less than the 2040 AADT presented in the 2019 Air Quality Report. The two segments with 2050 AADT greater than the 2040 AADT from the 2019 Air Quality Report are less than 2% greater. The volumes are presented in Table 10.

Table 10. Projected 2040 and 2050 Traffic Volumes for MSAT Analysis

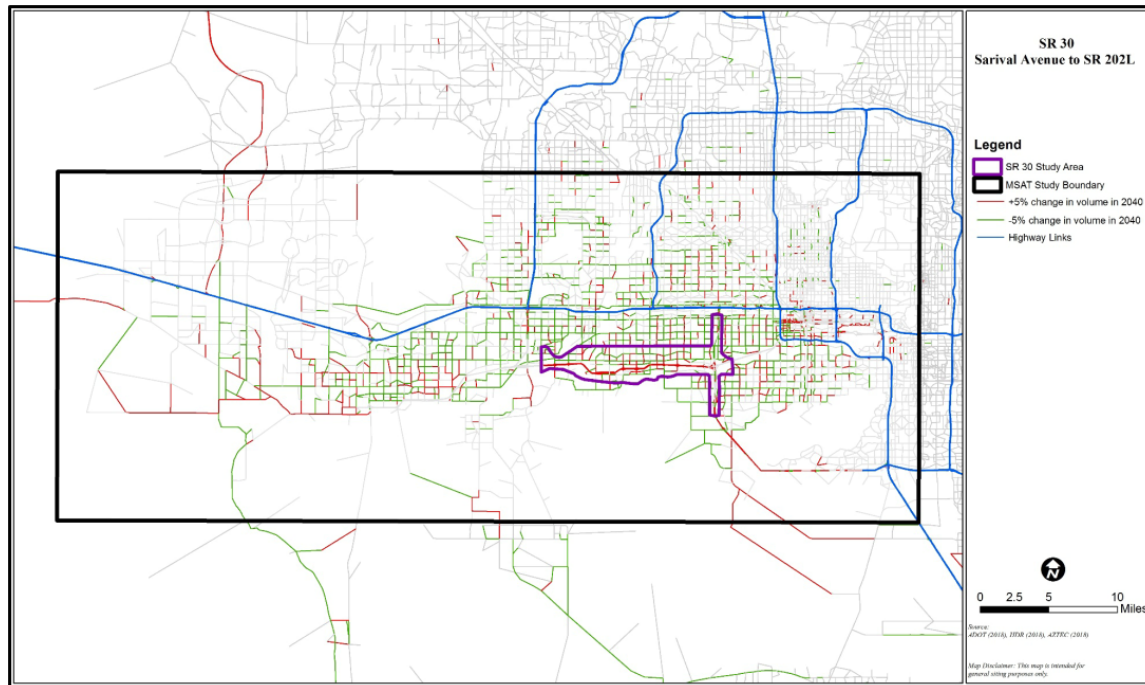
SR 30 Mainline Segment	2040 AADT ¹	2050 AADT ²	Change in AADT
Sarival Ave to Estrella Pkwy	119,200	118,376	-0.69%
Estrella Pkwy to Bullard Ave	139,600	131,837	-5.5%
Bullard Ave to Dysart Rd	138,300	140,584	+1.65%
Dysart Rd to Avondale Blvd	137,800	139,643	+1.33%
Avondale Blvd to 107th Ave	158,200	154,116	-2.58%
107th Ave to 91st Ave	165,600	162,186	-2.06%
91st Ave to 67th Ave	191,500	186,884	-2.4%
East of 67th Ave	176,600	159,469	-9.7%

Note: AADT – Annual Average Daily Traffic.

Source: ADOT, 2019; WSP, 2025; and Stanley Consultants, 2025.

The MSAT analysis presented in the 2019 Air Quality Report is regional in nature, and although the project footprint has changed since 2019, the MSAT analysis captures changes in traffic patterns well beyond the project boundaries and includes the traffic network beyond the current project footprint, as shown in Figure 15.

Figure 15. MSAT Network Evaluated in 2019 Analysis



Source: ADOT, 2019.

Therefore, it is reasonable to assume the conclusions in the 2019 Air Quality Report are still valid, and changes in MSAT emission in 2050 would be significantly less than current values, which is also supported by the information in Figure 4. MSAT levels could be higher in some locations than others, such as adjacent to the SR 30 mainline, but current tools and science are not adequate to quantify them.

3.4.2 Incomplete or Unavailable Information for Project Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in mobile source air toxic (MSAT) emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the

environment and their potential to cause human health effects” (EPA, <https://www.epa.gov/iris/>). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude. Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA’s Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are: cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI Special Report 16, <https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-reviewliterature-exposure-and-health-effects>) or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable. There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (Special Report 16, <https://www.healtheffects.org/publication/mobile-source-air-toxicscritical-review-literature-exposure-and-health-effects>). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect

to diesel engine exhaust, “[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk.” (EPA IRIS database, Diesel Engine Exhaust, Section II.C. https://iris.epa.gov/static/pdfs/0642_summary.pdf). There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to

the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an “acceptable” level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA’s approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable ([https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/\\$file/07-1053-1120274.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/$file/07-1053-1120274.pdf)). Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

3.4.3 MSAT Conclusions

What we know about mobile source air toxics is still evolving. Information is currently incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with the Build Alternative. There could also be increases in MSAT levels in a few localized areas where VMT increases. However, EPA’s vehicle and fuel regulations are expected to result in significantly lower MSAT levels in the future than exist today due to cleaner engine standards coupled with fleet turnover. The magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be significantly lower in the future than they are today, regardless of the preferred alternative.

3.5 CONFORMITY

Section 176c of the CAA requires that transportation projects conform to the approved air quality State Implementation Plan (SIP) for meeting federal air quality standards. Conformity requirements were made substantially more rigorous in the CAA Amendments. The conformity determinations for federal actions related to transportation projects must meet the requirements of 40 CFR Parts 51 and 93. This project is not likely to cause or contribute to the severity or number of violations of the NAAQS. This project is included in the *Maricopa Association of Governments (MAG) MOMENTUM 2050* Regional Transportation Plan. In addition, the project is included in the FY 2022-2025 MAG Transportation Improvement Program. The latest conformity

determination for the FY 2026-2030 MAG Transportation Improvement Program and MOMENTUM 2050 Regional Transportation Plan Update for the area was made by the Federal Highway Administration and Federal Transit Administration on January 8, 2026.

4.0 REFERENCES

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APPENDIX A – INTERAGENCY CONSULTATION DOCUMENTATION

APPENDIX B – ATYPICAL EVENTS REPORT