Arizona Department of Transportation
Environmental Planning

Draft Air Quality Report

SR24, SR202L (Santan) – Ironwood

Federal Project No. 024-A(201)T
ADOT Project No. 024 MA 000 F0719 01D/02D

September 18, 2025

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.

Draft Air Quality Report
FOR

SR24
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Federal Project No. 024-A(201)T

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September 18, 2025

EXECUTIVE SUMMARY

The Arizona Department of Transportation (ADOT) has initiated a project to construct improvements to State Route (SR) 24 between SR Loop 202 (SR 202L) and Ironwood Drive. The project is located on SR 24 between milepost (MP) 0.00 and MP 5.64 and SR 202L between MP 31.57 to MP 37.70 within the City of Mesa, Town of Queen Creek, Town of Gilbert, and unincorporated areas in Maricopa County and Pinal County, Arizona.

The National Environmental Policy Act (NEPA) of 1969 and the Clean Air Act (CAA) Amendments of 1990 require air quality impacts to be addressed in the preparation of environmental documents for federal projects. The level of effort utilized to evaluate these impacts varies from a qualitative description analysis to a quantitative modeling analysis. The project area is located in the Phoenix nonattainment area for particulate matter (PM_{10}). Through the interagency consultation process, it was determined that this project required a PM_{10} hot-spot analysis. In addition, a quantitative Mobile Source Air Toxic (MSAT) analysis was conducted.

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 and the FY 2025-2030 Transportation Improvement Program as approved by MAG Regional Council on January 22, 2025.

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LIST OF ACRONYMS

ADEQ	- Arizona Department of Environmental Quality
ADOT	- Arizona Department of Transportation
CAA	- Clean Air Act
CEQ	- Council of Environmental Quality
CFR	- Code of Federal Regulations
CO	- carbon monoxide
DDI	- diverging diamond intersection
EPA	- Environmental Protection Agency
FHWA	- Federal Highway Administration
GP	- general-purpose
LOS	- Level of Service
MAG	- Maricopa Association of Governments
MCAQD	- Maricopa County Air Quality Department
MOVES	- Motor Vehicle Emissions Simulator
MP	- milepost
mph	- miles per hour
MSATs	- Mobile Source Air Toxics
NAAQS	- National Ambient Air Quality Standards
NEPA	- National Environmental Policy Act
NO_2	- nitrogen dioxide
O_3	- ozone
PAH	- polycyclic aromatic hydrocarbon
PM_{10}	- particulate matter
$PM_{2.5}$	- fine particulate matter
POM	- polycyclic organic matter
ppm	- parts per million
ROW	- right-of-way
RTP	- Regional Transportation Plan
SIP	- State Implementation Plan
SO_2	- sulfur dioxide
SR	- State Route
TI	- traffic interchange
TIP	- Transportation Improvement Program
TIOP	- traffic interchange overpass structures
VMT	- vehicle mile traveled

1.0 INTRODUCTION

In 2014 the initial segment of SR 24 between SR 202L and Ellsworth Road was opened to traffic. In 2023 the second segment of SR 24 between Ellsworth Road and Ironwood Drive was completed in an interim condition. The purpose of the project is to widen SR 24 to accommodate two additional general-purpose lanes between Ellsworth Road and Ironwood Drive, resulting in three new bridges over existing crossroads at Williams Field, Signal Butte, and Meridian Road and widening the existing SR 24 bridge over Mountain Road. Roadway and bridge widening over Power Road and the East Maricopa Floodway is proposed along SR 202L to provide lane continuity and additional traffic capacity to and from the SR 24/SR 202L system traffic interchange (TI). The need for the project is to construct improvements to accommodate increased traffic demand.

The scope of work for the project consists of:

- Adding two additional travel lanes on SR 24 in each direction between Ellsworth Road and Ironwood Drive (3+ auxiliary)
- Adding new three-lane approaches and traffic interchange overpass structures (TIOP) at Williams Field Road, Signal Butte Road, and Meridian Road
- Widening the existing grade separated structures at Mountain Road
- A new four-lane bridge over SR 24 along the Crismon Road alignment
- Adding ramp connector roads between SR 202L and the Ellsworth Road intersection including structures over Ray and Hawes Road, a service ramp, and the Powerline Floodway
- Restriping portions of the directional system TI ramps from one lane to two lanes
- Adding an outside general purpose travel lane on the northbound SR 202L between SR 24 and Guadalupe Road
- Reconstructing NB SR 202L exit and entrance ramps at the Elliott Road TI and the exit ramp at Guadalupe Road TI
- Modifying existing on-site roadway drainage system to accommodate additional lanes
- Installing and upgrading signing and pavement markings
- Installing ITS/FMS, traffic signals, and lighting
- Placing seeding on SR 24
- Restoring landscaping and irrigation on SR 202L
- Upgrading sidewalks and ramps to be ADA compliant on Ellsworth Road
- Removing existing SR 202L AR-ACFC and resurfacing by diamond grinding the roadway surface on both directions between Recker Road to Guadalupe Road
- Widening WB SR 202L from the Power Road WB exit ramp to Recker Road including both Power Road ramps
- Widening EB SR 202L between the Power Road entrance and exit ramps including both Power Road ramps
- Widening the existing SR 202L structures over Power Road and the Eastern Maricopa Floodway
- Replacing deck joints on existing SR 202L structures within the project limits
- Constructing new retaining and sound walls and screen walls if needed
- Conducting geotechnical investigations consisting of structure and roadway borings

- Replacing sign panels and removing sign lighting at three SB SR 202L locations north of Guadalupe Rd
- Reconstructing the existing half-diamond intersection of SR 24 at Ironwood Drive to a half diverging diamond intersection (DDI)
- Repairing a pavement crack on the system TI NW Ramp

Permanent project improvements would occur within the existing ADOT right-of-way (ROW). New ROW is not anticipated. Temporary construction easements are anticipated to construct sound walls along the existing ROW. Wall agreements between ADOT and adjacent landowners for maintenance purposes are anticipated. Construction is anticipated to begin in Fall 2026, and is expected to take approximately 28 months. Traffic restrictions are anticipated during construction with temporary advanced-warning signs extending approximately 1-mile in advance of the work limits. Night work and temporary lane closures along the SR 24 and SR 202L mainline, ramps, and crossroads will be required during construction. Lane closures will occur during off-peak travel times with the existing number of lanes maintained at all other times. Formal detour routes on local streets will not be designated during construction. Traffic delays should be expected during construction efforts.

The project is located in the Maricopa County (Phoenix) Nonattainment Area for particulates 10-microns in diameter or less (PM_{10}) and eight-hour ozone. The project is included in the MAG 2025-2030 MAG Transportation Improvement Program (TIP) and MOMENTUM 2050 MAG Regional Transportation Plan, and regional conformity analysis.

Figure 1. Project Location Map

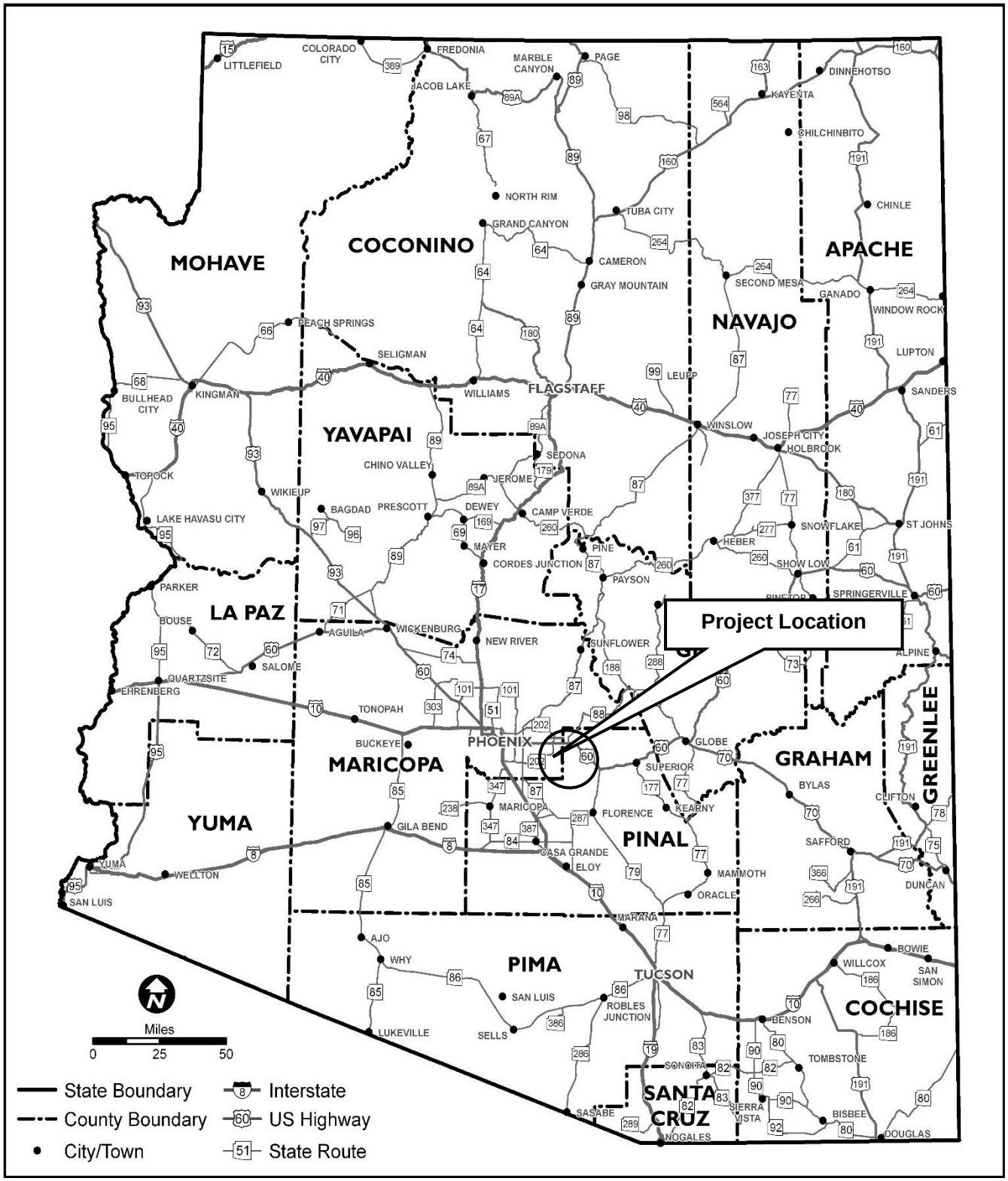
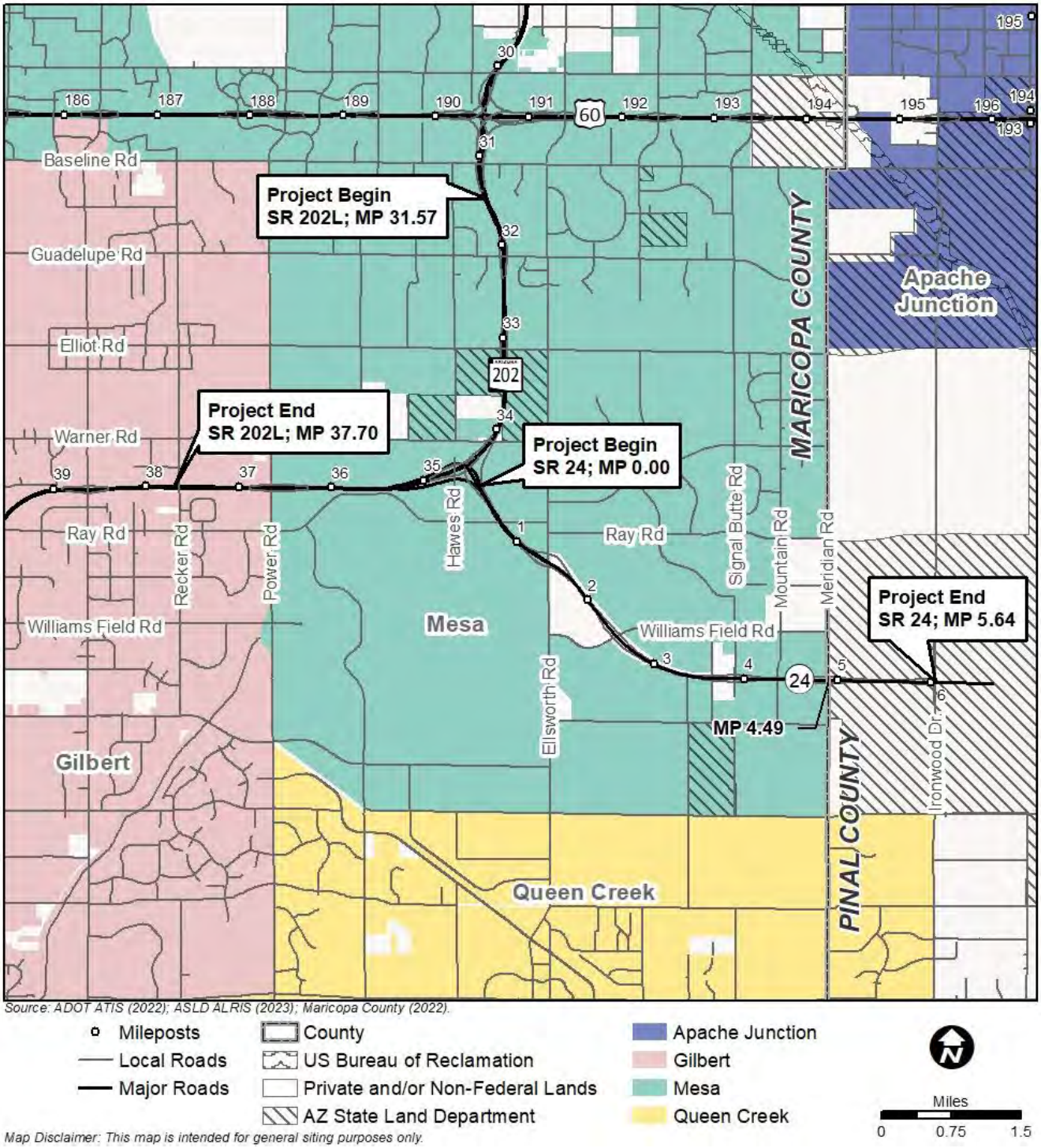


Figure 2. Project Vicinity Map



2.0 AFFECTED ENVIRONMENT

2.1 Regional Climatology

The study area elevation is approximately 1,200 feet above sea level. It lies in the Sonoran Desert, with a climate characterized by extremely hot summers, mild winters, and low precipitation. In the winter many days are over 70 degrees Fahrenheit (ºF). The normal high temperature is over 90 ºF from early May through late September, and over 100 ºF from early June through late August. Annual precipitation averages just less than 7 inches and occurs in the form of rain associated with afternoon showers or thunderstorms during the late summer months and with eastward-moving Pacific storms during the winter months. Snowfall is rare. A summary of average monthly temperature and precipitation is presented in Table 1.

Table 1
Climate Data for Phoenix, Arizona (2000–2023)

Month	Temperature (ºF)			Precipitation (inches)
	Average	Avg. Maximum	Avg. Minimum	Average
January	56.9	68.0	45.8	0.72
February	59.7	71.1	48.4	0.75
March	66.5	78.6	54.5	0.68
April	74.1	86.8	61.4	0.17
May	82.6	95.3	69.8	0.09
June	92.5	105.5	79.6	0.05
July	96.3	107.2	85.3	0.82
August	94.4	105.2	83.6	0.92
September	89.7	101.0	78.4	0.53
October	77.5	89.3	65.7	0.58
November	65.6	77.2	54.1	0.44
December	56.1	66.7	45.5	0.71
Annual	76.0	87.6	64.3	6.47
Source: National Weather Service, 2024				

2.2 Air Quality Standards

The federal CAA of 1970 was the first comprehensive legislation aimed at reducing levels of air pollution throughout the United States. Published in 1970, the CAA required the U.S. Environmental Protection Agency (EPA) to establish the NAAQS, which set maximum allowable concentrations for six criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), PM_{10}/fine particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), and lead, as shown in Table 2 and briefly described below.

Table 2 National Ambient Air Quality Standards			
Pollutant	Average Time	Primary Standard	Secondary Standard
Carbon monoxide (CO)	1-hour	35 ppm	No standard
	8-hour	9 ppm	No standard
Nitrogen dioxide (NO_2)	1-hour	0.100 ppm	No standard
	Annual	0.053 ppm	0.053 ppm
Ozone (O_3)[a]	8-hour	0.070 ppm[b]	0.070 ppm
Particulate matter (PM_{10})	24-hour	150 µg/m^3	150 µg/m^3
Fine particulate matter ($PM_{2.5}$)	24-hour	35 µg/m^3	35 µg/m^3
	Annual	9 µg/m^3	15 µg/m^3
Sulfur dioxide (SO_2)	1-hour	0.075 ppm	No standard
	Annual	No standard	0.01 ppm
Lead	Rolling 3-month average	0.15 µg/m^3	0.15 µg/m^3

µg/m^3 – micrograms per cubic meter
ppm – parts per million
Notes:
[a] 1-hour standard revoked June 15, 2005 in Arizona
[b] based on a 3-year average of the 4th highest concentration
Source: EPA, accessed in 2024

- CO is a colorless, odorless gas resulting from the incomplete combustion of carbon-based fuels, including petroleum products. In most areas, vehicle emissions are the primary source of CO. Mobile sources (on-road motor vehicle exhaust) are the primary source of CO in both Maricopa 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.

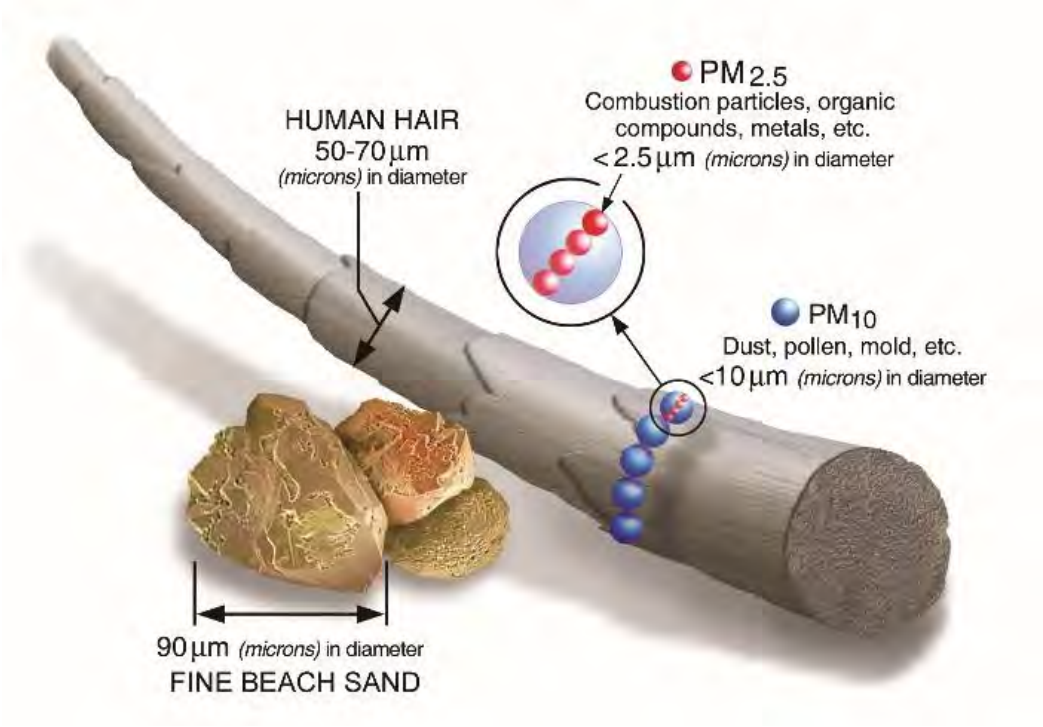
- Ozone (O_3) is a colorless toxic gas and is found in both the Earth's upper and lower atmospheric levels. In the upper atmosphere, O_3 is a naturally occurring gas that helps to prevent the sun's harmful ultraviolet rays from reaching the Earth. In the lower layer of the atmosphere, O_3 is human made. O_3 is produced through a complex chemical reaction in which precursor compounds, such as hydrocarbons and nitrogen oxides, are transformed by sunlight into ozone molecules, which consist of three oxygen atoms. The primary sources for O_3 precursors are vehicular and industrial emissions.

Figure 3. Ozone in the Atmosphere

- NO_2 is a yellowish-orange to reddish-brown gas resulting from high-temperature combustion. Diesel vehicles and power plants are major sources of NO_2.

- PM_{10} and $PM_{2.5}$ consist of suspended dust, fibers, combustion ash, and other fine particles. The major source is industrial emissions, but these pollutants also result from diesel vehicle emissions, unpaved roadways, agricultural activity, and dirt on paved roads kicked up by passing vehicles. PM_{10} is inhalable particles, with diameters that are generally 10 micrometers and smaller; and $PM_{2.5}$ is fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller. Figure 4 shows the sizes of PM_{10} and PM2.5 relative to fine beach sand and human hair.

Figure 4. Size Comparisons for PM Particles



Source: EPA

- SO_2 is a colorless gas with a rotten egg odor that results from the combustion of fuels containing sulfur. Primary sources are coal-fired power plants, industrial plants, and metal smelters, with some emissions from diesel vehicles burning low-grade fuels.

- Lead in the atmosphere results primarily from the burning of leaded fuels. Lead pollution has been drastically reduced in the United States in recent years with the banning of leaded automobile fuels.

Amendments to the CAA were passed in 1977 and 1990. Among many other revisions included in the amendments are requirements for nonattainment areas and State Implementation Plans (SIPs) for areas that do not meet the standards.

For most of the six criteria pollutants, two standards have been established: a primary standard and a secondary standard. Although there is little difference between the two, the primary standard was established with the goal of protecting the public health, while the secondary standard is intended for the protection of the public welfare.

2.3 Mobile Source Air Toxics

In addition to the NAAQS criteria air pollutants, EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of 21 of the 188 air toxics defined by the CAA. The MSATs are compounds that are emitted not only from stationary sources such as power plants, factories, oil refineries, dry cleaners and gas stations, but also from highway vehicles and nonroad equipment. Seven MSATs have been labeled a priority and considered as priority transportation toxics by the FHWA including: acrolein, benzene, 1,3 butadiene, diesel particulate matter plus diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter. These seven are currently considered the priority transportation toxics, but the list may be modified in the future.

Acrolein is a nearly clear to yellow liquid that burns easily, is easily volatized, and has a disagreeable odor. Acrolein can be formed from the breakdown of certain pollutants found in outdoor air, tobacco burning, or burning gasoline. Exposure to acrolein causes upper respiratory tract irritation, and congestion in low concentrations, may cause death in high concentrations. Not enough information is available on acrolein to evaluate its carcinogenicity.

Benzene is a volatile, colorless, highly flammable liquid that dissolves easily in water and has sweet odor. Benzene is found in emissions from burning coal and oil, motor vehicle exhaust, evaporation from gasoline service stations, and in industrial solvents. Tobacco smoke contains benzene and accounts for nearly half the national exposure to benzene. Benzene exposure causes drowsiness, dizziness, headaches, unconsciousness, vomiting, convulsions, and irritation to the eyes, skin, and upper respiratory tract. Benzene is a known human carcinogen. Chronic exposure to benzene causes blood disorders and chromosomal aberrations.

1,3-butadiene is a colorless gas with a mild, gasoline-like odor. Sources of 1,3-butadiene in the air include motor vehicle exhaust, manufacturing and processing facilities, forest fires or other combustion sources, and cigarette smoke. Exposure to 1,3-butadiene causes irritation of the eyes, nasal passages, throat, and lungs in low concentrations and blurred vision, fatigue, headache, and vertigo in higher concentrations. 1,3-butadiene has recently been reclassified from a probable human carcinogen to a known human carcinogen.

Diesel particulate matter is a collection of various-sized particles emitted from diesel powered vehicles, including primarily elemental carbon, organic carbon, and sulfate particles, with trace amounts of nitrate, metals, and other particles. Diesel particulate matter of concern for MSAT analyses are those particles sized 10 microns or smaller. Although particulate matter may be derived from a number of sources, diesel particulate matter by definition is derived exclusively

from diesel vehicle exhaust. Exposure to diesel particulate matter results in irritation to the eyes, nose, throat, and lungs, and may exacerbate asthma. Diesel particulate matter is considered a probable human carcinogen.

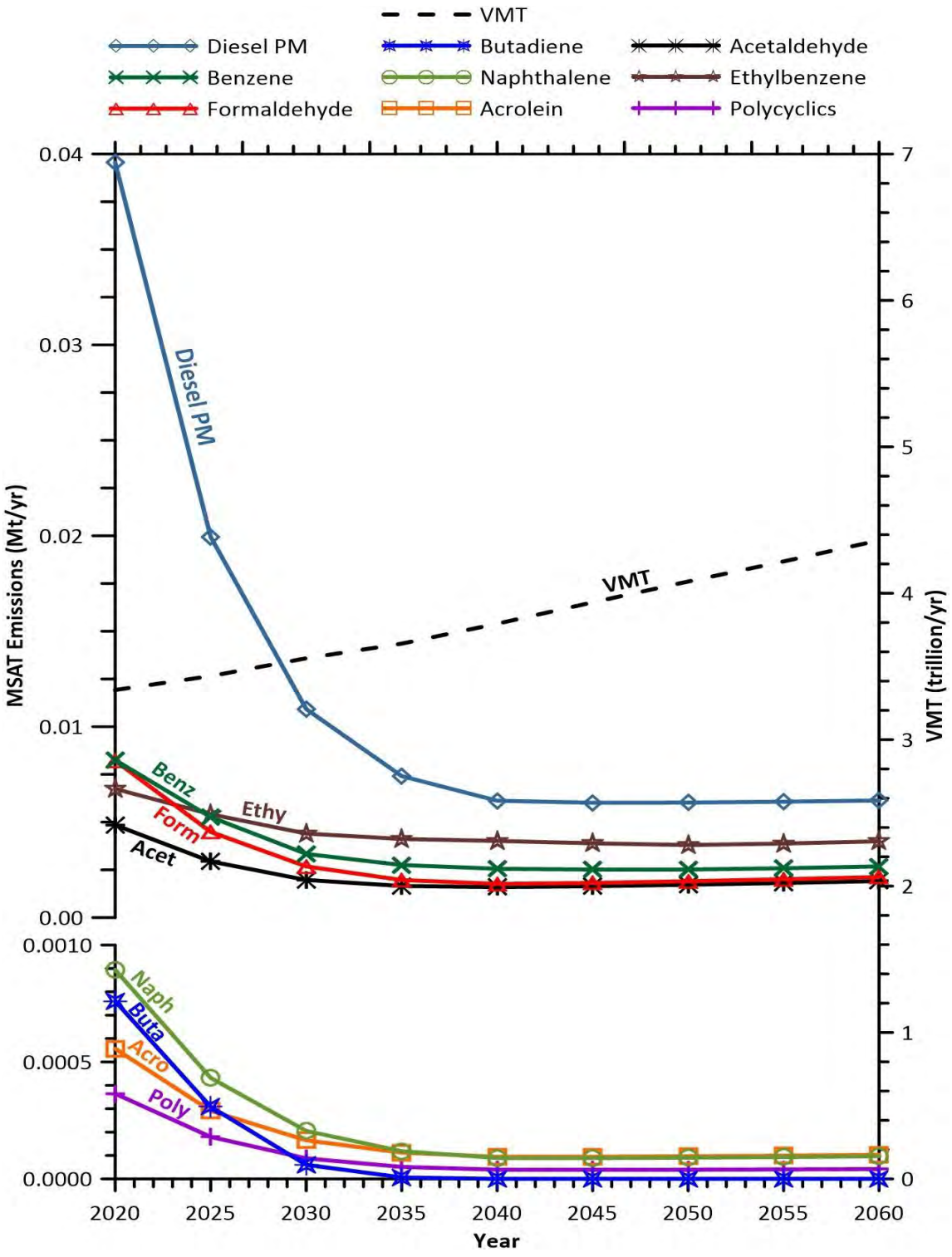
Formaldehyde is a colorless gas with a pungent, suffocating odor that is readily soluble in water. High levels of formaldehyde have been detected in indoor air, where it is released from various consumer products such as building materials and home furnishings. Major sources of outdoor concentrations of formaldehyde include power plants, manufacturing facilities, incinerators, and automobile exhaust emissions. Exposure to formaldehyde results in irritation to the eyes, nose, and throat; coughing; chest pains; and bronchitis. Formaldehyde is classified as a probable human carcinogen.

Polycyclic organic matter (POM) is a class of compounds that includes all organic structures having two or more fused aromatic rings, that have a boiling point greater than that of water, and that are extremely insoluble in water. There are eight major categories of POM, the most common being polycyclic aromatic hydrocarbon compounds (PAHs). POM compounds are formed primarily from combustion and are present in the atmosphere in particulate form. Major sources of POM include cigarette smoke, vehicle exhaust, and wood burning, among others. No information is available on the effects of short-term exposure to POM and PAHs. However, EPA has classified several PAHs as probable human carcinogens, and evidence suggests possible reproductive toxicity, chronic blood and liver effects, and chronic respiratory effects from POM.

Naphthalene is a white solid or powder that is insoluble in water and has a strong, mothball odor. Primary sources of naphthalene in the air include the burning of coal and oil, the use of mothballs, and from cigarette smoke. Exposure to naphthalene results in headache, nausea, vomiting, liver damage, cataracts, neurological damage in infants, and chronic inflammation of the lungs and nasal passages. Naphthalene is classified as a possible human carcinogen.

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. According to the EPA's Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), controls are required to dramatically decrease 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. FHWA Predicted National MSAT trends 2020-2060 for Vehicles Operating on Roadway Using EPA's MOVES3 Model



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 Nonattainment Areas

The CAA amendments of 1977 and 1990 authorized EPA to designate areas that have not met the NAAQS as nonattainment areas and to classify the areas level of non-attainment severity. Each nonattainment area requires a SIP that outlines actions to reduce air pollution to levels that comply with the NAAQS.

The project study area lies within the Phoenix nonattainment area for Ozone. In addition, the study area is located in the Phoenix nonattainment area for PM_{10} (see Figure 6). The Phoenix Ozone nonattainment area consists of most of central and eastern Maricopa County, including the Phoenix metropolitan area and a portion of northern Pinal County, including Apache Junction. The Phoenix PM_{10} nonattainment area is defined as an area within eastern Maricopa County, approximately 60 miles long by 48 miles wide, and an additional area within Pinal County, 6 miles by 6 miles in size. The PM_{10} nonattainment area encompasses the Phoenix metropolitan area, including Apache Junction.

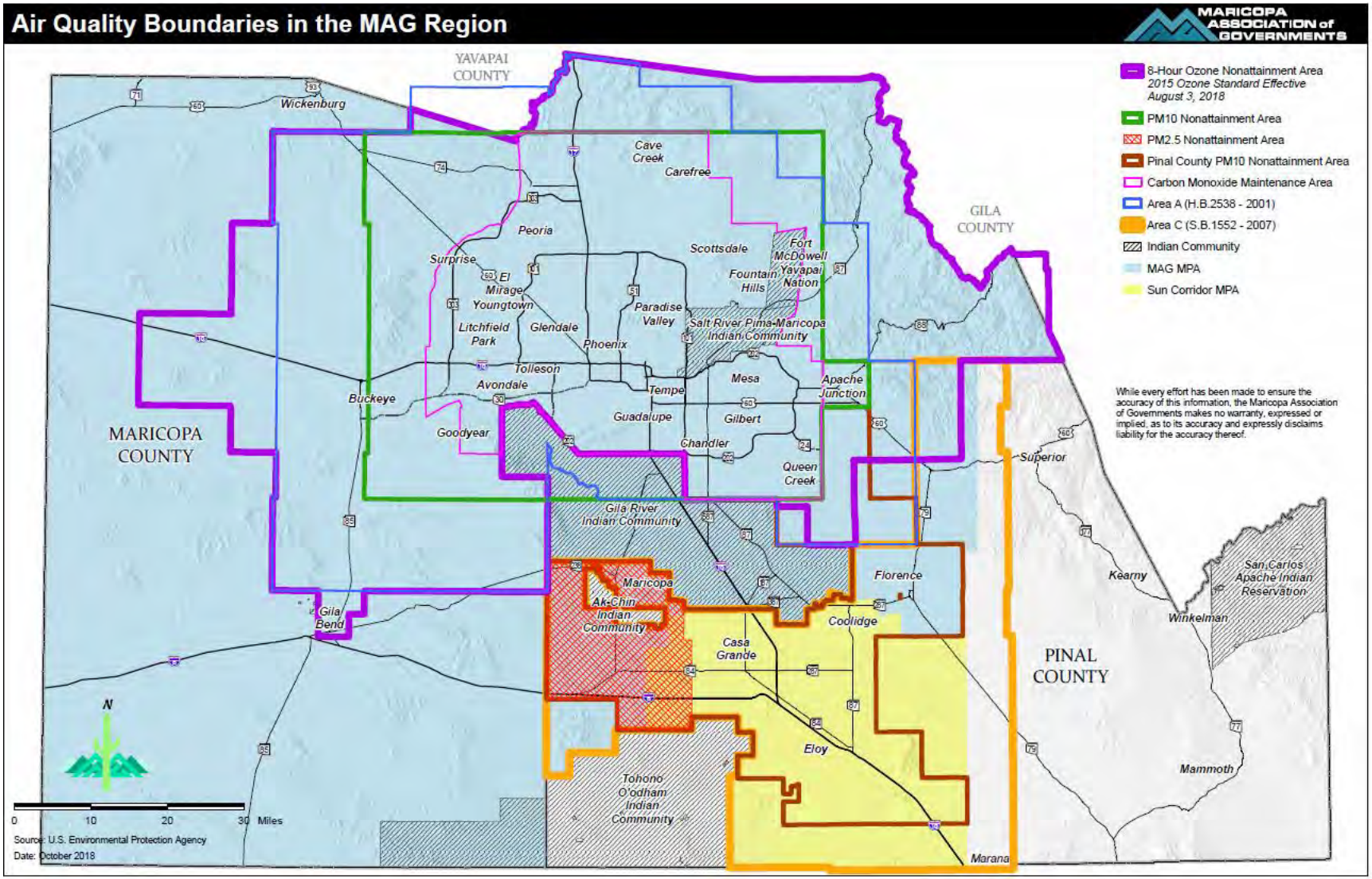
The Phoenix Ozone nonattainment area was originally designated a “moderate” nonattainment area in 1991 for not meeting the 1-hour O_3 NAAQS and was required to reach attainment by November 15, 1996. EPA reclassified the Phoenix area to “serious” nonattainment on February 13, 1998, for failing to attain the 1-hour O_3 standard. The State of Arizona requested attainment redesignation in December 2000, after 3 years had passed with no O_3 violations. On May 15, 2001, EPA determined that the Phoenix area had attained the 1-hour O_3 standard. A maintenance plan and a redesignation request were submitted on April 21, 2004, and the area was redesignated to attainment on June 14, 2005.

The 1-hour standard was revoked on June 15, 2005, and replaced with the 8-hour standard (called the 1997 standard because it was proposed in 1997, but implementation was delayed by litigation). Many of the control measures included in the 1-hour ozone maintenance plan were required to remain in place to ensure progress toward the 8-hour standard. In 2008, EPA revised the eight-hour ozone standard to 0.075 parts per million (from 0.08 ppm). On May 21, 2012, EPA published a final rule to designate the Maricopa nonattainment area as a “marginal” area.

In 2015, based on EPA’s review of the air quality criteria for O_3 and related photochemical oxidants and for O_3, EPA revised the levels of both standards. EPA revised the primary and secondary O_3 standard levels to 0.070 parts per million (ppm), and retained their indicator (O_3), forms (fourth-highest daily maximum, average across three consecutive years) and 8-hour averaging times. On May 4, 2016, EPA published a final rule to determine that the Maricopa Eight-Hour Ozone Nonattainment Area did not attain the 2008 standard and reclassified the area from “marginal” to “moderate.” MAG submitted a 2017 Eight-Hour Ozone Moderate Area Plan to comply with the 2008 ozone standards on January 1, 2017. On June 2, 2020, EPA published a final rule to approve the portions of the MAG 2017 Eight-Hour Ozone Plan addresses emissions inventories requirements, a demonstration of attainment by the applicable attainment date, reasonably available control measures, reasonable further progress, motor vehicle emission budgets for transportation conformity, vehicle inspection and maintenance programs, new source review rules, and offsets, effective July 2, 2020. The MAG 2020 Eight-Hour Ozone Plan – Submittal of Marginal Area Requirements for the Maricopa Nonattainment Area was

submitted to EPA on June 29, 2020. The MAG 2020 Eight-Hour Ozone Plan – Submittal of Marginal Area Requirements defined the 2015 eight-hour ozone standard of 0.070 parts per million. On October 7, 2022 EPA determined that the Phoenix nonattainment area did not obtain the standard by the marginal attainment date of August 3, 2021. As such, EPA reclassified the area to “moderate” nonattainment for the 2015 Ozone NAAQS effective November 7, 2022 (87 FR 60897). In response to this reclassification, a Moderate Area Plan was due to EPA on January 1, 2023, but has not been submitted.

Figure 6. Nonattainment and Maintenance Areas in Maricopa and Pinal Counties



The Phoenix CO maintenance area was originally classified as a “moderate” nonattainment area in November 1990 and attainment was required by December 1995. The Phoenix area did not attain the CO standard by that date, and the area was reclassified as a “serious” nonattainment area on June 10, 1996. The required SIP was submitted on July 8, 1999, with a revised submittal on April 18, 2001. On October 9, 2001, EPA determined that the plan was complete. On September 22, 2003, EPA found that the Phoenix area had attained the CO standard. In October 2004, EPA redesignated the Phoenix area to attainment with a maintenance plan. The maintenance plan requires many of the same restrictions as the SIP for the nonattainment designation and will remain in effect for a period of approximately 10 years to ensure that the NAAQS continue to be met. The MAG 2013 CO maintenance plan for the Maricopa County area was submitted to EPA in April 2013. On March 3, 2016, EPA approved the MAG 2013 CO maintenance plan, effective April 4, 2016.

Under 40 CFR 93.102(b)(4) of the EPA’s regulations, transportation conformity applies to maintenance areas through the 20-year maintenance planning period, unless the maintenance plan specifies that the transportation conformity requirements apply for a longer time period. Pursuant to CAA section 176(c)(5) and as explained in the preamble of the 1993 final rule, conformity applies to areas that are designated nonattainment or are subject to a maintenance plan approved under CAA section 175A.

The approved maintenance plans for CO area did not extend the maintenance plan period beyond 20 years from redesignation. Consequently, transportation conformity requirements for CO ceased to apply after April 8, 2025 (i.e., 20 years after the effective date of the EPA’s approval of the first 10-year maintenance plans and redesignation of the areas to attainment for the CO NAAQS).

The Phoenix PM_{10} nonattainment area was originally classified in November 1990 as “moderate.” The area was reclassified in June 1996 to “serious,” requiring attainment by 2001. The State of Arizona submitted a revised plan to achieve attainment and requested a 5-year extension of the attainment deadline for the 24-hour and annual PM_{10} standards for the Phoenix area. On January 10, 2002, EPA announced approval of the plan and granted the extension to December 2006. Despite the Most Stringent Measures and Best Available Control Measures adopted and implemented earlier, the Phoenix area failed to attain the PM_{10} standard by the December 2006 deadline. The failure triggered a special requirement under Section 189(d) of the CAA SIP revisions provide for annual reductions of PM_{10} and PM_{10} precursors of not less than 5 percent of the most recent emissions inventory until the NAAQS is attained. The SIP revision was submitted to EPA in December 2007, demonstrating the necessary 5 percent annual reductions through revisions to county dust control regulations, new agriculture best management practices, and paving unpaved roads and shoulders, among other control measures. On September 9, 2010, EPA proposed to approve in part and disapprove in part the SIP revisions. However, on January 25, 2011, prior to EPA’s final action on the SIP revisions, the State of Arizona withdrew the submitted plan from EPA’s consideration to be able to make improvements on the plan. This withdrawal triggered EPA to find, on February 14, 2011, that Arizona failed to make the required submittal under Section 189(d) of the CAA. The failure triggered an 18-month clock for mandatory application of sanctions (including loss of federal highway funds in 24 months) and a 2-year clock for a federal implementation plan. These

sanctions clocks would stop when a new plan is submitted and EPA determines that the new plan is complete. The State of Arizona adopted and submitted the 2012 5% Plans on May 25, 2012, and submitted supplemental information June 22 and July 2, 2012. EPA found the plans complete on July 20, 2012, stopping sanctions clocks. EPA concurred with Exceptional Events flags in letters dated September 6, 2012 and July 1, 2013 and approved fugitive dust statutes for the plans on December 3, 2013. EPA published a Notice of Adequacy of the Motor Vehicle Emissions Budget on December 5, 2013. On June 10, 2014, EPA published the final rule approving the MAG 2012 5% Plan for PM_{10}.

2.5 Ambient Pollutant Levels

The Arizona Department of Environmental Quality (ADEQ) and the Maricopa County Air Quality Department (MCAQD) maintain a network of air monitoring sites throughout Maricopa county. Monitoring sites vary in terms of the number of pollutants monitored, with some sites monitoring one pollutant and others monitoring up to five pollutants. Some monitoring sites operate for the entire year, while others operate for the peak pollutant season only. Most of the monitoring sites are located in the Phoenix metropolitan area. There are two monitoring sites adjacent to the study area, Higley and Falcon Field. Higley site is located near Higley Road and Williams Field Road in Gilbert. Falcon Field is located near Greenfield Road and McKellips Road in Mesa.

The Higley site collects data on concentrations of PM_{10}. The Falcon Field site collects data on concentrations of O_3. The average time is eight hours for O_3 and 24 hours for PM_{10}. Monitor dating from MCAQD's sites between 2022 and 2024 has recorded exceedances flagged at both Higley and Falcon Field sites. The Higley site recorded an exceedance of the PM_{10} standard in 2022 and 2023. The PM_{10} exceedances were attributed to atypical events including dust storms and high winds. The Falcon Field site recorded exceedances of the O_3 in 2022 through 2024.

40 CFR Part 51, Appendix W, section 8.3 and Hot Spot Guidance Section 8 provide recommendations for determining appropriate background concentration. 40 CFR Part. 51 (A 2019 clarification memo, "Additional Methods, Determinations, and Analyses to Modify Air Quality Data Beyond Exceptional Events" (available at https://www.epa.gov/air-quality-analysis/clarification-memo-additional-methods-determinations-and-analyses-modify-air) confirms the applicability of that CFR section to transportation conformity hot spot analyses.) Appendix W, Section 8.3.2 recommends that for many cases, the current design value at a nearby, representative monitoring station is the best starting point for background concentration. However, there may be cases where the current design value is not appropriate. Section 8.3.2.c.ii specifies there may be circumstances which would necessitate modifications to the background concentrations, stating that "[s]uch cases could include removal of data from specific days or hours when a monitor is being affected by activities that are not typical or not expected to occur again in the future (e.g., construction, roadway repairs, forest fires, or unusual agricultural activities). Such adjustments would make the monitored background concentrations more temporally and/or spatially representative of the area around the new or modifying source for the purposes of the regulatory assessment."

The data used to determine the background concentration includes 24-hour average pollutant levels and annual means, excluding atypical air quality events. If the chosen 3-year period for

determining the project's background concentration encompasses atypical air quality such events, data affected by those events can be excluded from the analysis. This is done to mitigate the influence of outliers unrepresentative in air quality events on the determination of the background concentration of an area data stemming from uncontrollable air quality events, which could lead to NAAQS exceedances, which have been noted by MCAQD in their Annual Monitoring Network Plans for the years discussed in this report. Table 3 summarizes concentrations monitored at Higley and Falcon Field sites.

Table 3
Higley and Falcon Field Site Air Quality Data

Monitoring Site	Pollutant	Averaging Time	2022		2023		2024	
			Concentration	No. of Exceedances	Concentration	No. of Exceedances	Concentration	No. of Exceedances
Higley (HI)	PM_{10}	24-hour	160 µg/m³*	1	165 µg/m³*	1	141 µg/m³	0
Falcon Field (FF)	O_3	8-hour	0.085 ppm	18	0.090 ppm	27	0.087 ppm	36

Notes: µg/m³ – micrograms per cubic meter; ppm – parts per million; ppb – parts per billion
* - dates that have been identified as atypical events by ADOT/Maricopa
Source: MCAQD, 2023 - 2025 Air Monitoring Network Plan, EPA Air Data for West Phoenix Monitor, Annual Data 2022 – 2024, https://www.epa.gov/outdoor-air-quality-data

3.0 ENVIRONMENTAL CONSEQUENCES

Project-level air quality analyses for proposed roadways typically focus on vehicle emissions of CO, PM_{10}, and MSATs. Although vehicle emissions include other pollutants, the concentrations of CO, PM_{10}, 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 O_3, 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 for the proposed project. Guidelines and procedures used in the analysis follow applicable air quality analysis protocols from EPA and FHWA. The *Project Level Quantitative Matter (PM10) Consultation Document* and interagency consultation determined that this project is considered project of air quality concern and requires a PM_{10} quantitative analysis. In addition, it is anticipated that this project would have meaningful potential MSAT effects, and therefore, MSAT quantitative analysis is necessary.

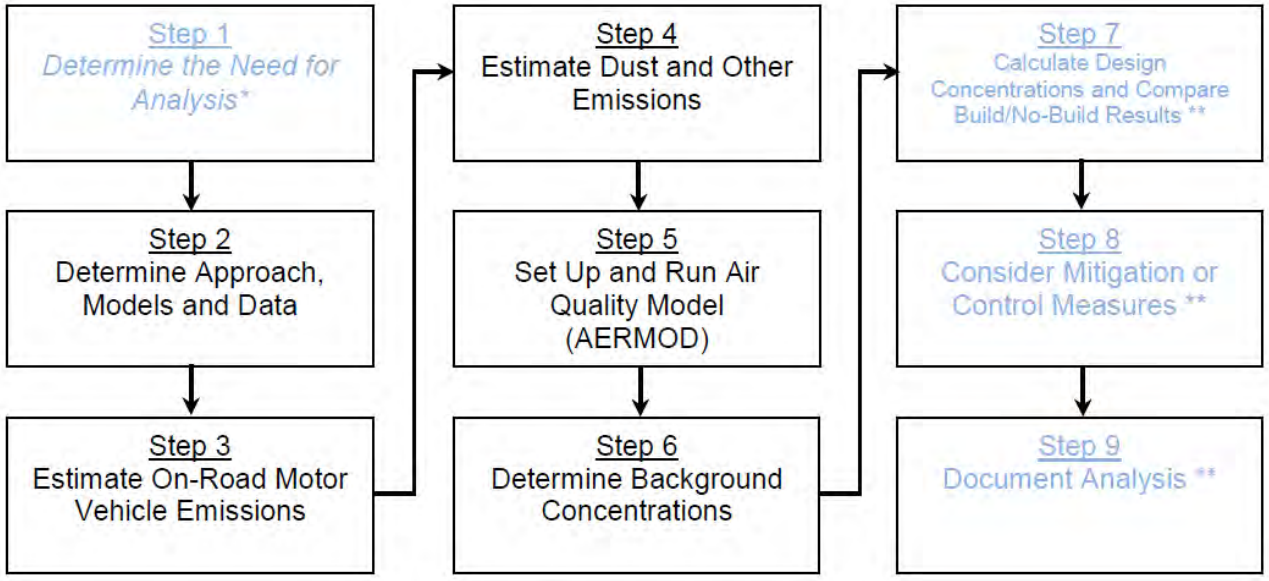
3.1 Project Level Hotspot PM_{10} Analysis

The project study area is located in Maricopa County, Arizona, which is currently classified as a nonattainment area for the PM_{10} 24-hour standard. The project was presented to the MAG consultation partners, which classified the project as one of air quality concerns. As such, a microscale 24-hour PM_{10} hotspot analysis was conducted.

3.1.1 Methodology

The EPA's nine-step process was used for hot-spot PM_{10} analysis, see Figure 7. Each step is described below.

Figure 7. EPA's Nine-step Process for PM10 Analysis



Determine the Need for Analysis

Based on the ADOT PM_{10} interagency consultation process, this project is classified as a project of air quality concern for PM_{10} based on the high volumes of diesel traffic on SR202L and SR 24 projected for 2050. Therefore, a project level hot-spot PM_{10} analysis is warranted.

Determine Approach, Models and Data

The PM_{10} analysis methodology was presented to the interagency consultation partners and finalized in August 2025. Based on the EPA guidance, and in consultation with FHWA, EPA and other agencies, SR202L and Guadalupe Road intersections, SR202L and Elliot Road intersections, SR202L and Power Road intersections, SR202L and SR24 TI, SR24 and Ellsworth Road intersections, and SR24 and Meridian Road intersections were selected for detailed hot-spot modeling to demonstrate project conformity with NAAQS based on the top intersections ranked by volume and by LOS and delay. These six selected TI areas have the great potential concentrations of PM_{10} due to congestion and traffic volumes in 2050.

The AERMOD dispersion model requires meteorological data to predict pollutant concentrations at receptors within the project area. Five years of meteorological data files were 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 2017 through 2021. This meteorological data was determined to be representative of the project area conditions because of its proximity to the project site, similarity in land use and terrain, and the data meets the completeness requirements of Section 5.3.2 of EPA's Meteorological Monitoring Guidance for Regulatory Modeling Applications (EPA 2000).

All model inputs and assumptions are included in Appendix A – Consultation Document for Project of Air Quality Concern. Information from ADEQ that describes the processing steps and summarizes completeness determination is included in Attachment A of Appendix A.

Estimate On-Road Motor Vehicle Emissions

On-road vehicle emissions were estimated using MOVES3.1. Age distribution and vehicle mix were provided by MAG consistent with the regional conformity analysis. Default fuel specifications data was used for the model's fuel data inputs. Temperature and relative humidity inputs were derived from the AERMET data provided by ADEQ to use in the dispersion model. Information from ADEQ that describes the preparation of AERMET data is included in Attachment A. MOVES input relies on link-specific data. Traffic data included link volume, speed, average grade, and elevation. Vehicle mix was assumed to be consistent with the MAG regional vehicle mix. The PM_{10} modeled links and receptors for SR202L and Guadalupe Road Intersections are shown in Figure 8. The PM_{10} modeled links and receptors for SR202L and Elliot Road Intersections are shown in Figure 9. The PM_{10} modeled links and receptors for SR202L and Power Road Intersections are shown in Figure 10. The PM_{10} modeled links and receptors for SR202L and SR24 TI are shown in Figure 11. The PM_{10} modeled links and receptors for SR24 and Ellsworth Road Intersections are shown in Figure 12. The PM_{10} modeled links and receptors for SR24 and Meridian Road Intersections are shown in Figure 13.

Roadway segments were represented in AERMOD using VOLUME options. Unique inputs used for each run were based on each link's length (in miles), traffic volume (vehicle per hour), vehicle average speed (miles per hour), and road grade (percent). Receptors were placed on the sidewalks over or under the SR202L and SR24 mainline. For SR202L and Guadalupe Road Intersections, a total of 69 sources and 1175 discrete receptors were modeled. For SR202L and Elliot Road Intersections, a total of 61 sources and 1073 discrete receptors were modeled. SR202L and Power Road Intersections, a total of 60 sources and 1055 discrete receptors were modeled. For SR202L and SR24 TI, a total of 65 sources and 3216 discrete receptors were modeled. For SR24 and Ellsworth Road Intersections, a total of 61 sources and 996 discrete receptors were modeled. For SR24 and Meridian Road Intersections, a total of 51 sources and 1148 discrete receptors were modeled.

PM_{10} emissions vary by time of day and time of year. 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. For each analysis site, MOVES was run for each of the four time periods (A.M. peak, midday, P.M. peak, and overnight) for four seasons (January, April, July, and October) for a total of 16 MOVES runs per selected TI. For every link, a set of 16 emission factors in units of grams per mile were developed for the project's analysis year of 2050.

Figure 8. PM Receptors and Rodway Links (SR202L and Guadalupe Road Intersections)

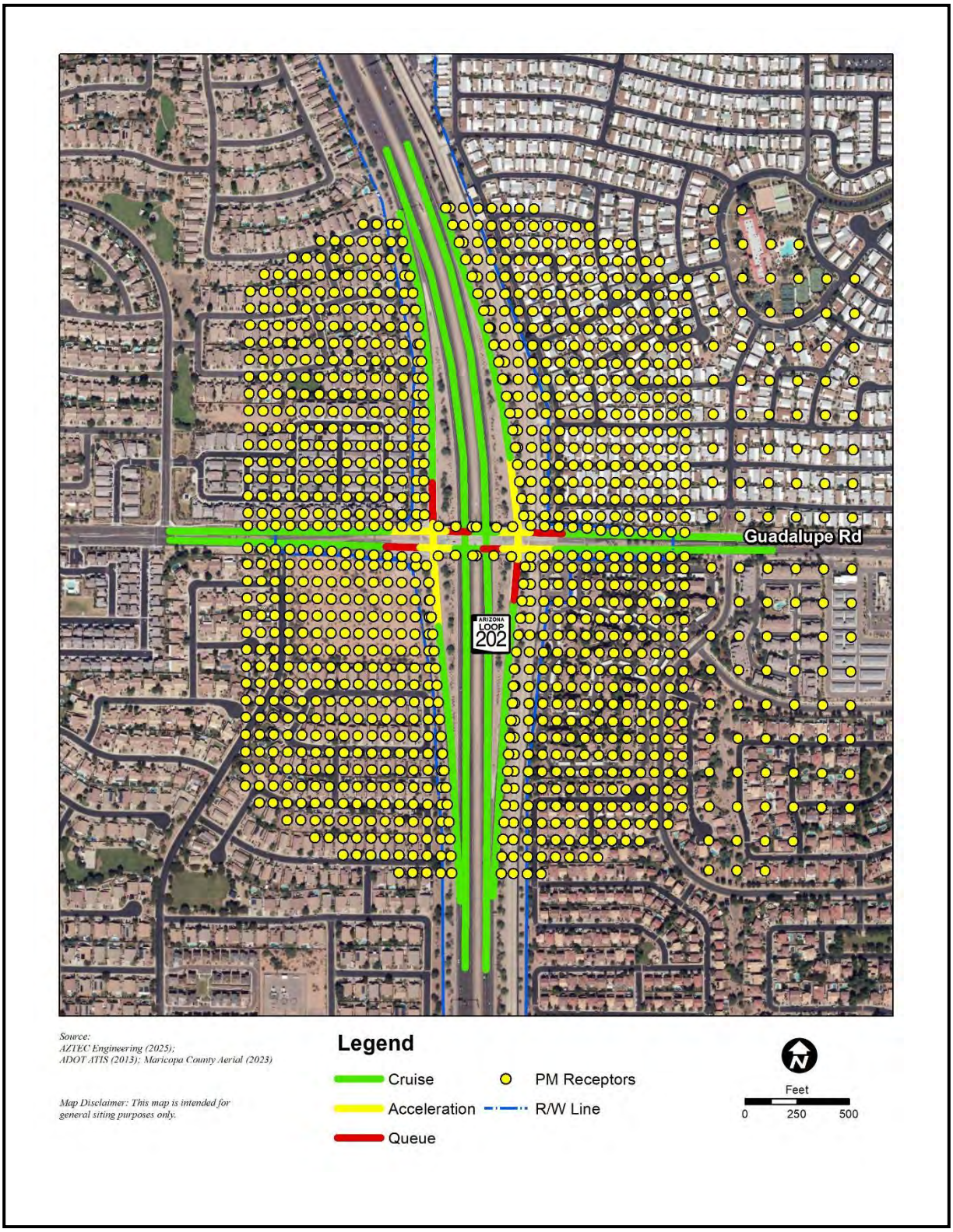


Figure 9. PM Receptors and Rodway Links (SR202L and Elliot Road Intersections)

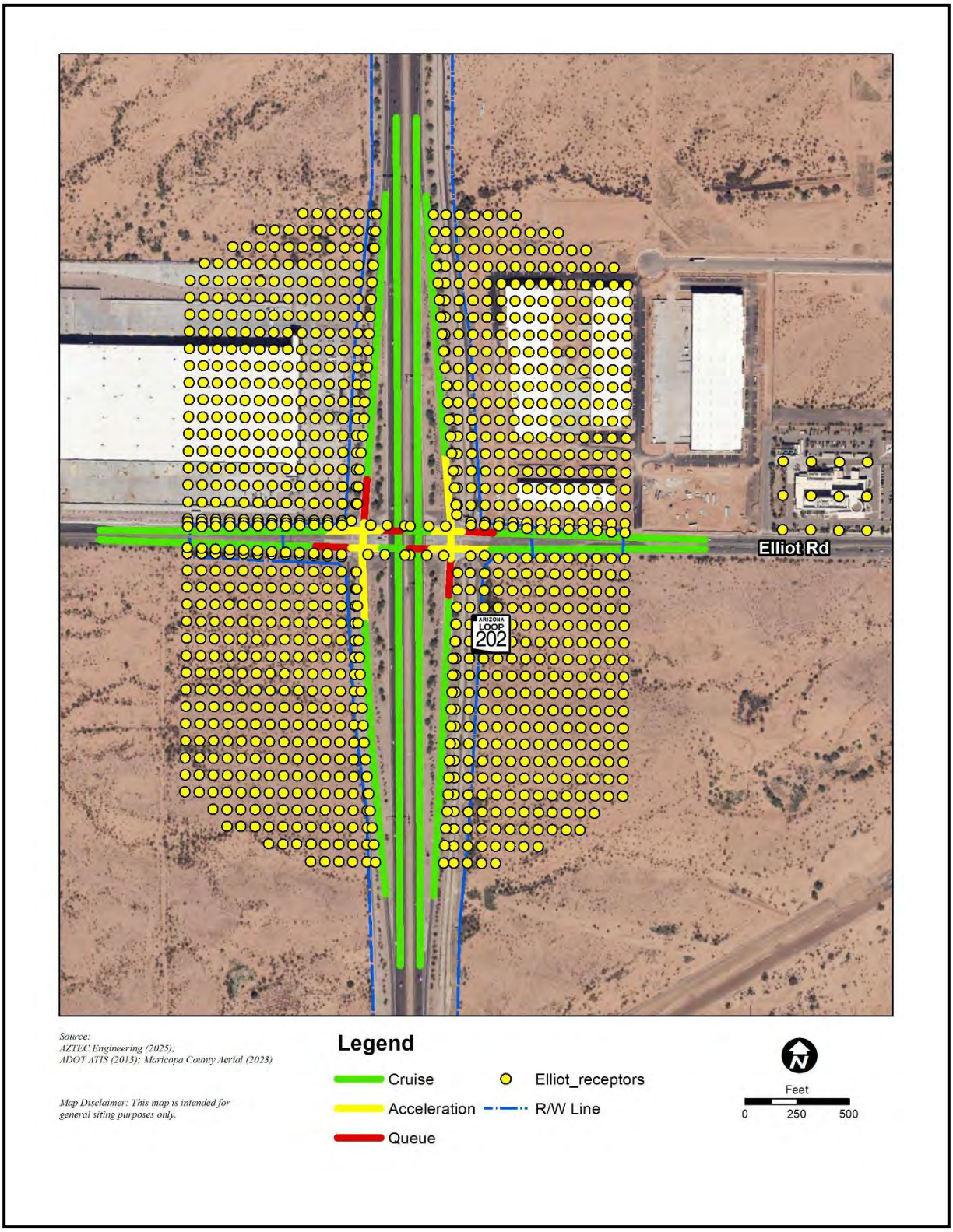


Figure 10. PM Receptors and Rodway Links (SR202L and Power Road Intersections)

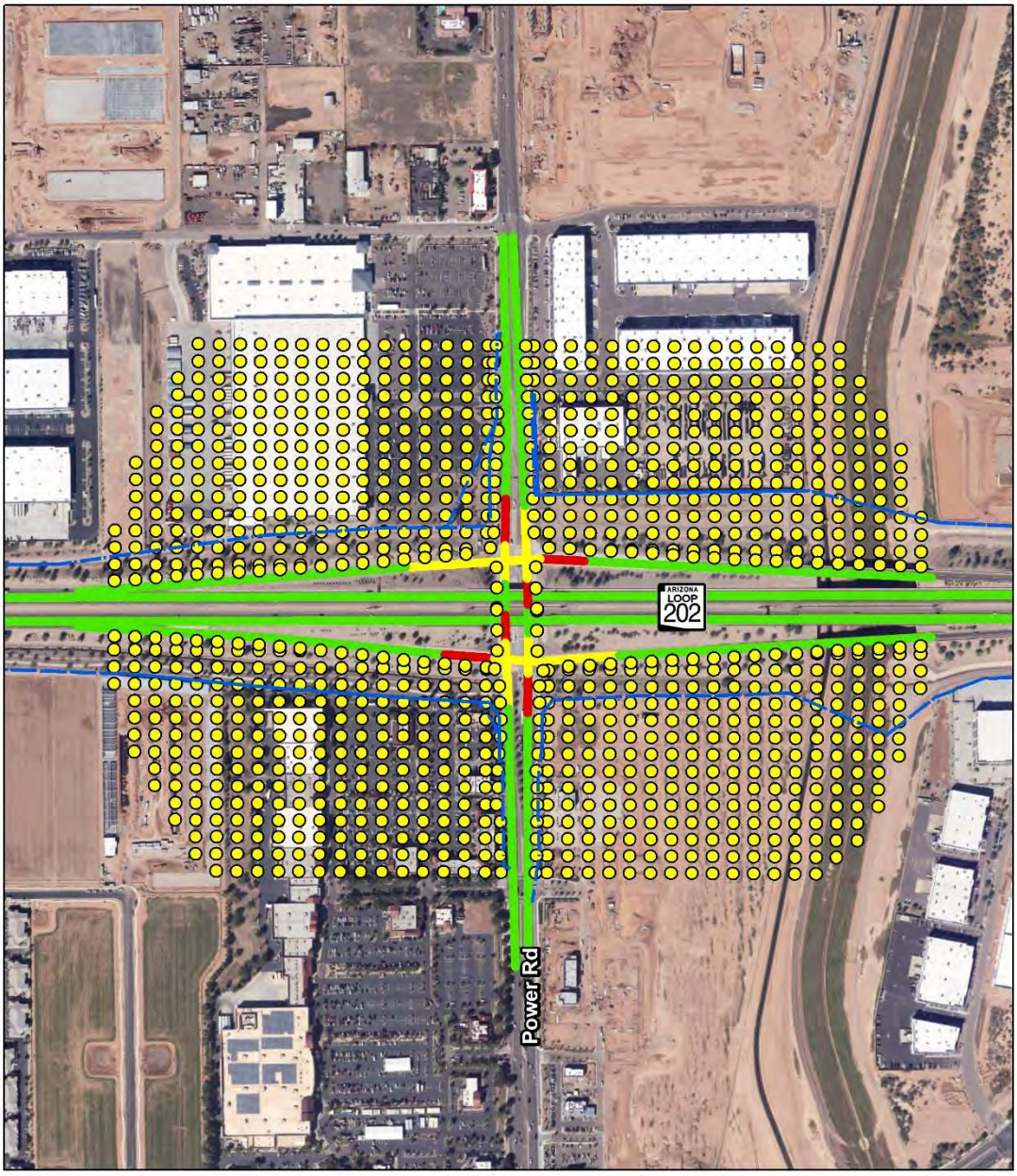


Figure 11. PM Receptors and Rodway Links (SR202L and SR24 TI)

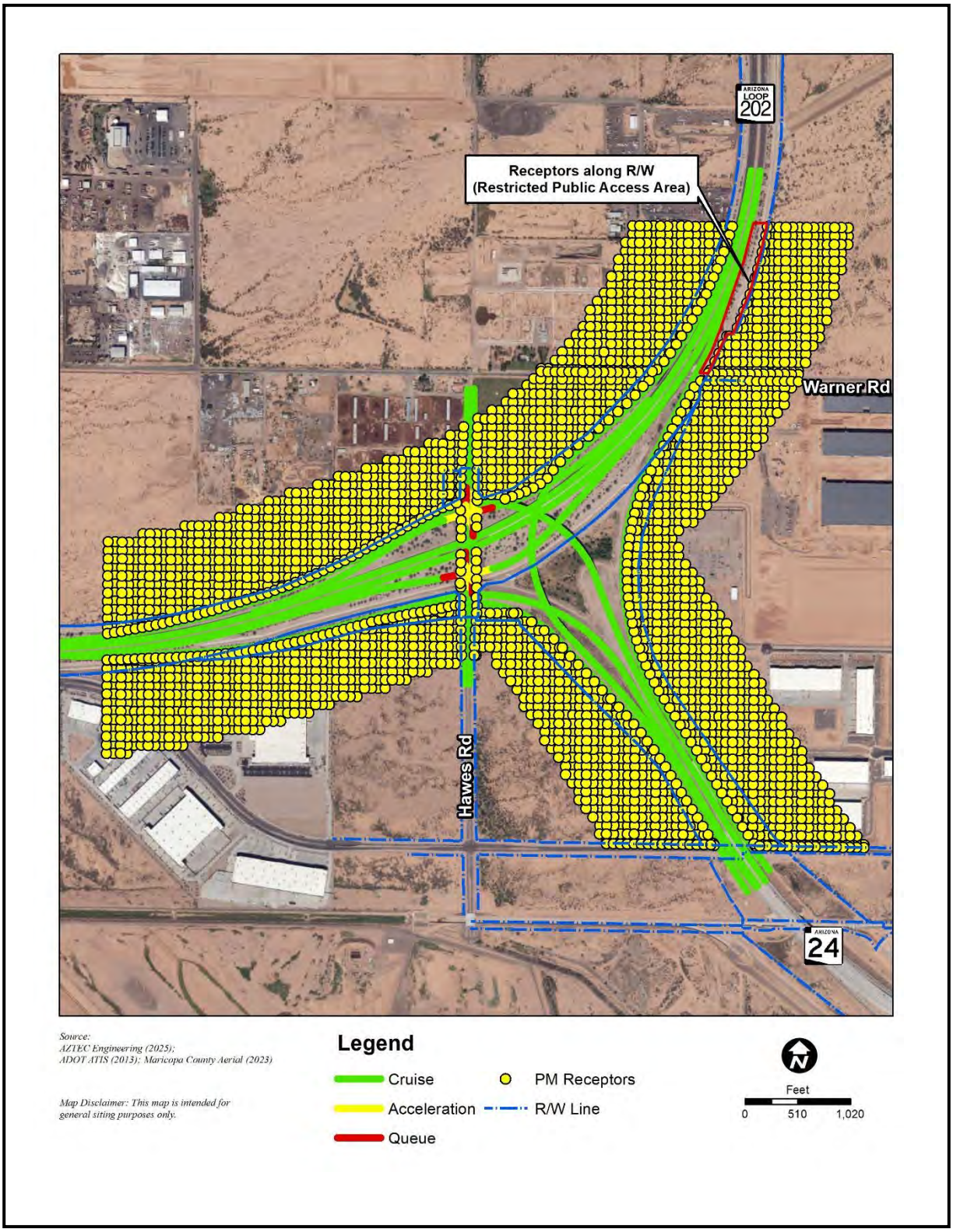


Figure 12. PM Receptors and Rodway Links (SR24 and Ellsworth Road intersections)

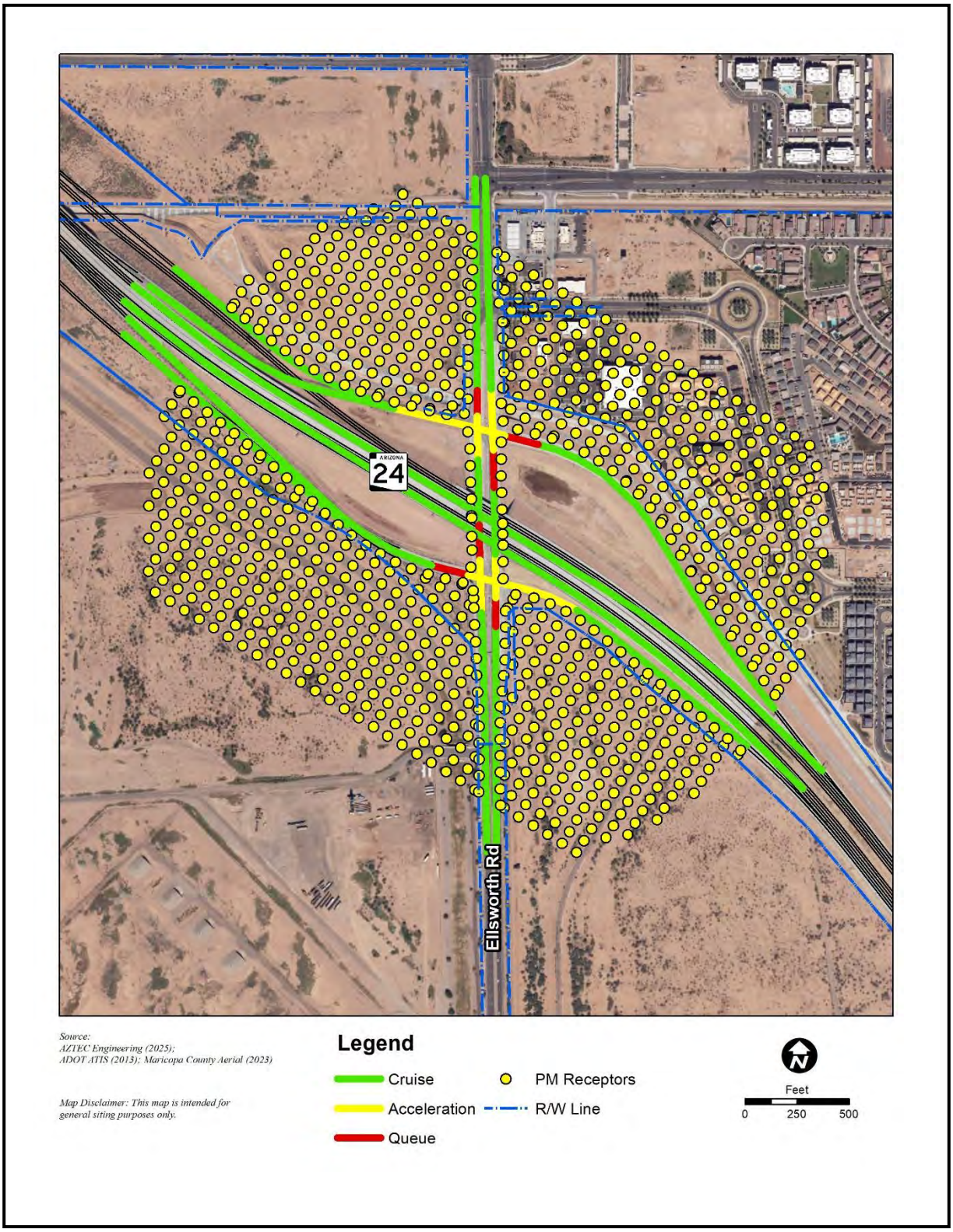
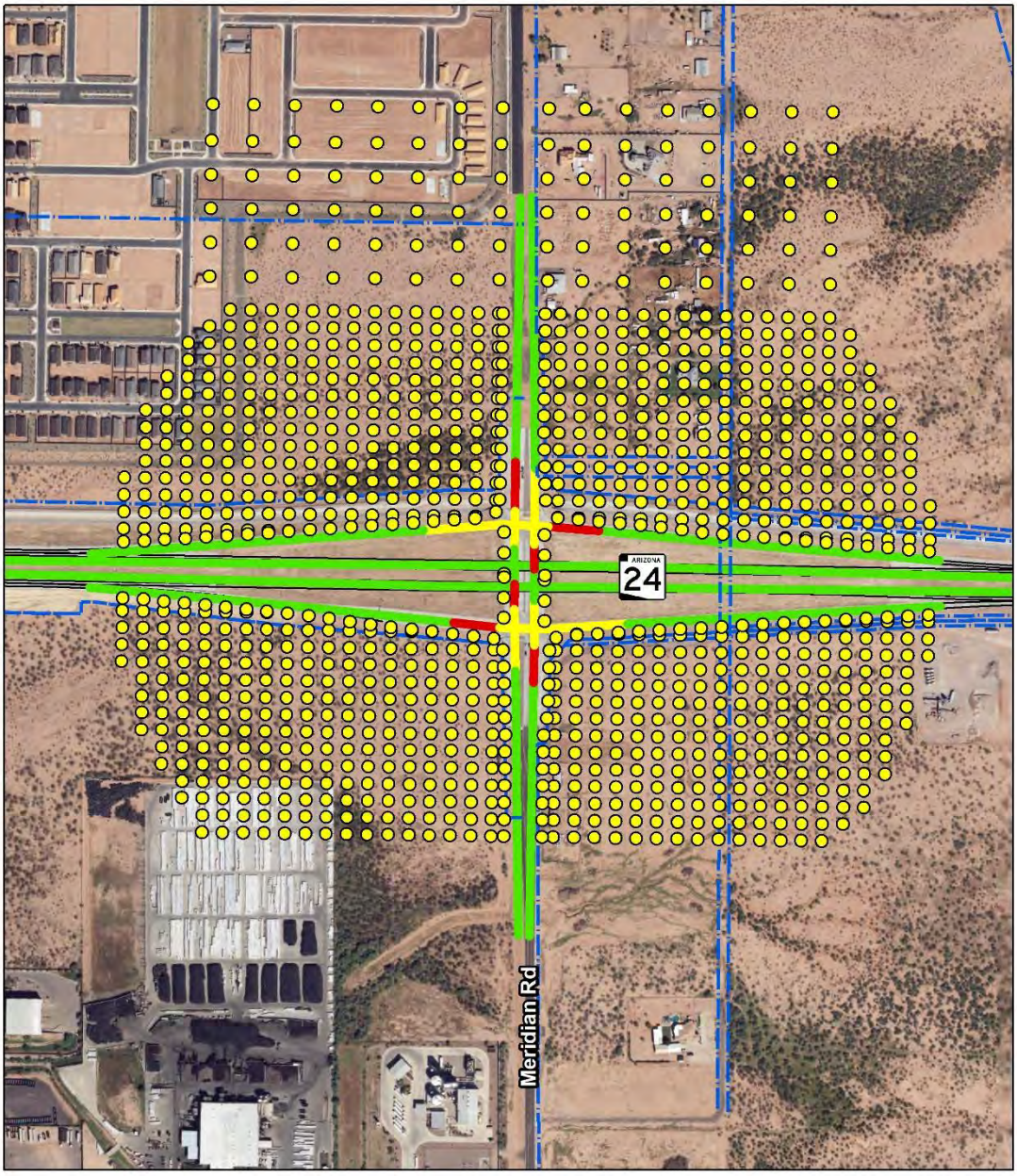


Figure 13. PM Receptors and Rodway Links (SR24 and Meridian Road intersections)



Estimate Dust and Other Emissions

Re-entrained road dust must be included in all PM_{10} 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 assumptions from the MAG Conformity Analysis for the analysis year 2050 were used for this PM hot-spot analysis, and the values are summarized in Table 9. Road dust emissions calculations were provided to EPA as part of the air quality conformity review process. The values in Table 4 came from MAG regional conformity data dated Fall, 2024.

Table 4
MAG Road Dust Emission Factors

Facility Type	W (tons)	sL (g/m^2)	E (g/VMT)
Freeway	4.27	0.02	0.124224
High Arterial	2.65	0.067	0.229887

Source: MAG Regional Conformity Data (Fall, 2024).
g/m^2 = 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. EPA guidance requires nearby sources of PM_{10} emissions to be included in air quality modeling when those sources are not appropriately reflected in the background data or would be affected by the project. No additional sources of PM_{10} emissions were identified that would increase as a result of the project. It is assumed that PM_{10} concentrations due to any other nearby emissions sources are included in the ambient monitor values used for background concentrations. In addition, this project is not expected to result in changes to emissions from nearby sources.

Set Up and Run Air Quality Model (AERMOD)

The EPA's AERMOD air dispersion model was used to estimate project operation PM_{10} concentrations. The model uses traffic, emission factor, and meteorological data to estimate ground-level concentrations of PM_{10} 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.

VOLUME sources were inputted to represent roadway links. Link-specific inputs included source location, source length and width, emission rate, release height, and plume height. AERMOD was run for five years of meteorological data based on current ADEQ Phoenix AERMET files for a 5-year period from 2017 through 2021.

Receptors were placed in order to estimate the highest concentrations of PM_{10}, to determine possible violations of the NAAQS. The highest PM_{10} concentrations are expected to occur near

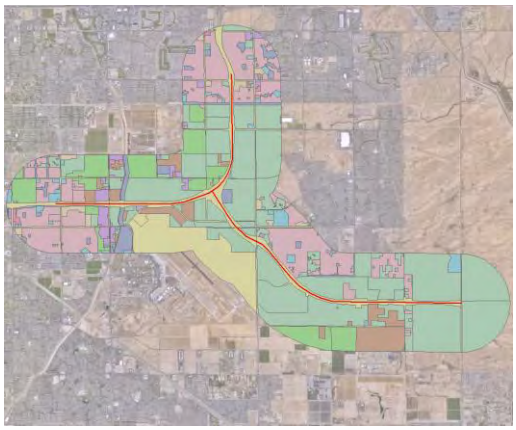
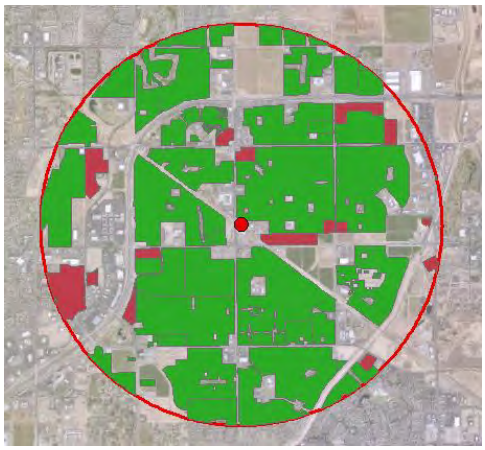
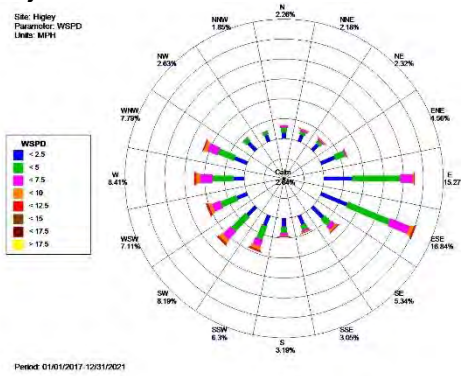
project's areas with the highest-volume roadways and near areas where vehicles are restarting and/or idling. Receptors were placed five meters from the roadways, at a height of 1.8 meters. Receptors were not placed in locations where the public does not have access, as described in the EPA guidance. Areas with no public access include medians, right-of-way access on highways and ramps, locations restricted by fencing, and locations with hazardous terrain. Aerial photos were used to determine locations unlikely to have pedestrian access due to fencing or hazardous terrain.

Determine Background Concentrations

The Higley monitor is the closest to the project area. Monitoring station information including land use percentage and wind rose data is shown in Table 5 below. Because Higley monitor is the closest PM station to the project and the project area land use characteristics would be similar to the station's land use when the project area is fully developed in the future, it was selected as the PM background monitor. This selected monitor was approved during the interagency consultation process. The 4th highest PM_{10} reading from 2022 through 2024 was identified for Higley monitor, after removing it for atypical events days, and then used as the projects PM background concentration. The 4^{th} highest monitor value over three years from 2022 to 2024 is 107 µg/m³ for Higley monitor, after removing atypical events data. Monitor site details, including a figure showing the distance from the project area to the monitor, are included in the materials in Appendix A. An Atypical Events Report was prepared for the justification of the removal for the four atypical event days for Higley during the proposed analysis time frame can be found in Appendix B.

Table 5
Higley PM Monitor

Project Area Characteristics and Parameters		Higley (HI) AQS ID: 04-013-4006 Address: 2207 S Higley Rd, Gilbert 4.5 miles to project
Collection frequency, completeness, and background concentration	N/A	Continuous monitoring overall PM data completeness is 97.1% in 2022 Number of complete monitoring days in 2022 to 2024: 1054 4th Highest 24-hour reading after removing atypical events: 107 µg/m3.

Land use/terrain	Density (developed area), emission sources (near the traffic interchange), land use (residential area [13%] & vacant and open space [44%] commercial [1%], office [1%], light industrial [3%], transportation [33%]), terrain (relative flat). When the project area is fully developed in the future, the land use will be similar to the monitor area. 	Density (developed area), emission sources (near the traffic interchange), land use (residential area [58%] & vacant and open space [12%] commercial [7%], terrain (relative flat). The Higley monitor is located in fringe area away from central Phoenix, characteristics similar to the project area. 
Wind patterns	N/A	show significant upwind patterns to the project area. 
Nearby sources:	No nearby sources other than roadways.	No nearby sources other than roadways.

The approved PM_{10} background value was added to the AERMOD modeled design values for comparison to the PM_{10} NAAQS of 150 $\mu g/m^3$. The background values are conservative, because it is expected that ambient PM_{10} concentrations will be lower in future years because of updated SIP's and a general trend of declining vehicle emissions due to technological advances. No obvious nearby sources of emissions other than roadways exist for the project. It is assumed that emissions from other nearby sources, if any, are already included from the ambient monitoring data.

Calculate Design Concentrations and Compare Build/No-Build Results

The model results were added to the PM_{10} background concentrations for the Build alternative to calculate the PM_{10} design values. To determine the 24-hour PM_{10} design value, the following steps were used, as outlined in the guidance:

- From the air quality modeling results from the build scenario, identify the sixth-highest 24-hour concentration for each receptor.
- Identify the receptor with the highest sixth-highest 24-hour concentration.
- Identify the appropriate 24-hour background concentration from the three most recent years of air quality monitoring data. This value is 107 µg/m^3, as described above.
- 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).
- Round to the nearest 10 µg/m^3. The result is the highest 24-hour PM_{10} design value in the build scenario. The final results are summarized in Table 6.

Consider Mitigation or Control Measures

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

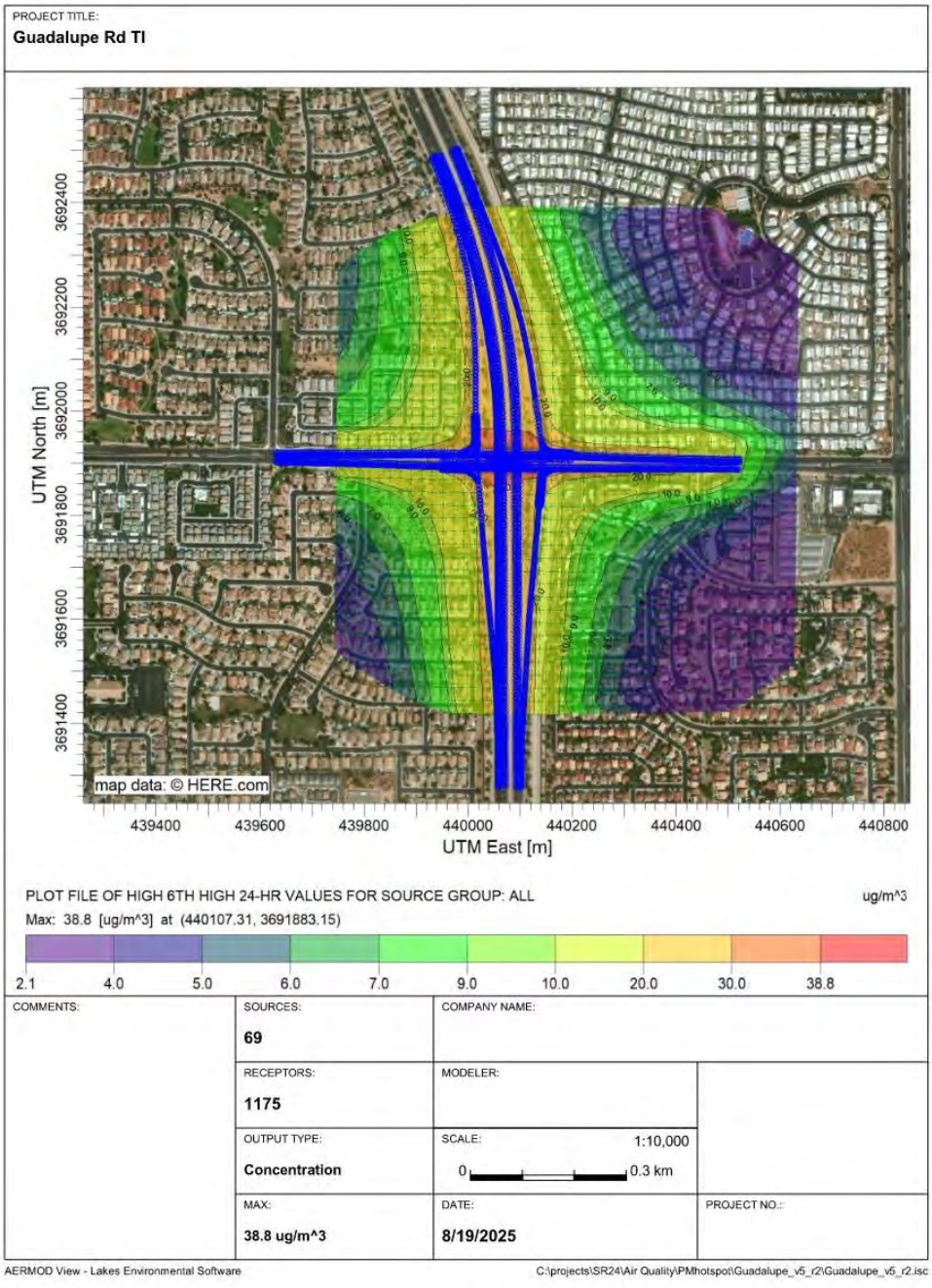
Document Analysis

This Air Quality Technical Report documents the PM hotspot results.

3.1.2 Results

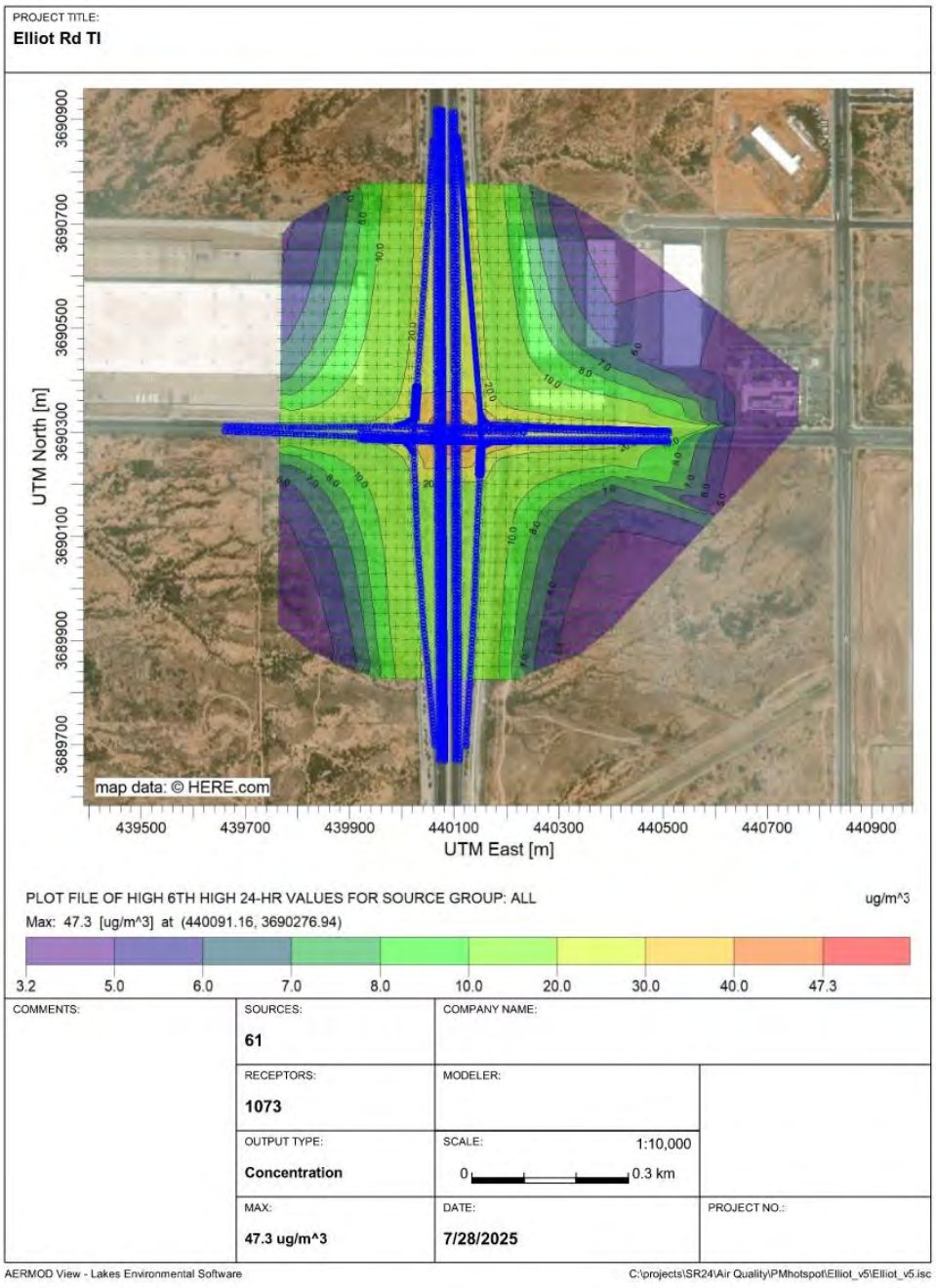
The modeled concentrations, including background concentrations, were compared to the applicable NAAQS. The receptor with the maximum 6th-highest concentration was located on cross street sidewalks over or under the freeway at the Guadalupe Road TI, Elliot Road TI, Power Road TI, Ellsworth Road TI, and Meridian Road TI. Figures 14 through Figure 19 show the receptor concentration contour maps for each analyzed TI.

Figure 14. SR202L and Guadalupe Road PM_{10} Model Results



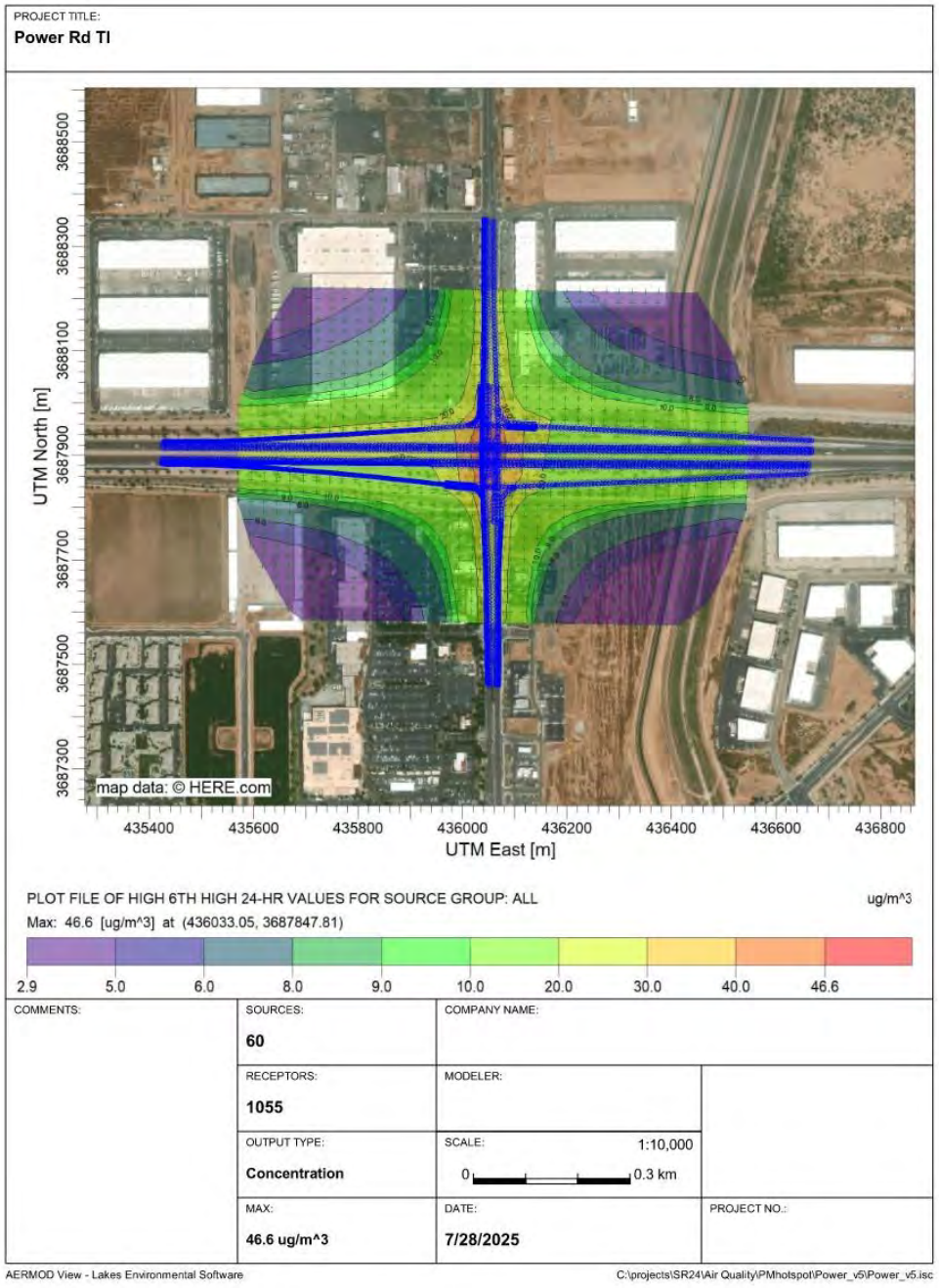
Note: Values shown are modeled 6th-high 24-hour concentrations of PM_{10}, prior to the addition of background concentration.

Figure 15. SR202L and Elliot Road PM_{10} Model Results



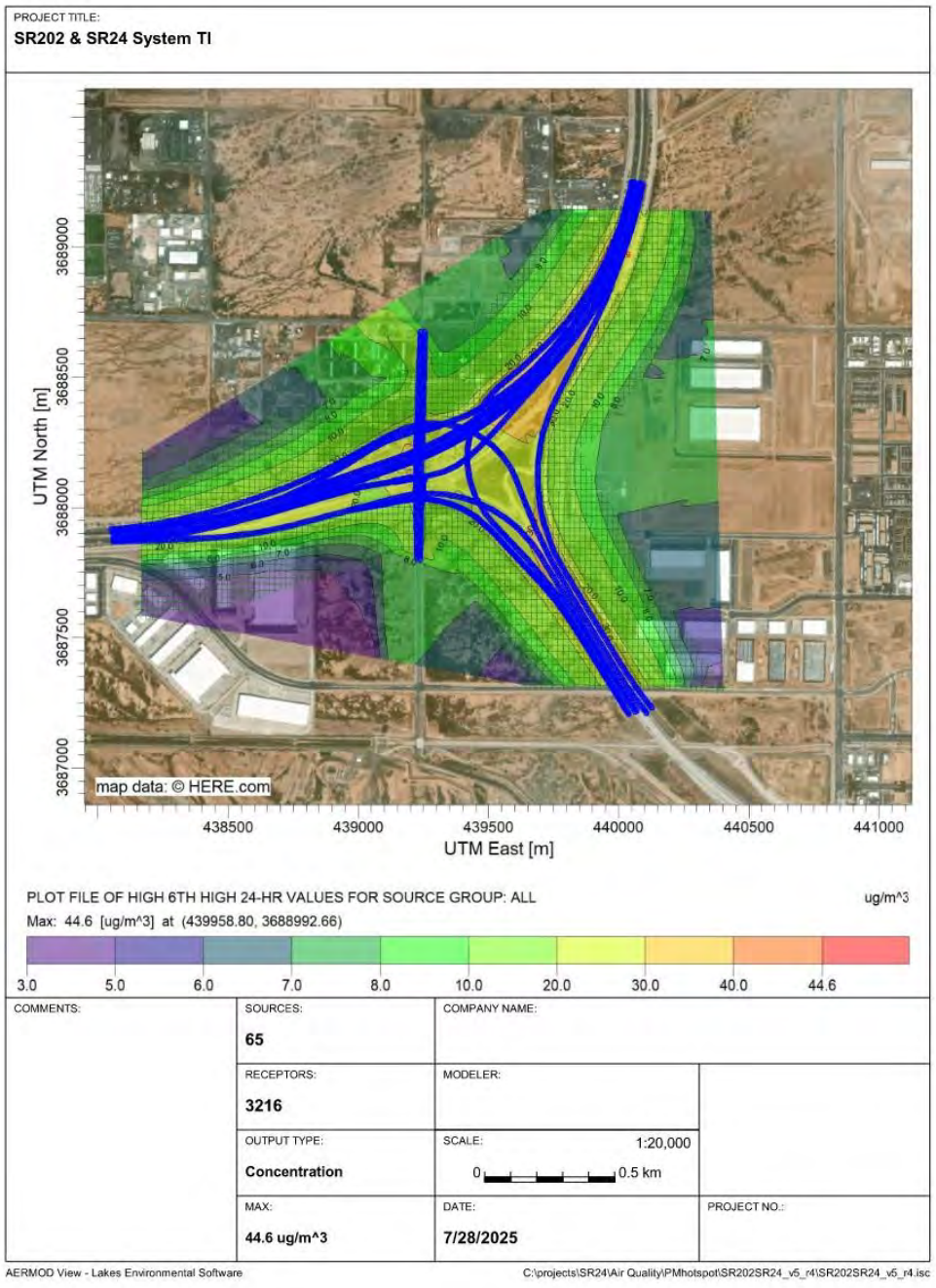
Note: Values shown are modeled 6th-high 24-hour concentrations of PM10, prior to the addition of background concentration.

Figure 16. SR202L and Power Road PM_{10} Model Results



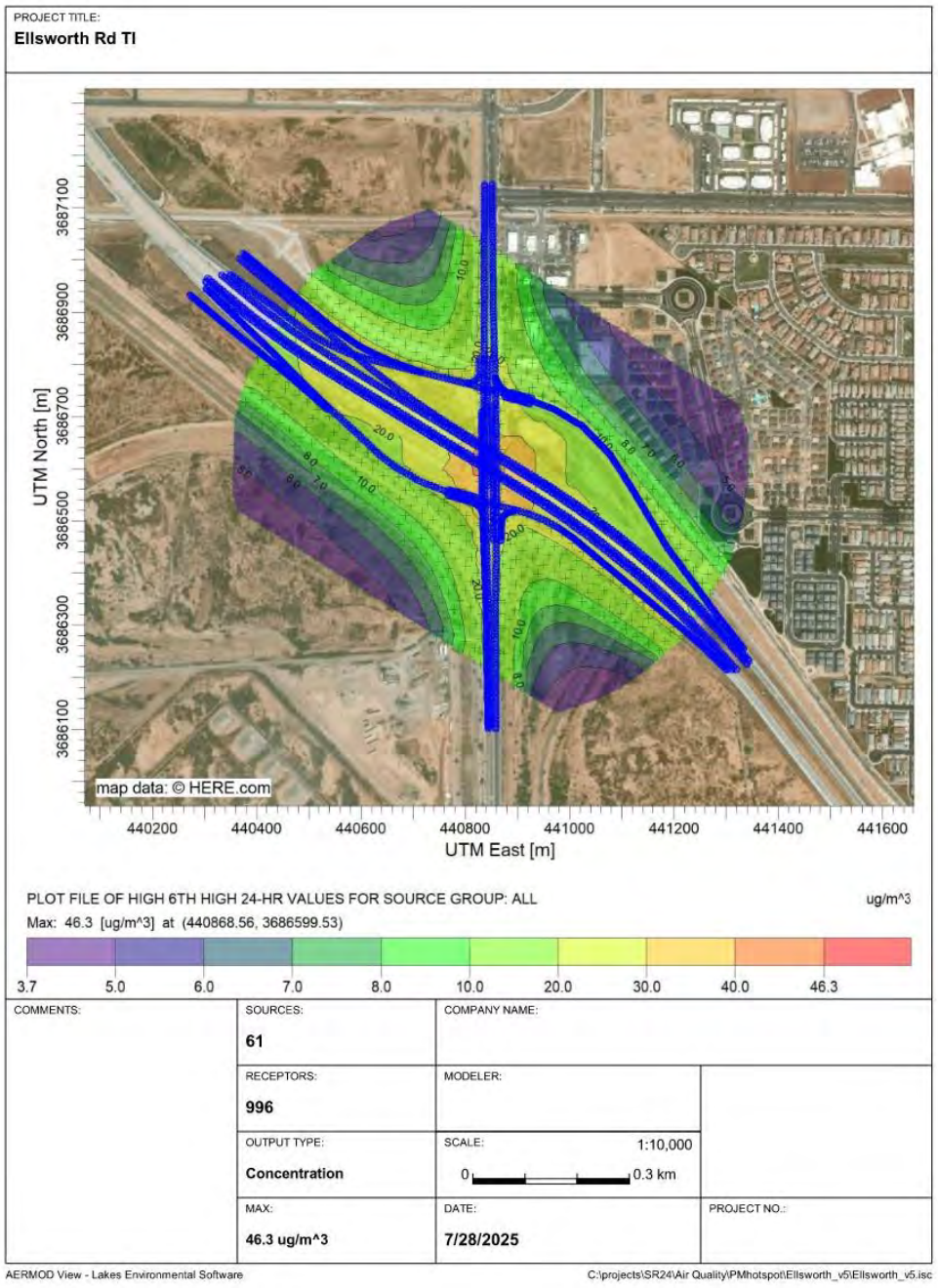
Note: Values shown are modeled 6th-high 24-hour concentrations of PM10, prior to the addition of background concentration.

Figure 17. SR202L and SR24 PM_{10} Model Results



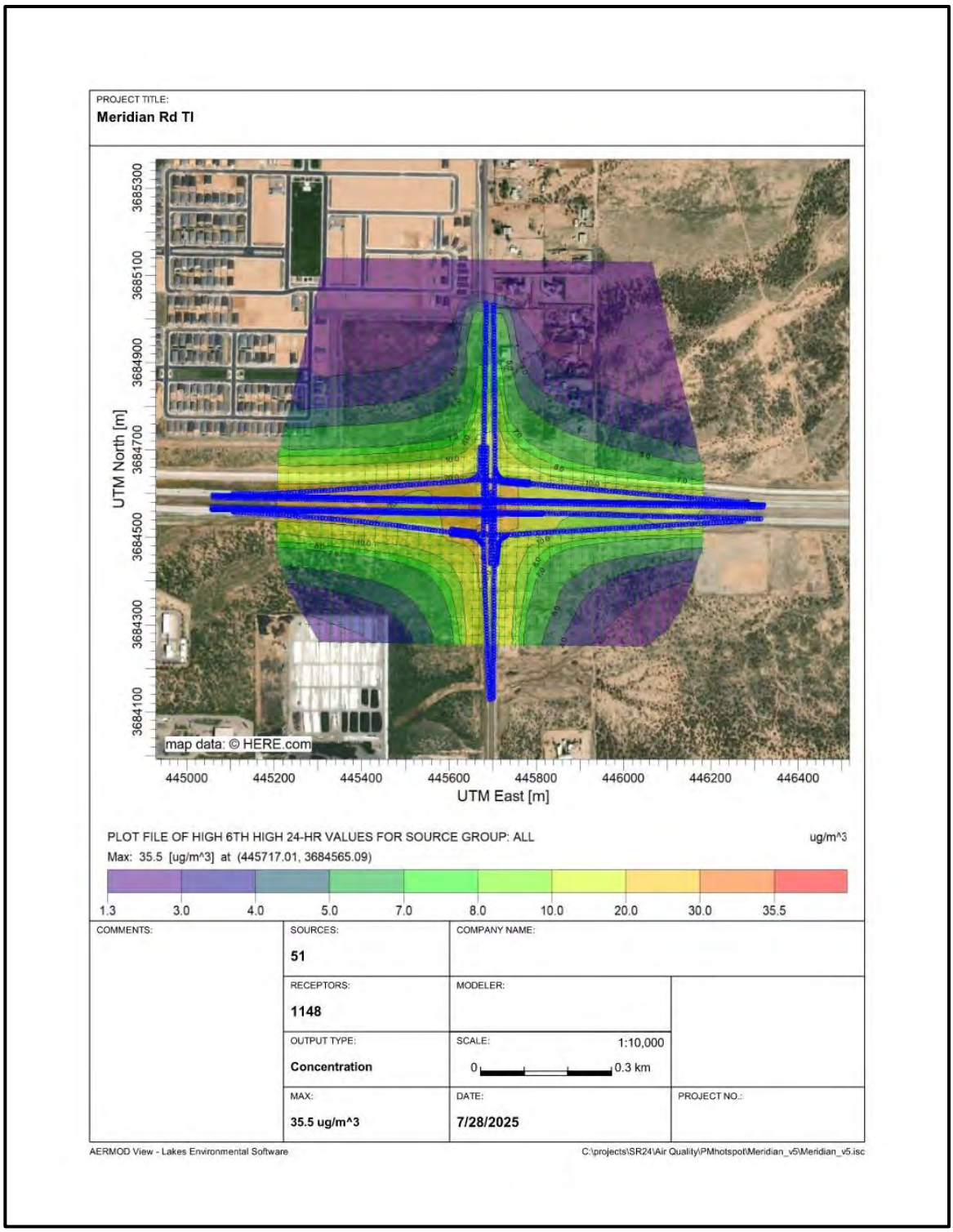
Note: Values shown are modeled 6th-high 24-hour concentrations of PM10, prior to the addition of background concentration.

Figure 18. SR24 and Ellsworth Road PM_{10} Model Results



Note: Values shown are modeled 6th-high 24-hour concentrations of PM10, prior to the addition of background concentration.

Figure 19. SR24 and Meridian Road PM_{10} Model Results



Note: Values shown are modeled 6th-high 24-hour concentrations of PM10, prior to the addition of background concentration.

The result is shown in Table 6 below. Output files exported from AERMOD for each model run indicated zero fatal errors.

Table 6
Predicted 24-Hour PM_{10} Concentration ($\mu g/m^3$)

Location	6th-Highest PM_{10} Value	Background PM_{10} Value	Total Concentration	Total Concentration Rounded to nearest 10 $\mu g/m^3$	PM_{10} NAAQS
SR202L & Guadalupe Road TI	38.8	107	145.8	150	150
SR202L & Elliot Road TI	47.3	107	154.3	150	150
SR202L & Power Road TI	46.6	107	153.6	150	150
SR202L & SR24 TI	44.6	107	151.6	150	150
SR24 & Ellsworth Road TI	46.3	107	153.3	150	150
SR24 & Meridian Road TI	35.5	107	142.5	140	150

$\mu g/m^3$ = micrograms per cubic meter

As shown in Table 6, total PM_{10} concentrations for the project's six selected TIs are below PM_{10} NAAQS. Therefore, the project meets conformity requirements and no project emission reduction mitigation or control measures need to be considered by project sponsors.

Due to the large volume of input and output files created for this project's PM hot spot analysis, data is available electronically upon request, as noted in Appendix D.

3.2 MSAT NEPA Analysis

3.2.1 Methodology

On February 3, 2006, FHWA released Interim Guidance on Air Toxic Analysis in NEPA Documents (FHWA 2006a). This guidance was superseded on October 18, 2016, by FHWA's Updated Interim Guidance Update on Air Toxic Analysis in NEPA Documents (FHWA 2016). On January 18, 2023, FHWA released Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents (FHWA 2023), which supersedes the October 2016 Interim guidance. The purpose of FHWA's guidance is to advise on when and how to analyze MSATs in the National Environmental Policy Act (NEPA) environmental review process for highways. This guidance is considered interim, since MSAT science is still evolving. As the science progresses, FHWA will update the guidance.

The FHWA has outlined a tiered approach for analyzing MSATs in NEPA documents, with three tiers representing the levels of potential impacts from projects.

Depending on specific project circumstances, the FHWA has identified three levels of analysis:

- No analysis for projects with no potential for meaningful MSAT effects;
- Qualitative analysis for projects with low potential MSAT effects; or
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

Based on FHWA's recommended tiering approach, the project falls within the Tier 3 approach (i.e., for projects with a high potential for MSAT effects). In accordance with FHWA's guidance, EPA's MOVES3 was used to calculate annual MSAT emissions for the No-Build Alternative and the Build Alternative.

Draft Guidance from the Council on Environmental Quality recommends that agencies quantify a proposed action's projected direct and reasonably foreseeable indirect GHG emissions when it is practicable to quantify them using available data and tools (CEQ 2019). Based upon consultation with FHWA, it was agreed upon that direct GHG emissions would be calculated using the MSAT study area and methodology. Indirect GHG emissions were not quantified.

3.2.2 Identify the Affected Transportation Network

The analysis began with a review of projected traffic volumes on arterial streets, and the I-10 freeway during existing 2025, 2050 No Build, and 2050 Build Conditions in areas where traffic volumes are expected to change as a result of the project. The MSAT Study Area was refined to focus on the portion of the Study Area substantially impacted by the project. FHWA recommends analyzing all segments associated with the project, plus those segments expecting meaningful changes in emissions because of the project (e.g., ±5 percent or more in AADT on congested highway links of level of service D or worse; ±10 percent or more in AADT on uncongested highway links of LOS C or better; ±10 percent or more in travel time; or ±10 percent or more in intersection delay). The Study Area was refined by conducting a comparison between the No Build and Build traffic volumes for all links in the regional model. Because intersection delay data is not available regional wide, this metric was not used. Using the recommendations described above, along with a level of judgment and local knowledge, a

roadway network within a defined boundary as shown in Figure 20 was developed. Buffer zones from 10 miles to 50 miles for MSAT outside of project boundary were evaluated. A 20-mile buffer zone was used for MSAT boundary because it covers the traffic influences area of the project, which is in the southeast region of the valley. 10-mile buffer zone is small for MSAT analysis because there are many continuous affected MSAT links outside of 10-mile buffer zone. For buffer zone larger than 20-miles, such as 30-mile – 50-mile buffer zones, they are too big, and many affected MSAT links in those area have no direct connections with the project areas (not a real effect, they are considered modeling artifact), also it is not likely that roadway in the downtown area would be affected by the project.

3.2.3 Compile Project-specific Traffic Data

A spreadsheet was created using traffic data supplied by Maricopa Association of Governments (MAG) for the areas of interest. The spreadsheet contained 2025 and 2050 traffic information within the MSAT study area. Each segment of the network was given a unique number and is identified by facility type, length, link hourly capacity, link hourly volumes, peak hour AM and PM volumes, ADT volumes, and average speeds. Local streets and neighborhood streets were not included in the spreadsheet. The number of links developed for the No Build/Build Conditions in 2050 was approximately 2942. Project-specific traffic data were compiled from the affected transportation network as input files to the emission model. Average speed distribution was summarized according to categories of source type, road type, and hour-day. Annual VMT was entered for each HPMS vehicle class. VMT fraction was calculated based on each road type by a source type.

3.2.4 MOVES3

EPA's Motor Vehicle Emissions Simulator (MOVES) model version MOVES3 was used to estimate emissions from the MSAT network. MOVES input files were provided by MAG, consistent with their regional emissions analysis. MAG data were used to represent regional conditions, and link-by-link traffic data was used to develop project-specific input files to demonstrate the effects of the project for each scenario analyzed: 2025, 2050 No Build, and 2050 Build. Specific MOVES inputs are described in Table 7 and Table 8.

Figure 20. Roadway Network Used to Calculate Total MSAT & GHG Emissions

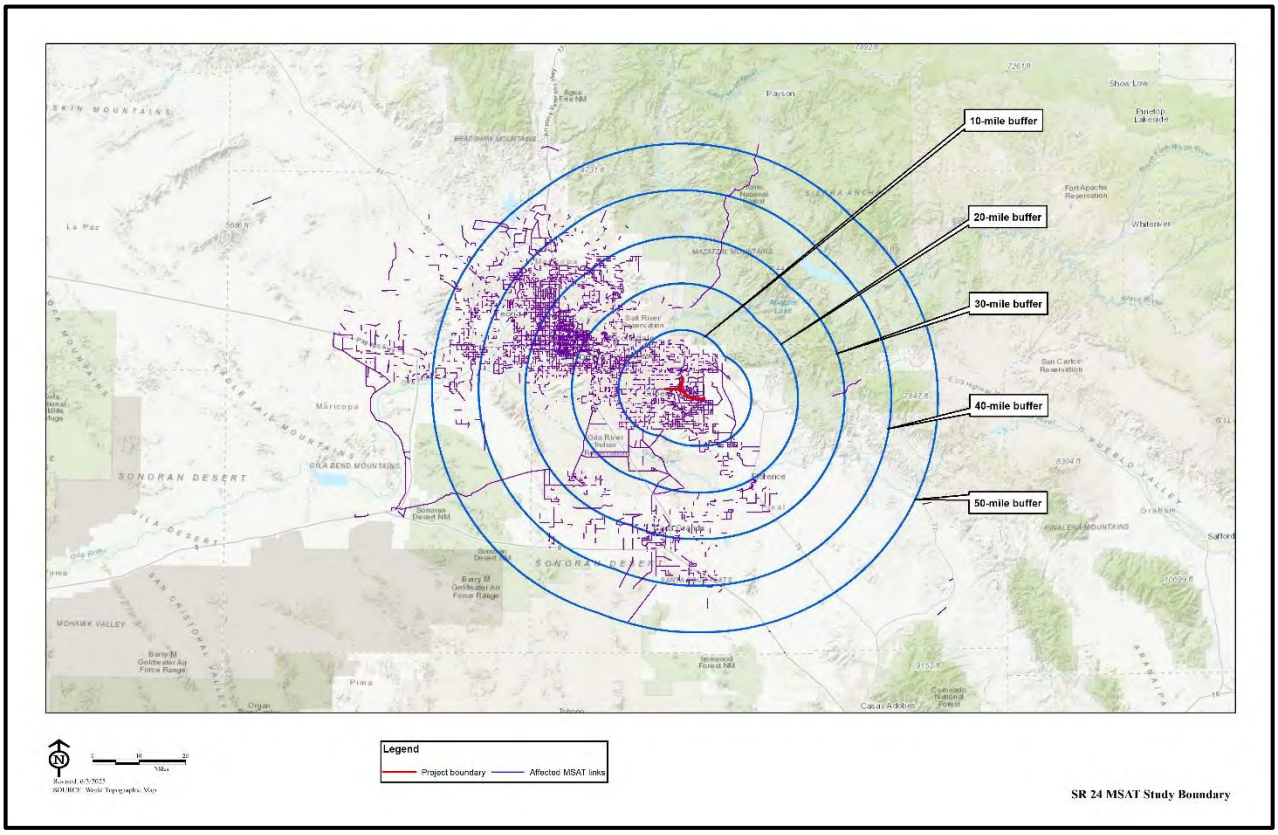


Table 7 MOVES RunSpec Options	
MOVES Tab	Model Selections
Scale	County scale Inventory calculation type
Time Span	Hourly time aggregation including all months, days, and hours
Geographic Bounds	Maricopa County
Vehicles/Equipment	All on-road vehicle and fuel type combinations
Road Type	All road types in affected transportation network; not “off-network”
Pollutants and Processes	All MSAT pollutants and their precursors were selected processes included running exhaust and crankcase running exhaust
Output	Output was produced by fuel type to differentiate diesel PM from PM produced by other fuel types

Table 8 MOVES County Data Manager Inputs	
County Data Manager Tab	Data Source
Source Type Population	MAG
Age Distribution	MAG
I/M Programs	Not used
VMT Fraction	MOVES default
Fuel	MOVES default
Meteorology Data	MOVES default
Vehicle Type VMT	Created from project daily traffic data
Average Speed Distribution	Created from project daily traffic data
Road Type Distribution	Created from project daily traffic data

MOVES model was used to estimate the total emissions from the MSAT network for each scenario. The VMT and emissions of each MSAT pollutant were presented in a table and compared with the existing and no build scenarios. MSAT burdens were calculated for the following MSATs, as required by FHWA:

- 1,3 Butadiene
- Acetaldehyde
- Acrolein
- Benzene
- Diesel PM
- Ethylbenzene
- Formaldehyde
- Naphthalene
- Polycyclic Organic Matter (POM)

3.2.5 MSAT Results

The results of MSAT analysis for the existing conditions, 2050 No Build, and 2050 Build are shown in Table 9. As shown in Table 9, even if VMT increases by 73 percent in 2050 Build condition compared to that in 2025, a combined reduction of 48 percent in the total annual emissions for the priority MSAT is projected for the same time period. This is in consistency with the FHWA predicted national MSAT trends. When comparing 2050 Build MSAT burden to 2050 No-Build, the total MSATs would decrease slightly, by approximately 3% because of decreased VMT within the MSAT study area.

Table 9 Predicted MSAT Emission Burdens (tons/year)						
Pollutant	Existing 2025	2050 No-Build		2050 Build		
		Value	% Change from Existing	Value	% Change from Existing	% Change from No-Build
MSAT Study Area Annual VMT	1,892,983,509	3,271,985,600	73%	3,180,419,047	68%	-3%
1,3-Butadiene	0.114	0.000	-100%	0.000	-100%	0%
Acetaldehyde	1.050	0.882	-16%	0.787	-25%	-11%

Acrolein	0.092	0.045	-52%	0.040	-56%	-10%
Benzene	1.825	1.037	-43%	0.963	-47%	-7%
Diesel Particulate Matter	4.614	2.340	-49%	2.108	-54%	-10%
Ethylbenzene	0.871	0.462	-47%	0.425	-51%	-8%
Formaldehyde	1.611	1.050	-35%	0.946	-41%	-10%
Naphthalene	0.000	0.000	-44%	0.000	-47%	-5%
Polycyclic Organic Matter	0.015	0.006	-59%	0.006	-62%	-5%
Total MSATs	10.192	5.822	-43%	5.275	-48%	-9%

In summary, it is projected that there would be slightly 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 the VMT changes associated with the project. MSAT levels could be higher in some locations than others, such as adjacent to the SR202L or SR24 mainline, but current tools and science are not adequate to quantify them.

This document has provided a quantitative analysis of MSAT emissions relative to the proposed project and has acknowledged that the alternatives could increase exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain. However, available technical tools do not enable prediction of project-specific health impacts of the emission changes associated with the alternatives. Because of these limitations, the following discussion is included in accordance with the President's Council on Environmental Quality (CEQ) regulations (40 CFR 1502.22[b]) regarding incomplete or unavailable information.

3.2.6 Incomplete or Unavailable Information for Project 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 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 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 CAA 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 effect" (EPA, http://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). Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update 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, http://pubs.healtheffects.org/view.php?id=282) or in the future as vehicle emissions substantially decrease (HEI, http://pubs.healtheffects.org/view.php?id=306).

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 (http://pubs.healtheffects.org/view.php?id=282). 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 (http://www.epa.gov/risk/basicinformation.htm#g) and the HEI (http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

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 CAA 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 a 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.

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 weight this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities, in addition to improved access for emergency response, that are better suited for a quantitative analysis.

3.3 GHG NEPA Analysis

Global Climate Change (GCC) refers to changes in average climatic conditions on earth as a whole, including temperature, wind patterns, precipitation and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), which are known as greenhouse gases (GHGs). These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiant heat from escaping, thus warming the Earth's atmosphere. Gases that trap heat in the atmosphere are often called greenhouse gases, analogous to a greenhouse. GHGs are emitted by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the Earth's temperature. Without these natural GHGs, the Earth's temperature would be about 61º Fahrenheit cooler. Emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere.

GHGs have been at the center of a widely contested political, economic, and scientific debate surrounding GCC. Although the conceptual existence of GCC is generally accepted, the extent to which GHGs contribute to it remains a source of debate. GCC refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. GCC may result from natural factors, natural processes, and/or human activities that change the composition of the atmosphere and alter the surface and features of land.

To date, no national standards have been established regarding GHGs, nor has EPA established criteria or thresholds for ambient GHG emissions pursuant to its authority to establish motor vehicle emission standards for CO_2 under the CAA. However, there is a considerable body of scientific literature addressing the sources of GHG emissions and their adverse effects on climate, including reports from the Intergovernmental Panel on Climate Change, the U.S. National Academy of Sciences, EPA, and other federal agencies. GHGs are different than other air pollutants evaluated in federal environmental reviews because their impacts are not localized or regional due to their rapid dispersion into the global atmosphere. The affected environmental for CO_2 and other GHG emissions is the entire planet. In addition, from a quantitative perspective, global climate change is the cumulative result of numerous and varied emissions sources (in terms of both absolute numbers and types), each of which makes a relatively small addition to global atmospheric GHG concentrations. In contrast to broad-scale actions such as those involving an entire industrial sector or very large geographic areas, it is difficult to isolate and understand the GHG emissions' impacts for a particular transportation project. Furthermore,

presently there is no scientific methodology for attributing specific climatological changes to a particular transportation project's emissions.

The results of GHG analysis for the existing conditions, 2050 No Build, and 2050 Build are shown in Table 10. As shown, in 2050 No Build and Build conditions, GHG emission burdens would be greater compared to Existing GHG burdens because of increased VMT. Build GHG burdens would be approximately slightly less than No Build burdens in the year 2050 because of decreased VMT in the GHG study area.

Table 10
Predicted GHG Emission Burdens (metric tons/year)

Pollutant	Existing 2025	2050 No-Build		2050 Build		
		Value	% Change from Existing	Value	% Change from Existing	% Change from No-Build
GHG Study Area Annual VMT	1,892,983,509	3,271,985,600	73%	3,180,419,047	68%	-3%
CO_{2e}	727,786	1,064,780	46%	1,005,460	38%	-6%

4 CONFORMITY

Section 176c of the CAA requires that transportation projects conform to the approved air quality State Implementation Plan 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. The project is within the Phoenix PM_{10} and Ozone nonattainment area. The proposed project is included in the *Maricopa Association of Governments (MAG) MOMENTUM 2050* Regional Transportation Plan and the FY 2025-2030 Transportation Improvement Program as approved by MAG Regional Council on January 22, 2025.

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Appendix A

INTERAGENCY CONSULTATION DOCUMENTATION

Arizona Department of Transportation
Environmental Planning

Project Level Particulate Matter (PM10) Consultation Document

SR24
SR202L (Santan) – Ironwood

Project No. 024 MA 000 F0719 01D

August 4, 2025

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.

F0719 Project Level PM Quantitative Hot-Spot Analysis – Project of Air Quality Concern Questionnaire

Project Setting and Description

The Arizona Department of Transportation (ADOT) has initiated a project to construct improvements to State Route (SR) 24 between SR Loop 202 (SR 202L) and Ironwood Drive. The project is located on SR 24 between milepost (MP) 0.00 and MP 5.64 and SR 202L between MP 31.57 to MP 37.70 within the City of Mesa, Town of Queen Creek, Town of Gilbert, and unincorporated areas in Maricopa County and Pinal County, Arizona (see enclosed Figure 1).

In 2014 the initial segment of SR 24 between SR 202L and Ellsworth Road was opened to traffic. In 2023 the second segment of SR 24 between Ellsworth Road and Ironwood Drive was completed in an interim condition. The purpose of the project is to widen SR 24 to accommodate two additional general-purpose lanes between Ellsworth Road and Ironwood Drive, resulting in three new bridges over existing crossroads at Williams Field, Signal Butte, and Meridian Road and widening the existing SR 24 bridge over Mountain Road. Roadway and bridge widening over Power Road and the East Maricopa Floodway is proposed along SR 202L to provide lane continuity and additional traffic capacity to and from the SR 24/SR 202L system traffic interchange (TI). The need for the project is to construct improvements to accommodate increased traffic demand.

The scope of work for the project consists of:

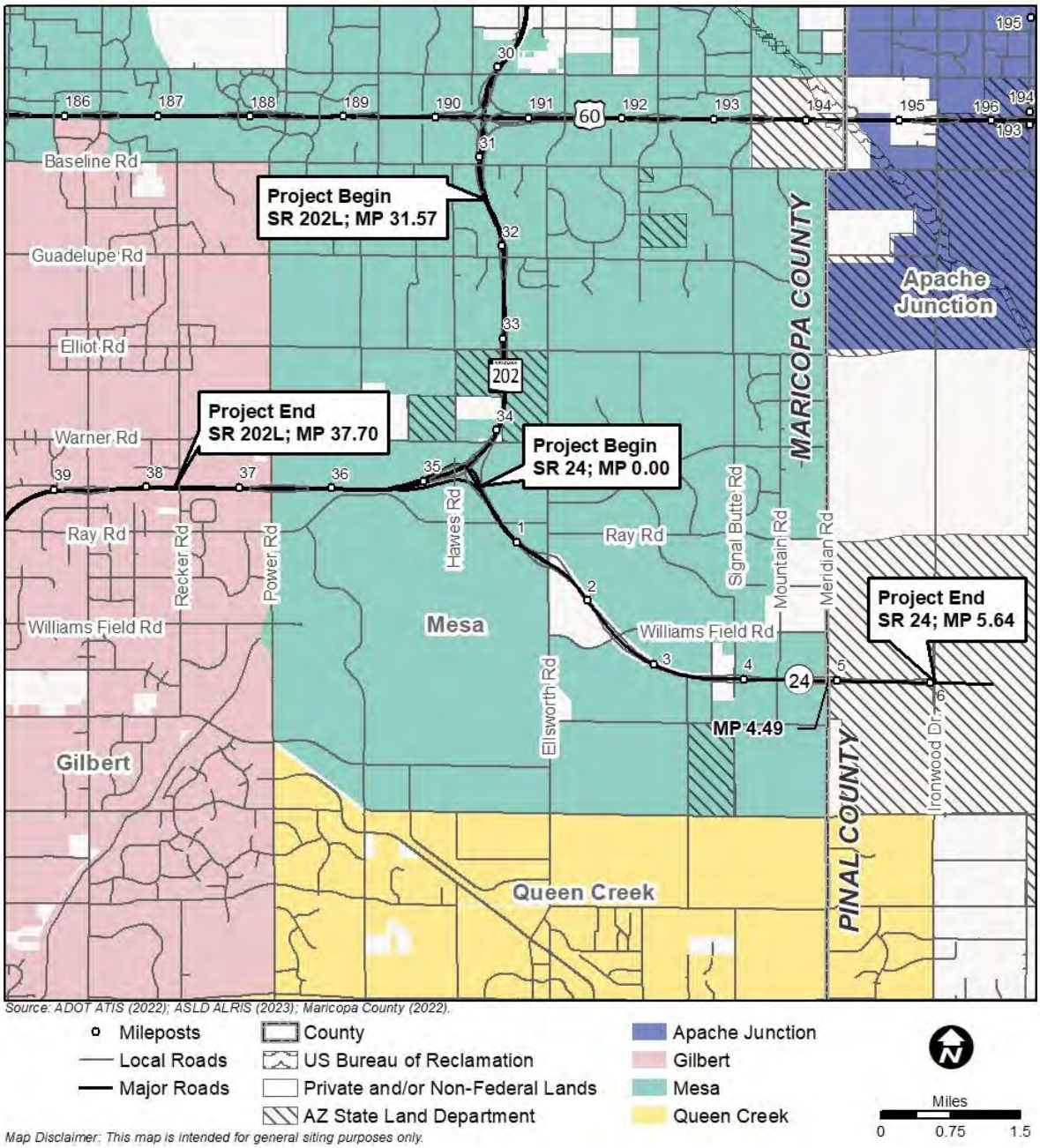
- Adding two additional travel lanes on SR 24 in each direction between Ellsworth Road and Ironwood Drive (3+ auxiliary)
- Adding new three-lane approaches and traffic interchange overpass structures (TIOP) at Williams Field Road, Signal Butte Road, and Meridian Road
- Widening the existing grade separated structures at Mountain Road
- A new four-lane bridge over SR 24 along the Crismon Road alignment
- Adding ramp connector roads between SR 202L and the Ellsworth Road intersection including structures over Ray and Hawes Road, a service ramp, and the Powerline Floodway
- Restriping portions of the directional system TI ramps from one lane to two lanes
- Adding an outside general purpose travel lane on the northbound SR 202L between SR 24 and Guadalupe Road
- Reconstructing NB SR 202L exit and entrance ramps at the Elliott Road TI and the exit ramp at Guadalupe Road TI
- Modifying existing on-site roadway drainage system to accommodate additional lanes
- Installing and upgrading signing and pavement markings
- Installing ITS/FMS, traffic signals, and lighting
- Placing seeding on SR 24
- Restoring landscaping and irrigation on SR 202L
- Upgrading sidewalks and ramps to be ADA compliant on Ellsworth Road
- Removing existing SR 202L AR-ACFC and resurfacing by diamond grinding the roadway surface on both directions between Recker Road to Guadalupe Road
- Widening WB SR 202L from the Power Road WB exit ramp to Recker Road including both Power Road ramps
- Widening EB SR 202L between the Power Road entrance and exit ramps including both Power Road ramps

- Widening the existing SR 202L structures over Power Road and the Eastern Maricopa Floodway
- Replacing deck joints on existing SR 202L structures within the project limits
- Constructing new retaining and sound walls and screen walls if needed
- Conducting geotechnical investigations consisting of structure and roadway borings
- Replacing sign panels and removing sign lighting at three SB SR 202L locations north of Guadalupe Rd
- Reconstructing the existing half-diamond intersection of SR 24 at Ironwood Drive to a half diverging diamond intersection (DDI)
- Repairing a pavement crack on the system TI NW Ramp

Permanent project improvements would occur within the existing ADOT right-of-way (ROW). New ROW is not anticipated. Temporary construction easements are anticipated to construct sound walls along the existing ROW. Wall agreements between ADOT and adjacent landowners for maintenance purposes are anticipated. Construction is anticipated to begin in Fall 2026, and is expected to take approximately 28 months. Traffic restrictions are anticipated during construction with temporary advanced-warning signs extending approximately 1-mile in advance of the work limits. Night work and temporary lane closures along the SR 24 and SR 202L mainline, ramps, and crossroads will be required during construction. Lane closures will occur during off-peak travel times with the existing number of lanes maintained at all other times. Formal detour routes on local streets will not be designated during construction. Traffic delays should be expected during construction efforts.

These projects are within the Phoenix PM10 nonattainment area. The proposed project is included in the *Maricopa Association of Governments (MAG) Regional Transportation Plan (RTP) MOMENTUM 2050*. In addition, the combined project is included in the *FY 2022-2025 MAG Transportation Improvement Program*.

Figure 1. Project Vincinity Map



Project Assessment

The following questionnaire is used to compare the proposed project to a list of project types in 40 CFR 93.123(b) requiring a quantitative analysis of local particulate emissions (Hot-spots) in nonattainment or maintenance areas, which include:

i) New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles;
ii) Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of an increase in traffic volumes from a significant number of diesel vehicles related to the project;
iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and
v) Projects in or affecting locations, areas, or categories of sites which are identified in the PM_{10} or $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

If the project matches one of the listed project types in 40 CFR 123(b)(1) above, it is considered a project of local air quality concern and the hot-spot demonstration must be based on quantitative analysis methods in accordance to 40 CFR 93.116(a) and the consultation requirements of 40 CFR 93.105(c)(1)(i). If the project does not require a PM hot- spot analysis, a qualitative assessment will be developed that demonstrates that the project will not contribute to any new localized violations, increase the frequency of severity of any existing violations, or delay the timely attainment of any NAAQS or any required emission reductions or milestones in any nonattainment or maintenance area.

On March 10, 2006, EPA published *PM2.5 and PM10 Hot-Spot Analyses in Project-Level Transportation Conformity Determinations for the New PM2.5 and Existing PM10 National Ambient Air Quality Standards; Final Rule* describing the types of projects that would be considered a project of air quality concern and that require a hot-spot analysis (71 FR 12468- 12511). Specifically on page 12491, EPA provides the following clarification: "Some examples of *projects of air quality concern* that would be covered by § 93.123(b)(1)(i) and (ii) are: A project on a new highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than 125,000 annual average daily traffic (AADT) and 8% or more of such AADT is diesel truck traffic;" .." Expansion of an existing highway or other facility that affects a congested intersection (operated at Level-of-Service D, E, or F) that has a significant increase in the number of diesel trucks;" These examples will be used as the baseline for determining if the project is a project of air quality concern.

New Highway Capacity

Is this a new highway project that has a significant number of diesel vehicles? *Example: total traffic volumes ≥125,000 annual average daily traffic (AADT) and truck volumes ≥10,000 diesel trucks per day (8% of total traffic).*

NO – This project is not a new highway project that has a significant number of diesel vehicles.

Expanded Highway Capacity

Is this an expanded highway projects that have a significant increase in the number of diesel vehicles? *Example: the build scenario of the expanded highway or expressway causes a significant increase in the number of diesel trucks compared with the no-build scenario, truck volumes > 8% of the total traffic.*

YES – This project is an expanded highway project that has a significant number of diesel vehicles. The AADT and truck percentage for the Build alternative were compared to the No Build alternative on roadway segments and intersections along the project corridor for SR24 project, as summarized in Tables 1 and 2 below. As can be seen in Table 1, total truck AADT would be 3,965 to 17,875 on SR202 segments and 3,564 to 12,756 on SR24 segments in 2050 Build alternative, and truck AADT would increase -699 to 8,248 vehicles on SR202 segments and 3,564 to 12,317 on SR24 segments in 2050 Build alternative, compared to the No-Build alternative. As shown in Table 2, total truck AADT at intersections would be 645 to 3,205 vehicles in 2050 Build alternative, and truck ADT would increase -1,522 to 531 vehicles at 18 intersections.

Table 1 – Roadway Annual Average Daily Traffic and Truck Volumes

Segment	2024 Existing Alternative				2050 No-Build Alternative				2050 Build Alternative				Total Truck AADT Difference (Build - No-Build)
	AADT	Total Truck AADT	MT AADT	HT AADT	AADT	Total Truck AADT	MT AADT	HT AADT	AADT	Total Truck AADT	MT AADT	HT AADT	
SR 202L (W of Power)	62,542	5,551	4,736	815	96,645	10,085	7,980	2,105	111,251	11,258	9,399	1,859	1,173
SR 202L (Between Power Ramps)	48,452	4,227	3,626	601	77,275	8,085	6,384	1,701	89,862	9,027	7,576	1,451	942
SR 202L (Power Ramp to SR 24 Ramp)	64,209	5,003	4,335	668	102,707	8,999	7,199	1,800	116,840	10,105	8,493	1,612	1,106
SR 202L (SR 24 Ramp to Hawes Ramp)	43,358	3,385	2,949	436	66,698	5,518	4,501	1,017	61,797	4,819	4,122	697	-699
SR 202L (Between Hawes Ramps)	41,176	3,160	2,741	419	55,396	4,658	3,805	853	51,329	3,965	3,416	549	-693
SR 202L (Hawes Ramp to SR 24 Ramp)	45,764	3,635	3,152	483	67,853	5,911	4,887	1,024	57,633	5,414	4,218	1,196	-497
SR 202L (SR 24 Ramp to Elliott Ramp)	101,700	8,842	7,702	1,140	139,389	12,930	10,824	2,106	162,557	15,744	13,322	2,422	2,814
SR 202L (Between Elliott Ramps)	93,334	8,182	7,116	1,066	124,356	12,126	10,221	1,905	147,641	15,032	12,732	2,300	2,906
SR 202L (Elliott Ramp to Guadalupe Ramp)	112,900	9,872	8,639	1,233	150,532	14,240	11,959	2,281	172,838	17,087	14,449	2,638	2,847
SR 202L (Between Guadalupe Ramp)	62,933	5,507	4,822	685	90,134	8,077	6,693	1,384	161,018	16,325	13,779	2,546	8,248
SR 202L (N of Guadalupe)	116,910	10,507	9,221	1,286	161,843	15,279	12,672	2,607	182,592	17,875	14,904	2,971	2,596
SR 24 (Between Ellsworth Ramps)	---	---	---	---	---	---	---	---	115,568	12,317	10,226	2,091	12,317
SR 24 (Ellsworth to Williams Field)	38,562	3,820	3,295	525	57,094	6,580	5,282	1,298	126,978	12,756	10,592	2,164	6,176
SR 24 (Between Williams Field Ramps)	---	---	---	---	---	---	---	---	104,944	10,458	8,567	1,891	10,458
SR 24 (Williams Field to Signal Butte)	34,794	3,310	2,813	497	46,582	5,423	4,302	1,121	111,698	10,820	8,861	1,959	5,397
SR 24 (Between Signal Butte Ramps)	---	---	---	---	---	---	---	---	97,804	8,733	7,216	1,517	8,733
SR 24 (Signal Butte to Meridian)	21,960	1,381	1,185	196	37,252	3,523	2,809	714	107,101	8,726	7,176	1,550	5,203
SR 24 (Between Meridian Ramps)	---	---	---	---	---	---	---	---	75,414	6,312	5,089	1,223	6,312
SR 24 (Meridian to Ironwood)	18,174	1,112	961	151	35,100	2,716	2,146	570	79,270	6,534	5,239	1,295	3,818
SR 24 (E of Ironwood Off-Ramp)	---	---	---	---	---	---	---	---	39,725	3,564	2,884	680	3,564
Ramp N-E (WB SR 24 to NB SR 202L)	28,098	2,662	2,308	354	35,817	3,600	3,022	578	47,675	5,098	4,263	835	1,498
Ramp N-W (WB SR 24 to WB SR 202L)	11,275	900	778	122	18,707	1,798	1,398	400	27,450	2,742	2,278	464	944
Ramp W-S (SB SR 202L to EB SR 24)	27,838	2,545	2,243	302	35,719	3,420	2,916	504	45,646	4,797	4,038	759	1,377
Ramp E-S (EB SR 202L to EB SR 24)	9,574	717	608	109	17,302	1,684	1,300	384	27,593	2,545	2,092	453	861

Notes: AADT – Annual average daily traffic
MT – Medium Trucks (vehicles with 2 axles & 6 wheels; gross vehicle weight – 10,000 to 26,400 pounds).
HT – Heavy Trucks (vehicles with 3 or more axles; gross vehicle weight greater than 26,400 pounds).

Source: Traffic data provided by Stanley Consultants on February 22, 2025.

Table 2 – SR202 and SR24 Intersection AADT & Truck Volumes

Intersection	Veh Class	2050 No-Build Alternative					2050 Build Alternative					Difference (Build - No-Build)
		EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	
Power Road and EB SR 202L	Total AADT	9,768		24,903	24,810	59,481	9,768		24,903	24,810	59,481	0
	MT AADT	264		672	670	1,606	264		672	670	1,606	0
	HT AADT	88		224	223	535	88		224	223	535	0
Power Road and WB SR 202L	Total AADT		13,150	22,156	24,592	59,898		13,150	22,156	24,592	59,898	0
	MT AADT		434	731	812	1,977		434	731	812	1,977	0
	HT AADT		158	266	295	719		158	266	295	719	0
Hawes Road and EB SR 202L	Total AADT	5,535		8,751	11,139	25,425	7,033		11,119	14,153	32,306	6,881
	MT AADT	161		254	323	737	204		322	410	937	200
	HT AADT	89		140	178	407	113		178	226	517	110
Hawes Road and WB SR 202L	Total AADT		7,927	8,968	4,467	21,362		10,111	11,439	5,698	27,248	5,885
	MT AADT		277	314	156	748		354	400	199	954	206
	HT AADT		135	152	76	363		172	194	97	463	100
Elliot Road and NB SR202L	Total AADT	20,216	20,832	7,821		48,869	20,324	20,943	7,863		49,130	261
	MT AADT	708	729	274		1,710	711	733	275		1,720	9
	HT AADT	323	333	125		782	325	335	126		786	4
Elliot Road and SB SR202L	Total AADT	8,635	12,523		13,992	35,151	8,732	12,663		14,149	35,543	393
	MT AADT	440	639		714	1,793	445	646		722	1,813	20
	HT AADT	173	250		280	703	175	253		283	711	8
Guadalupe Road and NB SR 202L	Total AADT	18,296	21,860	6,248	0	46,404	18,296	21,860	6,248		46,404	0
	MT AADT	238	284	81	0	603	238	284	81		603	0
	HT AADT	55	66	19	0	139	55	66	19		139	0
Guadalupe Road and SB SR 202L	Total AADT	11,941	15,099		10,916	37,956	11,941	15,099		10,916	37,956	0
	MT AADT	155	196		142	493	155	196		142	493	0
	HT AADT	48	60		44	152	48	60		44	152	0
Ellsworth Road and EB SR 24	Total AADT	14,680		14,843	11,192	40,715	15,365		15,536	11,714	42,615	1,901
	MT AADT	440		445	336	1,221	461		466	351	1,278	57
	HT AADT	206		208	157	570	215		218	164	597	27
Ellsworth Road and WB SR 24	Total AADT		5,485	20,176	13,244	38,904		5,625	20,692	13,583	39,899	995
	MT AADT		159	585	384	1,128		163	600	394	1,157	29
	HT AADT		66	242	159	467		67	248	163	479	12
Williams Field Road and EB SR 24	Total AADT	26,340		6,720	13,159	46,219	10,274		2,621	5,133	18,027	-28,191
	MT AADT	869		222	434	1,525	339		86	169	595	-930
	HT AADT	500		128	250	878	195		50	98	343	-536
Williams Field Road and WB SR 24	Total AADT		6,741	22,954	23,715	53,410		3,481	11,853	12,246	27,581	-25,829
	MT AADT		209	712	735	1,656		108	367	380	855	-801
	HT AADT		128	436	451	1,015		66	225	233	524	-491
Signal Butte Road and EB SR 24	Total AADT	12,192		28,700	18,917	59,808	7,653		18,016	11,875	37,545	-22,263
	MT AADT	439		1,033	681	2,153	276		649	428	1,352	-801
	HT AADT	305		717	473	1,495	191		450	297	939	-557
Signal Butte Road and WB SR 24	Total AADT		8,643	29,802	21,504	59,949		4,654	16,048	11,580	32,283	-27,666
	MT AADT		311	1,073	774	2,158		168	578	417	1,162	**-996**
	HT AADT		164	566	409	1,139		88	305	220	613	**-526**
Meridian Road and EB SR 24	Total AADT	11,856		16,273	5,351	33,480	15,335		21,049	6,922	43,306	9,826
	MT AADT	462		635	209	1,306	598		821	270	1,689	**383**
	HT AADT	178		244	80	502	230		316	104	650	**147**
Meridian Road and WB SR 24	Total AADT		1,664	17,332	6,660	25,656		1,991	20,743	7,971	30,705	5,049
	MT AADT		63	659	253	975		76	788	303	1,167	**192**
	HT AADT		23	243	93	359		28	290	112	430	**71**
Ironwood Drive and EB SR 24	Total AADT	20,958		24,150	7,584	52,691	20,558		23,689	7,439	51,687	-1,005
	MT AADT	985		1,135	356	2,476	966		1,113	350	2,429	**-47**
	HT AADT	314		362	114	790	308		355	112	775	**-15**
Ironwood Drive and WB SR 24	Total AADT		2,554	8,778	14,624	25,956		2,420	8,315	13,853	24,588	-1,369
	MT AADT		143	492	819	1,454		135	466	776	1,377	-77
	HT AADT		43	149	249	441		41	141	236	418	-23

Notes: AADT – Annual average daily traffic on Approaching Movements
MT – Medium Trucks (vehicles with 2 axles & 6 wheels; gross vehicle weight – 10,000 to 26,400 pounds).
HT – Heavy Trucks (vehicles with 3 or more axles; gross vehicle weight greater than 26,400 pounds).

Source: Traffic data provided by Stanley Consultants on February 22, 2025.

Projects with Congested Intersections

Is this a project that affects a congested intersection (LOS D or greater) that has a significant number of diesel trucks, OR will change LOS to D or greater because of an increase in traffic volumes from a significant number of diesel trucks related to the project?

YES. This project is a project that affects a congested intersection of LOS D or will change LOS to D or greater which has a significant number of diesel trucks, see Table 3. The intersection operation analysis shows 7 intersections have a LOS of D or E , with total truck AADT at intersections 645 to 3,205 vehicles in 2050 Build alternative, as shown in previous Table 2.

Table 3 – Intersections LOS and Peak-Hour Volumes

Intersection	Peak Hour	2024 Existing Alternative				2050 No-Build Alternative				2050 Build Alternative				Total Truck Volume Difference (Build Alternative - No Build Alternative, vph)1
		LOS (delay, sec.)	Volumes (vph)	Medium Truck Volumes (vph)	Heavy Truck Volumes (vph)	LOS (delay, sec.)	Volumes (vph)	Medium Truck Volumes (vph)	Heavy Truck Volumes (vph)	LOS (delay, sec.)	Volumes (vph)	Medium Truck Volumes (vph)	Heavy Truck Volumes (vph)	
Power Road and EB SR 202L	AM	C (24.7)	3001	82	28	D (35.1)	4350	118	40	**E (56.0)**	4,350	118	40	0
	PM	D (37.2)	3846	104	35	F (98.0)	5383	146	49	C (20.5)	5,382	146	49	0
Power Road and WB SR 202L	AM	B (13.1)	2403	80	29	C (23.8)	3250	108	39	C (23.8)	3,250	108	39	0
	PM	B (19.0)	3374	112	41	D (37.9)	4829	160	58	D (40.3)	4,830	160	58	0
Hawes Road and EB SR 202L	AM	B (16.9)	987	29	16	B (19.1)	2114	62	34	B (18.6)	2,643	77	43	24
	PM	B (10.4)	959	28	16	B (17.3)	2345	69	38	C (21.4)	3,030	88	49	30
Hawes Road and WB SR 202L	AM	A (7.8)	379	14	7	D (43.2)	2056	72	35	D (41.2)	2,604	92	45	30
	PM	A (8.2)	514	18	9	D (41.8)	2004	71	35	D (42.7)	2,576	91	44	29
Elliot Road and NB SR202L	AM	D (46.3)	2642	93	43	B (12.7)	3744	132	60	B (13.1)	3,764	132	61	1
	PM	B (13.9)	2524	89	41	B (12.2)	3844	135	62	B (12.2)	3,846	135	62	0
Elliot Road and SB SR202L	AM	C (22.3)	1129	58	23	C (31.3)	1790	92	36	C (31.3)	1,810	93	37	2
	PM	E (59.3)	1886	97	38	D (43.4)	2902	149	59	D (41.6)	2,900	148	58	-2
Guadalupe Road and NB SR 202L	AM	B (12.6)	1968	26	6	B (17.9)	2556	34	8	B (17.9)	2,556	34	8	0
	PM	B (13.5)	2445	32	8	B (15.7)	3303	43	10	B (15.7)	3,303	43	10	0
Guadalupe Road and SB SR 202L	AM	B (18.1)	1566	21	7	C (21.7)	2232	30	9	C (20.6)	2,231	30	9	0
	PM	**F (176.5)**	2385	32	10	C (27.8)	3174	42	13	C (27.9)	3,174	42	13	0
Ellsworth Road and EB SR 24	AM	C (28.6)	3444	104	49	C (25.2)	5026	151	71	C (24.4)	5,128	154	72	4
	PM	B (10.1)	3719	112	53	C (33.9)	5280	159	74	D (36.9)	5,414	163	76	6
Ellsworth Road and WB SR 24	AM	A (6.4)	2752	80	34	C (27.0)	3779	110	46	C (28.8)	3,781	110	46	0
	PM	A (6.5)	2789	81	34	C (28.4)	4066	118	49	C (28.3)	4,170	121	51	5
Williams Field Road and EB SR 24	AM	B (10.9)	1312	44	25	B (17.5)	2448	81	47	C (31.6)	1,186	40	23	-65
	PM	E (95.4)	2907	96	56	F (144.8)	4488	149	86	D (38.2)	1,465	49	28	-158
Williams Field Road and WB SR 24	AM	**F (141.4)**	2724	85	52	F (81.2)	4096	127	78	C (31.3)	1,960	61	38	-106
	PM	**F (95.4)**	1891	59	36	D (38.3)	3859	120	74	C (34.7)	2,164	68	42	-84
Signal Butte Road and EB SR 24	AM	C (26.3)	1845	67	47	C (23.9)	2863	104	72	B (15.5)	2,075	75	52	-49
	PM	C (27.1)	3314	120	83	E (61.3)	5135	185	129	C (28.0)	2,843	103	72	-139
Signal Butte Road and WB SR 24	AM	C (27.9)	2596	94	50	F (109.4)	3602	130	69	C (34.1)	1,727	63	33	-103
	PM	C (27.4)	1806	66	35	D (53.0)	3488	126	67	C (30.2)	2,142	78	41	-74
Meridian Road and EB SR 24	AM	A (5.6)	1211	48	19	C (24.8)	2223	87	34	C (25.1)	3,136	123	48	50
	PM	A (6.6)	2185	86	33	C (29.7)	4137	162	63	C (35.0)	4,941	193	75	43
Meridian Road and WB SR 24	AM	A (4.3)	1792	69	26	F (238.8)	3045	116	43	**D (52.6)**	2,684	102	38	-19
	PM	A (3.1)	983	38	14	F (214.9)	3363	128	48	**E (63.5)**	4,985	190	70	84
Ironwood Drive and EB SR 24	AM	A (6.3)	2992	141	45	C (20.4)	4733	223	71	B (16.0)	4,533	214	68	-12
	PM	B (10.8)	3037	143	46	D (37.1)	5754	271	87	C (26.4)	5,754	271	87	0
Ironwood Drive and WB SR 24	AM	A (7.2)	2343	132	40	B (12.4)	3890	218	67	B (11.3)	3,690	207	63	-15
	PM	A (8.9)	1660	93	29	D (37.6)	3664	206	63	C (27.5)	3,466	195	59	-15

1. Truck Volume Difference includes both MT and HT
Volumes (vph) at the intersection includes all approaching movements

MT – Medium Trucks (vehicles with 2 axles & 6 wheels; gross vehicle weight – 10,000 to 26,400 pounds) HT – Heavy Trucks (vehicles with 3 or more axles; gross vehicle weight greater than 26,400 pounds).

Source: LOS data provided by Stanley Consultants on February 22, 2025.

New Bus and Rail Terminals

Does the project involve construction of a new bus or intermodal terminal that accommodates a significant number of diesel vehicles?

NO – This project does not construct any new bus or rail terminals.

Expanded Bus and Rail Terminals

Does the project involve an existing bus or intermodal terminal that has a large vehicle fleet where the number of diesel buses (or trains) increases by 50% or more, as measured by arrivals?

NO – This project does not expand any bus or rail terminals.

Projects Affecting PM Sites of Violation or Possible Violation

Does the project affect locations, areas or categories of sites that are identified in the PM_{10} or $PM_{2.5}$ applicable plan or implementation plan submissions, as appropriate, as sites of violation or potential violation?

NO – The project location is not listed in MAG's 2012 SIP as a site of violation or potential violation.

POAQC Determination

SR24 project is an expanded highway project that has a significant increase in the number of diesel vehicles on roadway segments and at TIs/intersections. Therefore, ADOT is recommending this project for interagency consultation in accordance with 40 CFR93.105 as a Project of Air Quality Concern and thereby will require a PM hot-spot analysis.

The SR 24 and SR 202L system TI has the largest combined volumes within the project area in 2050 Build alternative, including volumes from SR 202L mainline and Ramp N-E, Ramp N-W, Ramp W-S, and Ramp E-S. Between SR 24 Ramp to Hawes Ramp along SR 202L mainline, the 2050 Build AADT is 61,797 vehicles. Directional ramps N-E and N-W would provide traffic flow from SR 24 to SR 202L with AADT of 47,675 and 27,450 vehicles respectively. Directional ramps W-S and E-S provide traffic flow from SR 202L to SR 24 with AADT of 45,646 and 27,593 vehicles respectively.

The Guadalupe Road and SR 202L TI and adjacent Elliot Road and SR 202L TI show greater AADT volume and truck volume in 2050 Build alternative. The AADT volume and truck volume on SR 202L between SR 24 ramp to Elliott ramp would be 162,557 and 15,744 vehicles respectively, the truck AADT difference would be 2,814 from 2050 No Build alternative to Build alternative. The AADT volume and truck volume on SR202L between Guadalupe ramps would be 161,081 and 16,325 vehicles respectively, the truck AADT difference would be 8,248 from 2050 No Build alternative to Build alternative. Elliot Road and SB 202L intersection would operate at LOS D in 2050 Build alternative.

The Power Road and SR 202L TI shows large AADT volume and truck volume in 2050 Build alternative. The AADT volume and truck volume on SR202L between Power Road ramps would be 89,862 and 9,027 vehicles respectively. The AADT volume and truck volume on SR 202L between Power Road ramp to SR 24 ramp would be 116,840 and 10,105 vehicles respectively. Power Road and EB 202L intersection would operate at LOS E in 2050 Build alternative.

The Ellsworth Road and SR 24 TI shows large AADT volume and truck volume in 2050 Build alternative. The AADT volume and truck volume on SR 24 between Ellsworth Road ramps would be 115,568 and 12,317 vehicles respectively, the truck AADT difference would be 12,317 from 2050 No Build alternative to Build alternative. Ellsworth Road and EB SR 24 intersection would operate at LOS D in 2050 Build alternative.

The Merdian Road and SR 24 TI shows moderate AADT volume and truck volume in 2050 Build alternative. The AADT volume and truck volume on SR 24 between Meridian Road ramps would be 75,414 and 6,312 vehicles respectively, the truck AADT difference would be 6,312 from 2050 No Build alternative to Build alternative. Meridian Road and WB SR 24 intersection would operate at LOS E in 2050 Build alternative.

Based on the greater AADT and truck AADT volumes, as well as the worse intersection LOS and delay, the intersection modeling analysis will be performed for the following six TIs/intersections' for SR24 project:

- SR24 and SR 202L system TI
- Ellsworth Road and SR 24
- Meridian Road and SR 24
- Guadalupe Road and SR 202L
- Elliot Road and SR 202L
- Power Road and SR 202L

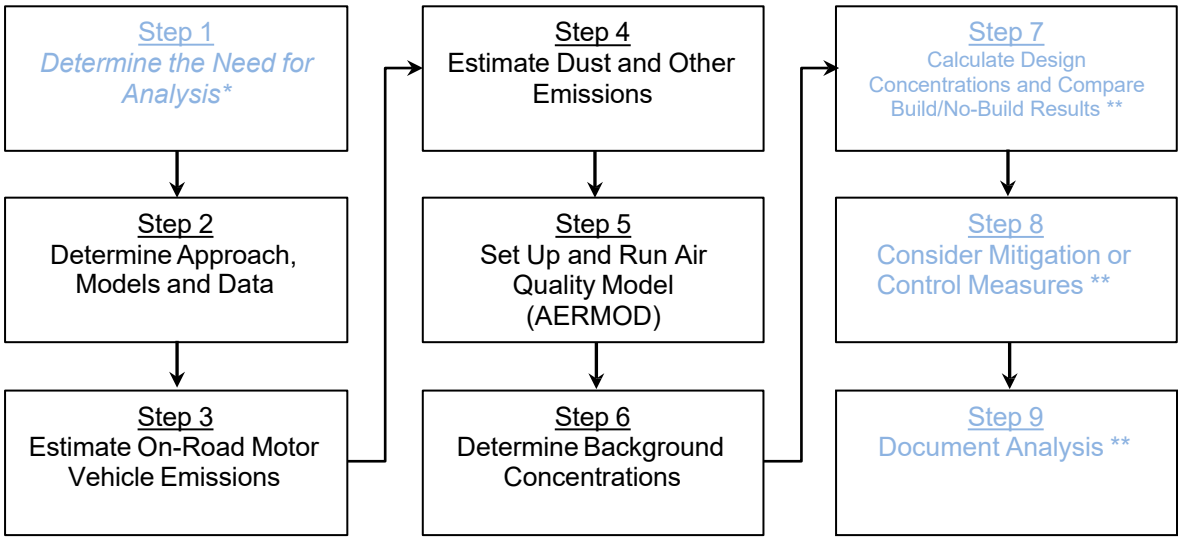
Section 3.3.2 of EPA's PM Hot Spot Guidance indicates the geographic area to be covered by a PM hot-spot analysis is to be determined on a case-by-case basis. The guidance states that it may be appropriate to focus the PM hot-spot analysis only on locations of highest air quality concentrations, and that if conformity requirements are met at such locations, then it can be assumed that conformity is met throughout the project area.

Based on the above reasons, we believe the six TIs/intersections selected for PM hotspot analysis in the consultation document are the locations that would result in highest air quality concentrations.

Project Level PM Quantitative Hot-Spot Analysis – Consultation Document for Project of Air Quality Concern

Completing a Particulate Matter (PM) Hot-Spot Analysis

The general steps required to complete a quantitative PM hot-spot analysis are outlined below and described in detail in the EPA Office of Transportation and Air Quality guidance document "Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas" EPA-420-B-21-037, October 2021.



- Described in the previous section (Air Quality Concern Questionnaire).
** These Steps will be described and documented in a final air quality analysis report.

Step 2: Determine the Approach, Models, and Data

- Describe the project area (area substantially affected by the project, 58 FR 62212) and emission sources.
- Determine general approach and analysis year(s) – year(s) of peak emissions during the time frame of the transportation plan (69 FR 40056).
- Determine National Ambient Air Quality Standards (NAAQS) and PM types to be evaluated.
- Select emissions and dispersion models and methods to be used.
- Obtain project-specific data (e.g., fleet mix, peak-hour volumes and average speed).

Step 3: Estimate On-Road Motor Vehicle Emissions

a. Estimate on-road motor vehicle emissions using MOVES.

Step 4: Estimate Dust and Other Emissions

☐ Estimate road dust emissions using AP-42 Paved Roads.
☐ Do emissions from other sources (e.g., locomotives) need to be considered?

Step 5: Set Up and Run Air Quality Model (AERMOD)

- Obtain and input required site data (e.g., meteorological).
- Input MOVES and AP-42 outputs (emission factors).
- Determine number and location of receptors, roadway links, and signal timing.
- Run air quality dispersion model and obtain concentration results.

Step 6: Determine Background Concentrations

a. Determine background concentrations from nearby and other emission sources excluding the emissions from the project itself.

Step 7: Calculate Design Concentrations and Compare Build/No-Build Results

* Add step 5 results to background concentrations to obtain values for the Build scenario.
* Determine if the design values allow the project to conform.

Step 8: Consider Mitigation or Control Measures

a. Consider measures to reduce emissions and redo the analysis. If mitigation measures are required for project conformity, they must be included in the applicable SIP and be enforceable.
b. Determine if the design values from allow the project to conform after implementing mitigation or control measures.

Step 9: Document Analysis

a. Determine if the project conforms or not based on the results of step 7 or step 8.

To support the conclusion that a project meets conformity under 40 CFR 93.116 and 93.123, at a minimum the documentation will include:

- *Description of proposed project, when it is expected to open, and projected travel activity data.*
- *Analysis year(s) examined and factors considering in determining year(s) of peak emissions.*
- *Emissions modeling data, model used with inputs and results, and how characterization of project links.*
- *Model inputs and results for road dust, construction emissions, and emissions from other source if needed.*
- *Air Quality modeling data, included model used, inputs and results and receptors.*
- *How background concentrations were determined.*
- *Any mitigation and control measures implemented, including public involvement or consultation if needed.*
- *How interagency and public participation requirements were met.*
- *Conclusion that the proposed project meets conformity requirements.*
- *Sources of data for modeling.*

Table 1. Proposed Inputs, Parameters and Data Sources

Estimate On-Road Motor Vehicle Emissions (Step 3)		
MOVES3.1	**Input**	**Data Source/Detail**
Scale	*Onroad, Project Scale and Inventory*	*MAG Regional Conformity Data (Fall, 2024)*
Time Spans	*2050, 16 runs* *PM_{10} 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. This has been reflected in the 2021 MAG Conformity Analysis budget test, which resulted in highest PM10 emissions in 2050 due to largest VMT and the most surrounding PM emissions.*	*4 seasons (Jan, Apr, July & Oct) x 4 weekday time periods (6-9AM, 9AM-4PM, 4-7PM & 7PM-6AM)*
Geographic Bounds	*Maricopa County*	*EPA Hot Spot Guidance Section 4.4.4*
Onroad Vehicles	*All Fuels and Source Use Types*	*EPA Hot Spot Guidance Section 4.4.5*
Road Type	*Urban Restricted and Urban Unrestricted access*	*EPA Hot Spot Guidance Section 4.4.6*
Pollutants and Processes	*Primary Exhaust PM10-Total(for Running Exhaust and Crankcase Running Exhaust), Break Wear Particulate, Tire Wear Particulate*	*EPA Hot Spot Guidance Sections 2.5, 4.4.7*
General Output and Output Emissions Detail	*Output Database TBD*	*EPA Hot Spot Guidance Section 4.4.8, 4.4.9 & 4.6*
Create Input Database	*Input database will be created and modified for Project level using required Regional Inputs from latest Regional Conformity Analysis.*	*MAG Regional Conformity Data (Fall, 2024)*
Project Data Manager	*Database will be created and MOVES3.1 templates will be created to include local project data and information provided by MAG, e.g., Fuel, Age Distribution, Meteorology Data, to be consistent with the regional model. Links and Link Source Type will be specific to project as provided by the traffic study, any missing information will use default MOVES3.1 data.*	*EPA Hot Spot Guidance Sections 4.5 &Appendix D*
Meteorology	*Calculated from current ADEQ Phoenix AERMET data based on 4 seasons and 4 weekday time periods from year 2017 to 2021.*	*16 meteorology data set, 4 seasons (Jan, Apr, July & Oct) x 4 weekday time periods*
Age Distribution	*MAG local specific data (sourceTypeID: 11 – 62, yearID: 2050, ageID: 0 -30)*	*MAG Regional Conformity Data (Fall, 2024)*
Fuel	*MOVES default*	*EPA Hot Spot Guidance Section 4.5.3*

I/M Programs	*Not used. Check the box labeled "No I/M Program" in MOVES*	*MAG Regional Conformity Data (Fall, 2024)*
Retrofit Data	*Not used*	
Links	*Please see attached the link maps.*	
Link Source Types	*Option 2 in the EPA's PM Hot- spot Guidance Section 4.5.7 will be used.* Per EPA and FHWA, ADOT will change the current calculations to cars (11,21,31,32) and trucks (41-62).	*MAG Regional Conformity Data (Fall, 2024)*
Link Drive Schedules, Operating Mode Distribution	*Options 1 in the EPA's PM Hot-spot Guidance Section 4.5.8 will be used. Average speeds and road types through the Links Importer will be used. Detailed information through the Link Drive Schedules of Option 2 and Op-Mode Distribution Importers of Option 3 is not available by MAG. MAG provided travel demand model (TDM) supplied traffic data for PM hotspot analysis. This detailed information is normally used/generated by traffic micro-simulations, which is not the intent for this exercise.*	
Off-Network, Hoteling	*Not used*	
Estimate Dust and Other Emissions (Step 4)		
AP-42, Fifth Edition, 2011	**Parameter**	**Data Source/Detail**
Average Weight Vehicles	*Freeways 3.95 tons in 2025, 4.00 tons in 2030, 4.12 tons in 2040, and 4.27 tons in 2050. Arterials 2.65 tons in 2025, 2.65 tons in 2030, 2.65 tons in 2040, and 2.65 tons in 2050*	*MAG Regional Conformity Data (Fall, 2024)*
Silt Loading	*Section 13.2.1 Paved Roads from AP 42 will be used, consistent with the Regional analysis from MAG. Emission factors for road and construction dust should be added to the emission factors generated for each link by MOVES. Ex. Silt loading – Freeways .02 g/m^2, Arterials >10,000 ADT .067g/m^2, Low traffic roads <10,000 ADT .23g/m^2.*	*EPA Hot Spot Guidance Section 6, When estimating emissions of re-entrained road dust from paved roads, site-specific silt loading data must be consistent with the data used for the project's county in the regional emissions analysis (40 CFR 93.123(c)(3)).*
Construction Dust	*Construction Emissions will not be addressed because the construction of this project is not expected to last longer than 5 years. There are no other sources (e.g., locomotives) that need to be considered for most projects.*	EPA Hot Spot Guidance Section 6.5
Precipitation	*In 2008-2012 SIP/Regional Conformity used average of 32 days with at least .01 inch of precipitation County.*	*The MAG 2012 Five Percent Plan for PM-10 (used for the Conformity Analysis for the FY 2022-2025 MAG TIP and the Momentum 2050 RTP, dated December, 2021).*
Set Up and Run Air Quality Model (AERMOD) (Step 5)		
AERMOD v.24142	**Parameter**	**Data Source/Detail**

Model Setup (CO Pathway)		*EPA Hot Spot Guidance Section 7.1, 7.2 & Appendix J, AERMOD User's Guide Section 2.3.2 & 3.2*
TITLEONE	*TBD*	
MODELOPT	*CONC FLAT. Initial modeling will be done with all sources and receptors at grade.*	*Modeling Concentrations and Flat Terrain*
AVERTIME	*24*	*Average across each 24-hour period from the available met data*
URBANOPT	*1,650,070*	*Population of Phoenix, AZ https://www.census.gov/quickfacts/fact/table/phoenixcityarizona/PST045222*
FLAGPOLE	*Receptor height in meter, 1.8*	
POLLUTID	*PM10*	
Source Types and Characters (SO Pathway)		
LOCATION	*Srcid Srctyp (VOLUME)*	
SRCPARAM	*Srcid Vlemis Relhgt Syinit Szinit*	*VOLUME Source parameters See EPA Hot Spot Guidance Appendix*
URBANSRC	*ALL*	*All urban source*
EMISFACT	*Emission rate=1, Use SEASHR (season by hour-of-day)* *As directed by the PM Hot Spot Guidance, emissions were input in a manner to reflect changes in emission factors and vehicle volumes throughout the day. This was represented in AERMOD by specifying an emission rate of 1 g/s/m² with the variable emission rate option to specify the emission rate of 96 emission factors (4 seasons/24 hours per day) for each emission source. Excel files that outline this process are included with MOVES and AERMOD modeling files for agency review.*	*Total 16 MOVES run=4 seasons x 4 time periods to 96 factors (4 seasons/24 hours)* *See PM hot-spot training slides (FHWA, 2022)*
SRCGROUP	*ALL*	
Meteorological Data (ME Pathway)		
SURFFILE	*Phoenix2017-2021.sfc* *ADOT followed up with ADEQ on the AERMET files- the Phoenix Sky Harbor Airport dataset. ADEQ provided a document detailing the AERMET data completeness, their representativeness of meteorology of the project area, and QA/QC.*	*ADEQ Phoenix AERMET files*

PROFFILE	*Phoenix2017-2021.pfl* *ADOT followed up with ADEQ on the AERMET files- the Phoenix Sky Harbor Airport dataset. ADEQ provided a document detailing the AERMET data completeness, their representativeness of meteorology of the project area, and QA/QC.*	*ADEQ Phoenix AERMET files*
SURFDATA	*23183 2017*	*ADEQ Phoenix AERMET files*
UAIRDATA	*23160 2017*	*ADEQ Phoenix AERMET files*
PROFBASE	*0*	*ADEQ Phoenix AERMET files*
Run Met Pre-Processor	*Not used*	
Urban or Rural Sources	*Specifications for URBANSRC (SO Pathway). The emission sources are SR 202L and SR24 mainlines, ramps, frontage roads, and cross streets. No nearby emission sources other than the roadway links included in the model run would be affected by the project.* *All emission sources used URBANOPT to specify urban dispersion coefficients. The PM Hot-spot Guidance recommends "in urban areas, sources should generally be treated as urban." Appendix W recommends multiple procedures to identify an area as urban. Using the Auer land use procedure described in Section 7.2.1.1(b)(i). Based on aerial maps, this project is in the urban fringe of Phoenix that is partially developed. Currently, residential takes 13% of the land use, transportation takes 32%, and vacant land takes 41%, other minor land use includes industrial and agriculture. Therefore, the use of urban dispersion coefficients is appropriate for the project area.*	*EPA Hot Spot Guidance Section 7.5.5 & Appendix J.4,* *AERMOD Implementation Guide, Section 7.2.3 of Appendix W to 40 CFR Part 51*

Receptors (RE Pathway)	*Please see attached receptor maps on pages 19 to 24. Guadalupe Road and SR 202L TI, Elliot Road and SR 202L TI, Power Road and SR 202L TI, Ellsworth Road and SR 24 TI, and Meridian Road and SR 24 TI, SR 202L and SR 24 system TI were selected for PM hotspot analysis that were ranked by AADT volumes on mainline and at intersections, and LOS and delay at intersections.* *The receptor placement is consistent with the guidance. Receptors were placed 5m from the edge of the roadway. Receptors were placed at 25 meters spacing. (total 1175 receptors for Guadalupe Road and SR 202L TI, 1073 receptors for Elliot Road and SR 202L TI, 1055 receptors for Power Road and SR 202L TI, 996 receptors for Ellsworth Road and SR 24 TI, 1148 receptors for Meridian Road and SR 24 TI, and 3216 receptors for SR 202L and SR 24 system TI). the highest PM concentration would normally occur at receptors near the roadway sources. the PM concentrations would decrease further away from the roadway sources, and receptor placements further away from the source would not affect the highest PM concentration design value for the intersection and analysis results.*	*EPA Hot Spot Guidance Section 7.6, AERMOD User's Guide Section 2.3.4 & 3.4, Section 7.2.2 of Appendix W to 40 CFR Part 51, See PM hot-spot training slides*
DISCCART	*X Y (Z)*	*Z is optional if FLAGPOLE is already defined in CO Pathway.*
GRIDCART	*Not used*	
Output (OU Pathway)		
RECTABLE	*24 6th*	*Since PM should be one or less exceedance per year, with 5 years of met data, the 6th highest concentration at each receptor*
PLOTFILE	*Not used*	
POSTFILE	*Not used*	
Model Runs		
Determine Background Concentrations (Step 6)		
Source Type	**Description**	**Data Source/Detail**
Nearby Sources	*No nearby sources*	

Other Sources (Ambient Monitoring Data)	*Please see the selected monitor's location map and monitoring data with wind rose information. Higley (HI) monitor was selected as PM background monitor. The background concentration data of Higley (HI) monitor is representative for the project area.* 1. *Similar characteristics between the monitor location and project area including density, mix of emission sources, land use, terrain, etc.* 2. *Distance of monitor from the project area. HI monitor is closer to the project and have concentration most similar to the project area.* 3. *Wind patterns between the monitor and the project area. ZH monitor shows significant upwind patterns.* *Draft Atypical Events Report was prepared. See Atypical Events Report for detailed monitor data, calculations, and resulting recommended background concentrations.* *For the design concentration, the highest sixth-highest value among all receptors should be added to the fourth highest background monitor value (Section 9.3.4 of PM Hot-spot Guidance). The design concentration will then be compared to NAAQS threshold for conformity determination.*	*EPA Hot Spot Guidance Section 8.3, PM hot-spot training slides Module 5 & 6*

References

PM Hot-spot guidance, EPA-420-B-21-037, October 2021.

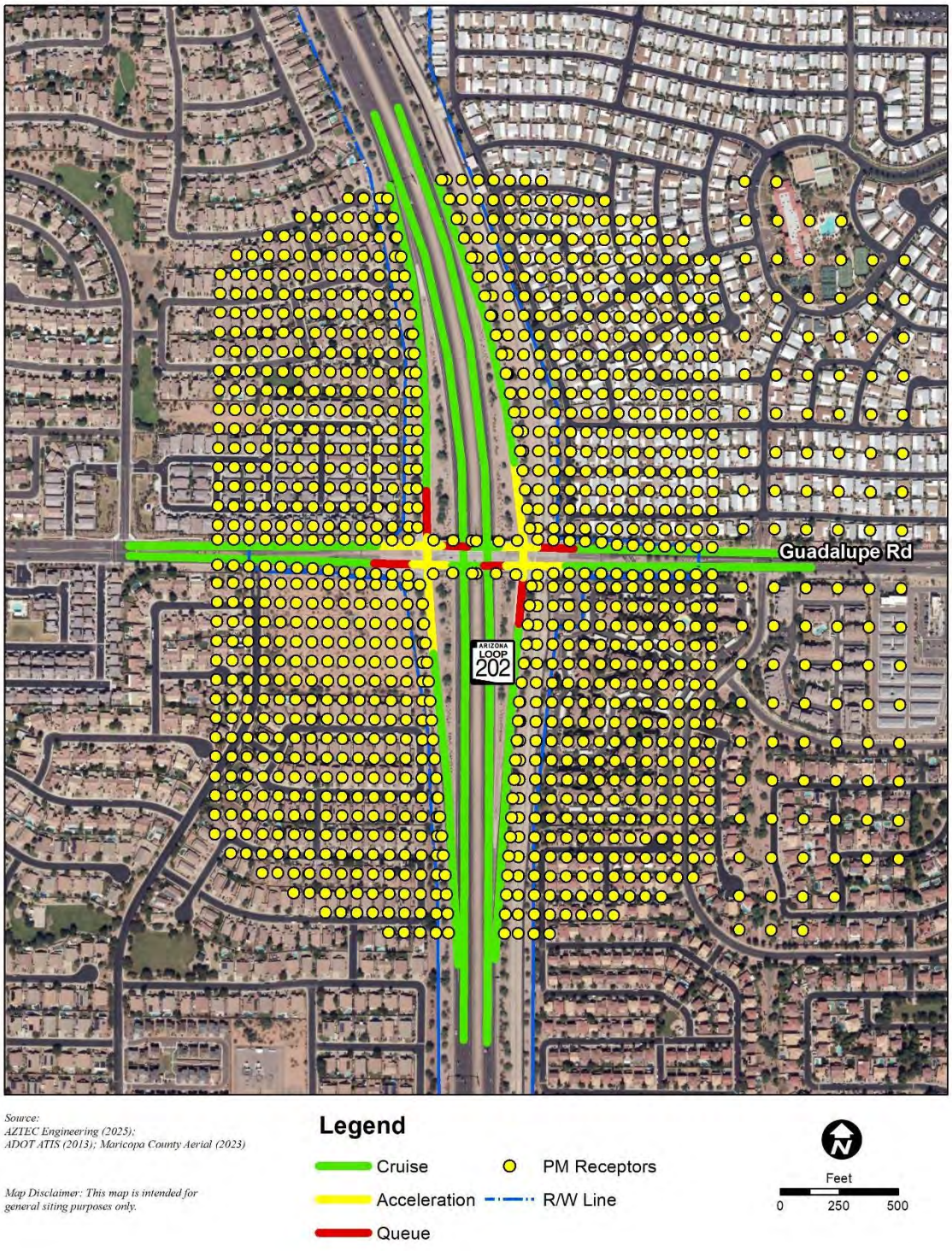
User's Guide for the AMS/EPA Regulatory Model (AERMOD), EPA-454/B-21-001, April 2021.

AERMOD Implementation Guide, EPA-454/B-21-006, July 2021.

User's Guide for the AERMOD Meteorological Preprocessor (AERMET), EPA-454/B-22-006, June 2022.

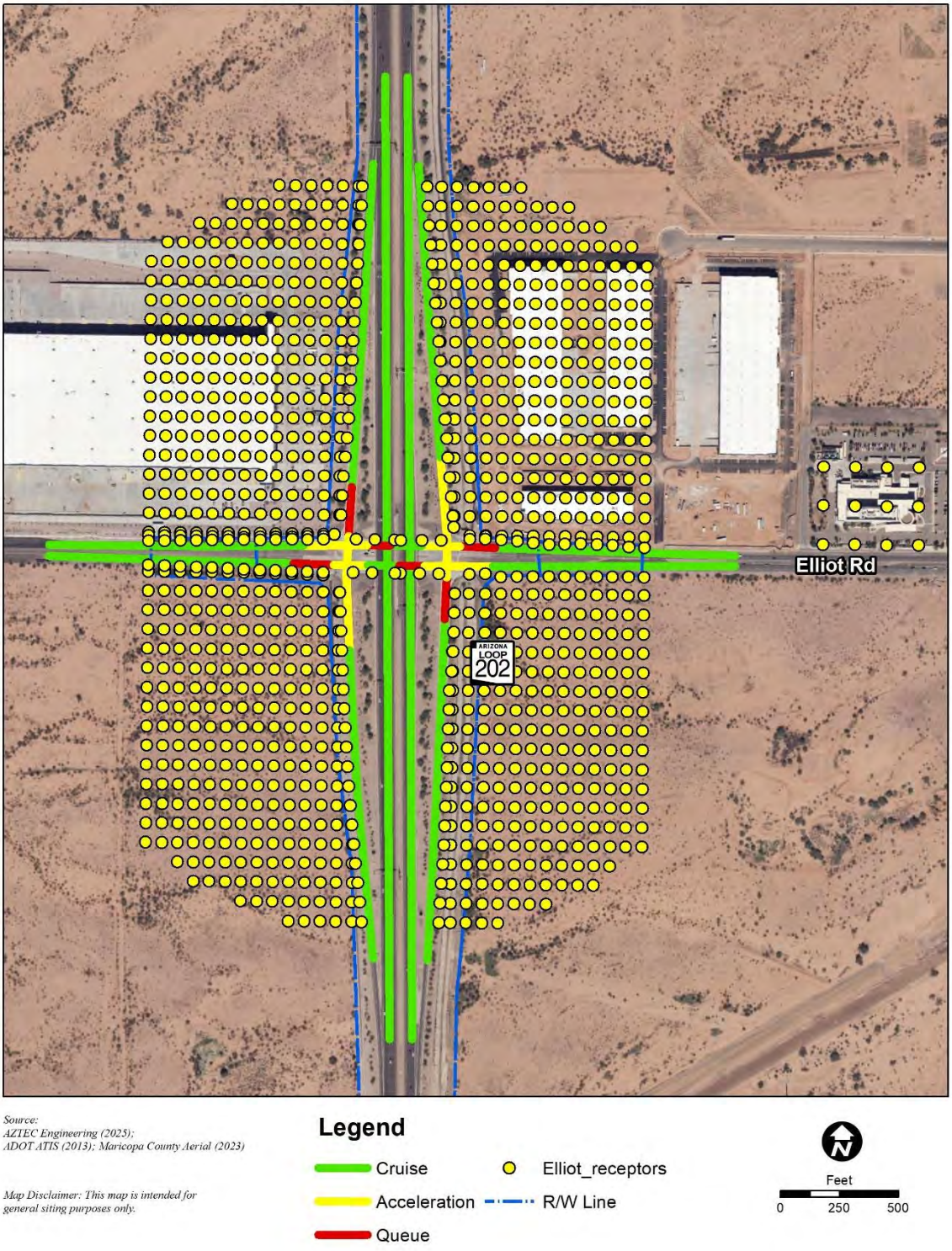
Completing Quantitative PM Hot-spot Analyses: 3-Day Course, FHWA, October 2022.

Figure 1. PM Links and Receptors Placement for Air Quality Modeling
(Guadalupe Road and SR 202L)



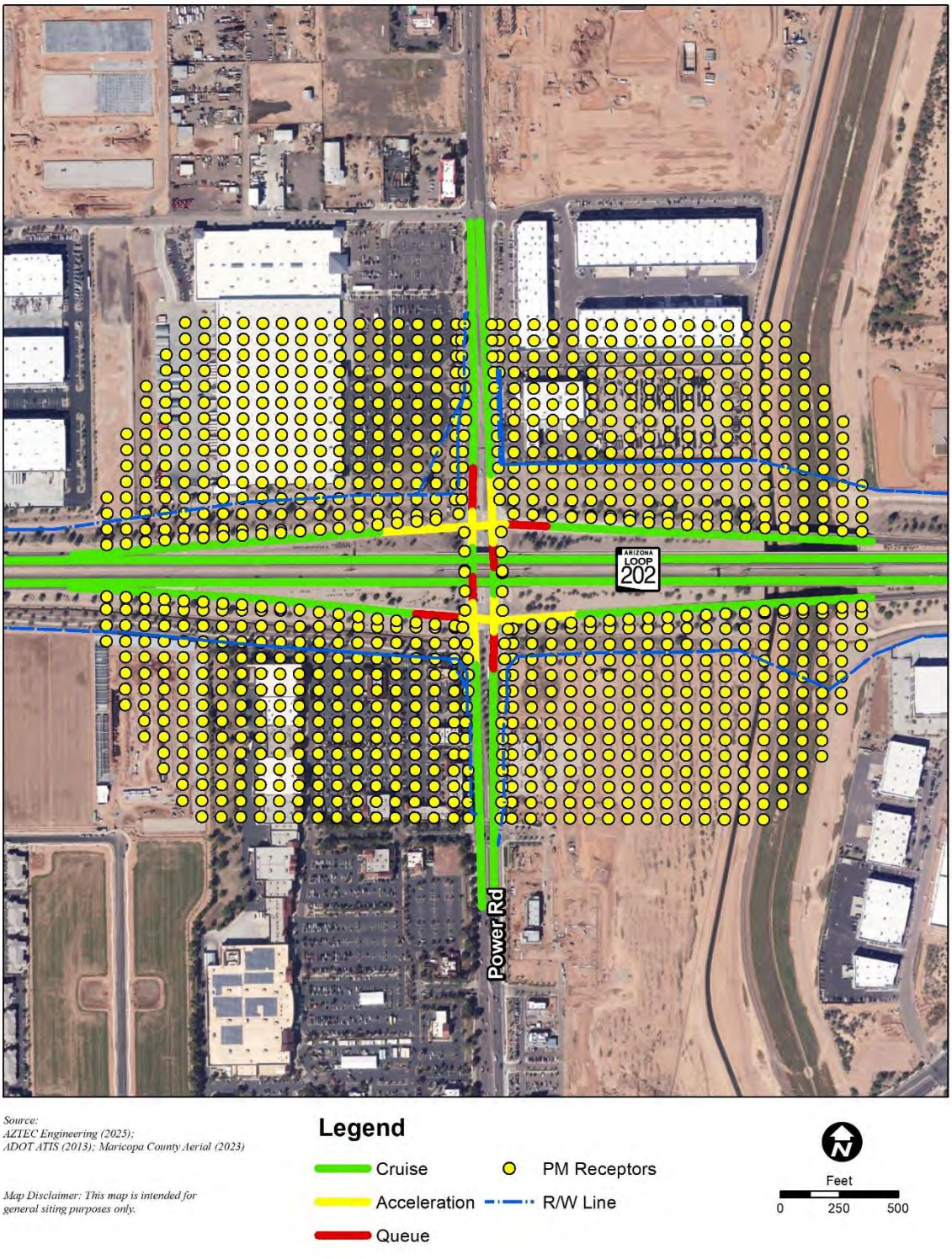
PM receptors were placed on the Guadalupe Road sidewalks above the freeway mainline. Additional receptors were placed for the retirement community on Guadalupe Road.

Figure 2. PM Links and Receptors Placement for Air Quality Modeling
(Elliot Road and SR 202L)



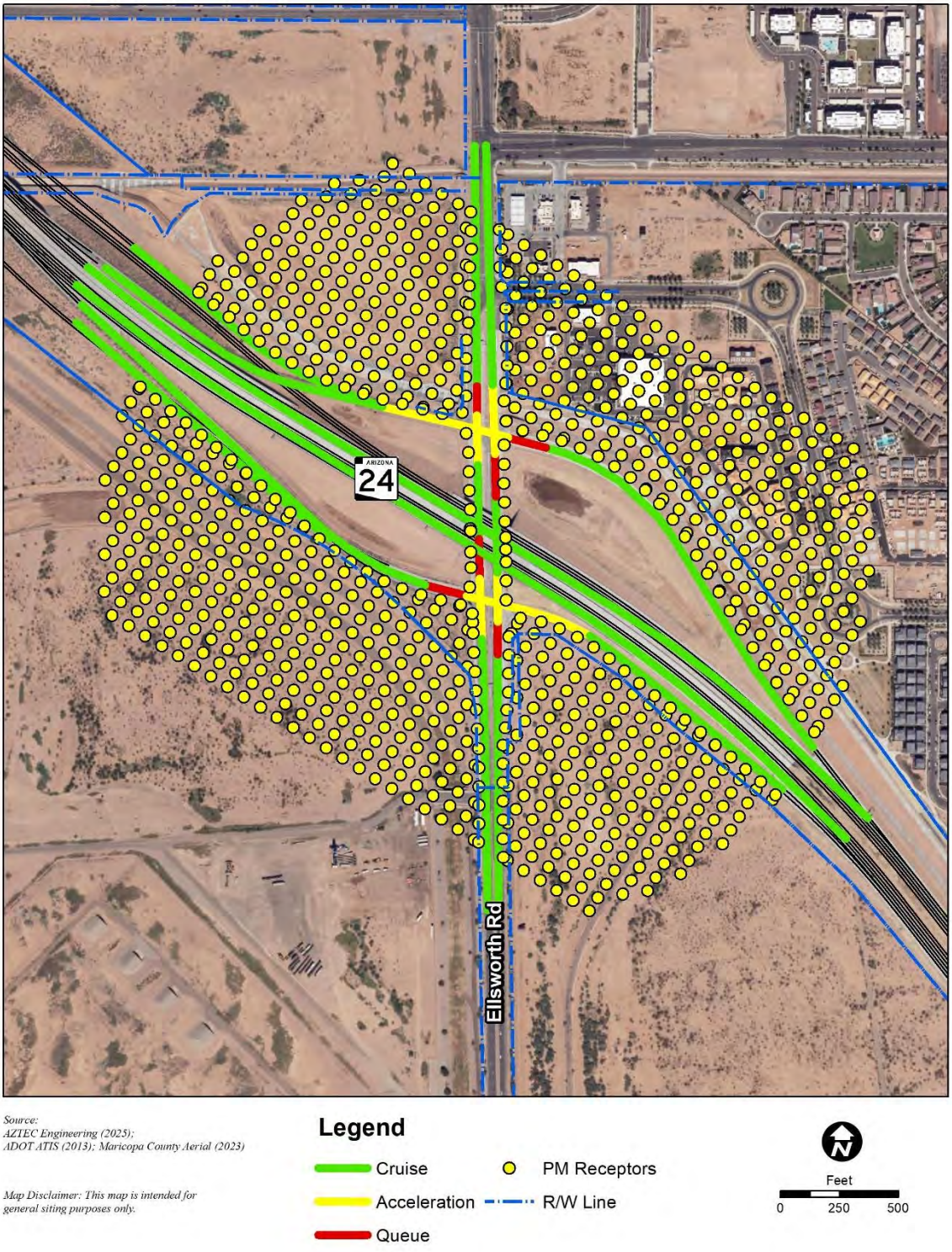
PM receptors were placed on the Elliot Road sidewalks under the freeway mainline. Additional receptors were placed for the hospital on Elliot Road.

Figure 3. PM Links and Receptors Placement for Air Quality Modeling
(Power Road and SR 202L)



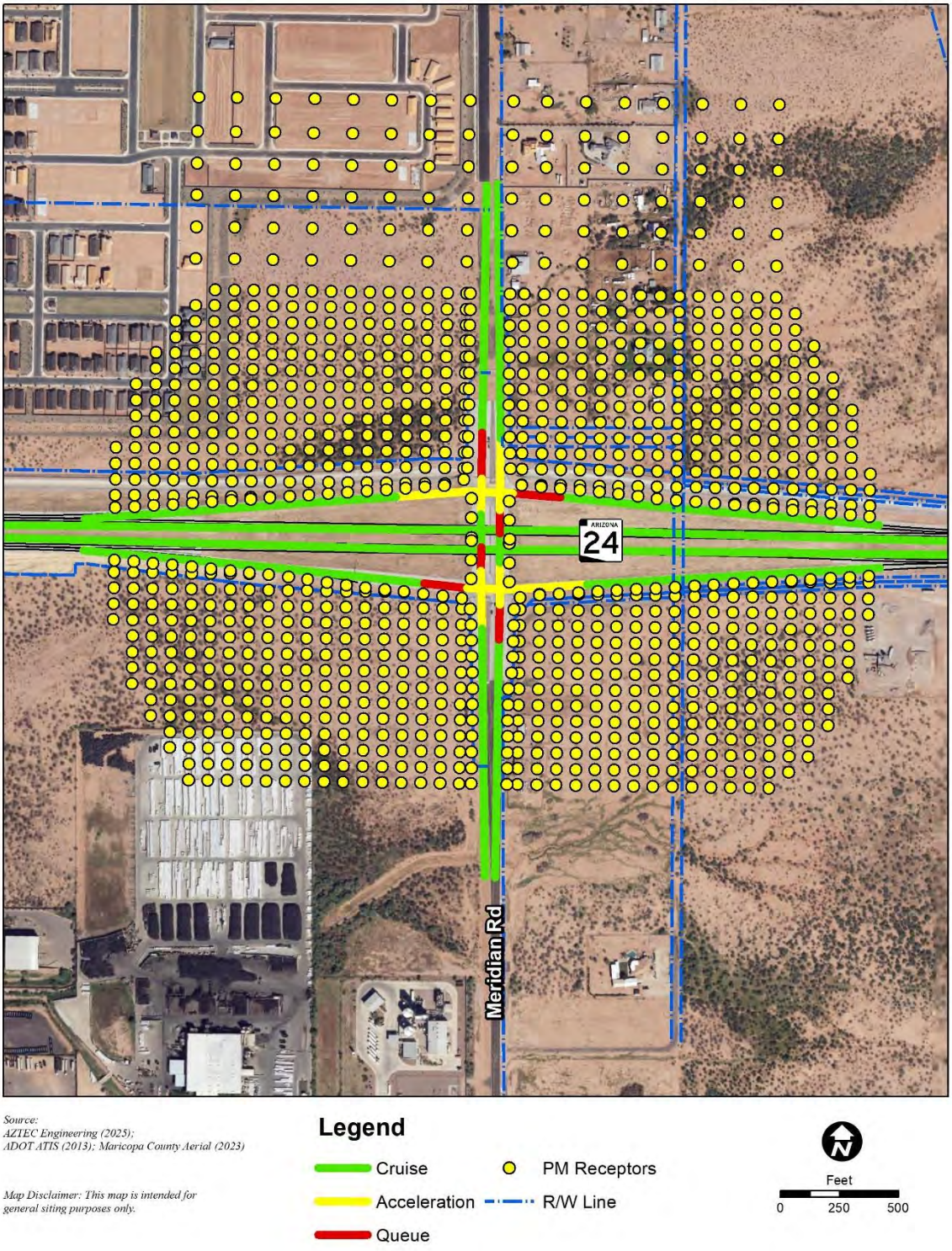
PM receptors were placed on the Power Road sidewalks under the freeway mainline.

Figure 4. PM Links and Receptors Placement for Air Quality Modeling
(Ellsworth Road and SR 24)



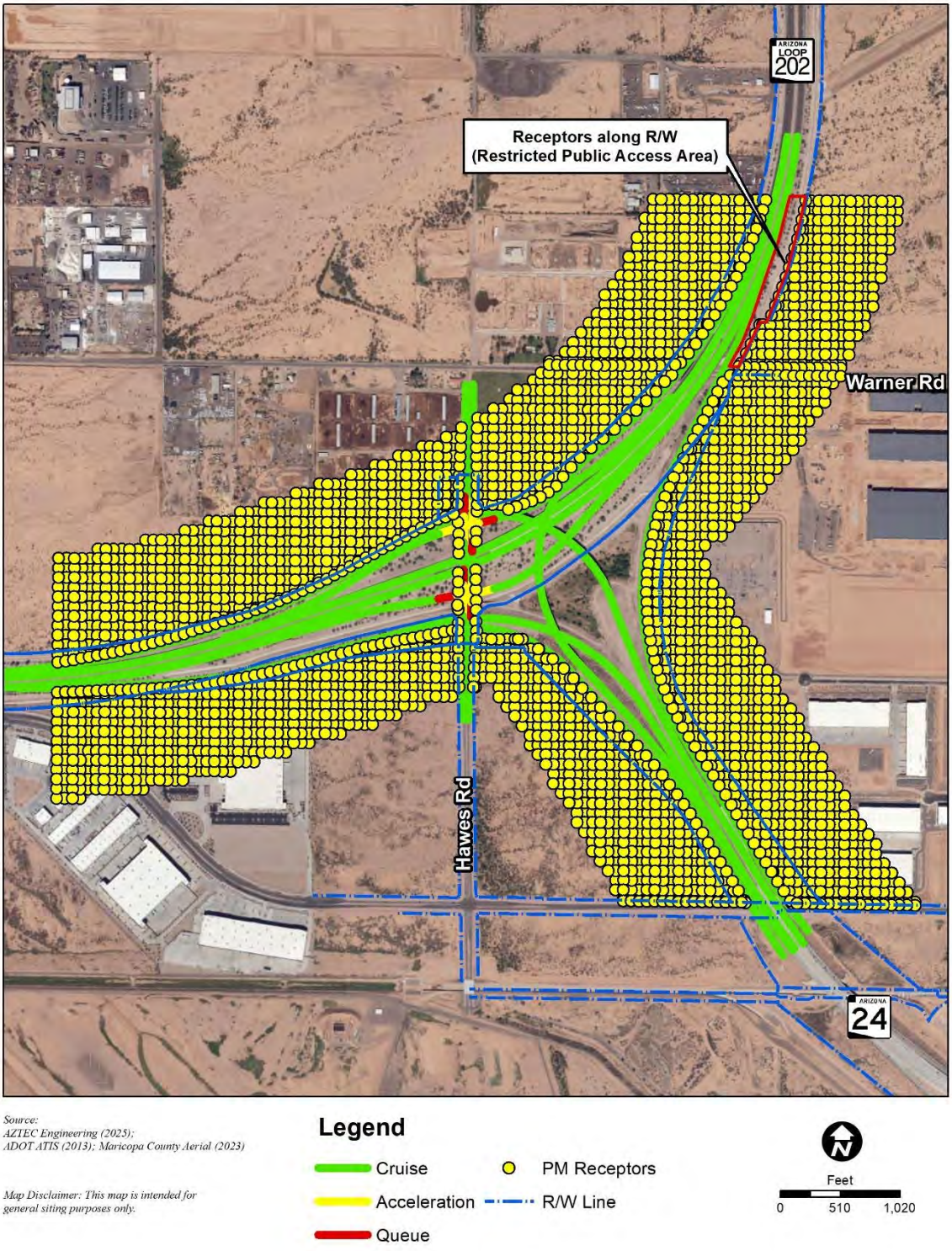
PM receptors were placed on the Ellsworth Road sidewalks under the freeway mainline.

Figure 5. PM Links and Receptors Placement for Air Quality Modeling
(Meridian Road and SR 24)



PM receptors were placed on the Meridian Road sidewalks under the freeway mainline. Additional receptors were placed for houses located north SR24 on Meridian Road.

Figure 6. PM Links and Receptors Placement for Air Quality Modeling (SR202 and SR 24)



PM receptors were placed on the Hawes Road sidewalks under the freeway mainline. Receptors were placed along R/W on SR202 EB north of Warner Road due to restricted public access area by the ADOT R/W fence, as indicated on Figure 6.

Figure 7. PM Monitoring Sites adjacent to the Project Area

Higley (HI) (04-013-4006)

Site Location	Higley Rd. & Williams Field Rd., Gilbert
Spatial Scale	Neighborhood
Site Type	Population Exposure

Site Description: Originally, ADEQ began monitoring at this site in 1994 to measure background particulate concentrations near the urban limits of Maricopa County. The MCAQD assumed operating this site in July 2000. This SLAMS location monitors for PM_{10}. Meteorological monitoring includes ambient temperature, barometric pressure, and wind speed/direction.

Number of complete monitoring days at Higley:

2022	2023	2024	Total
362	333	359	1054

4th Highest 24-hour readings at Higley **Without** removing atypical events (in red number):

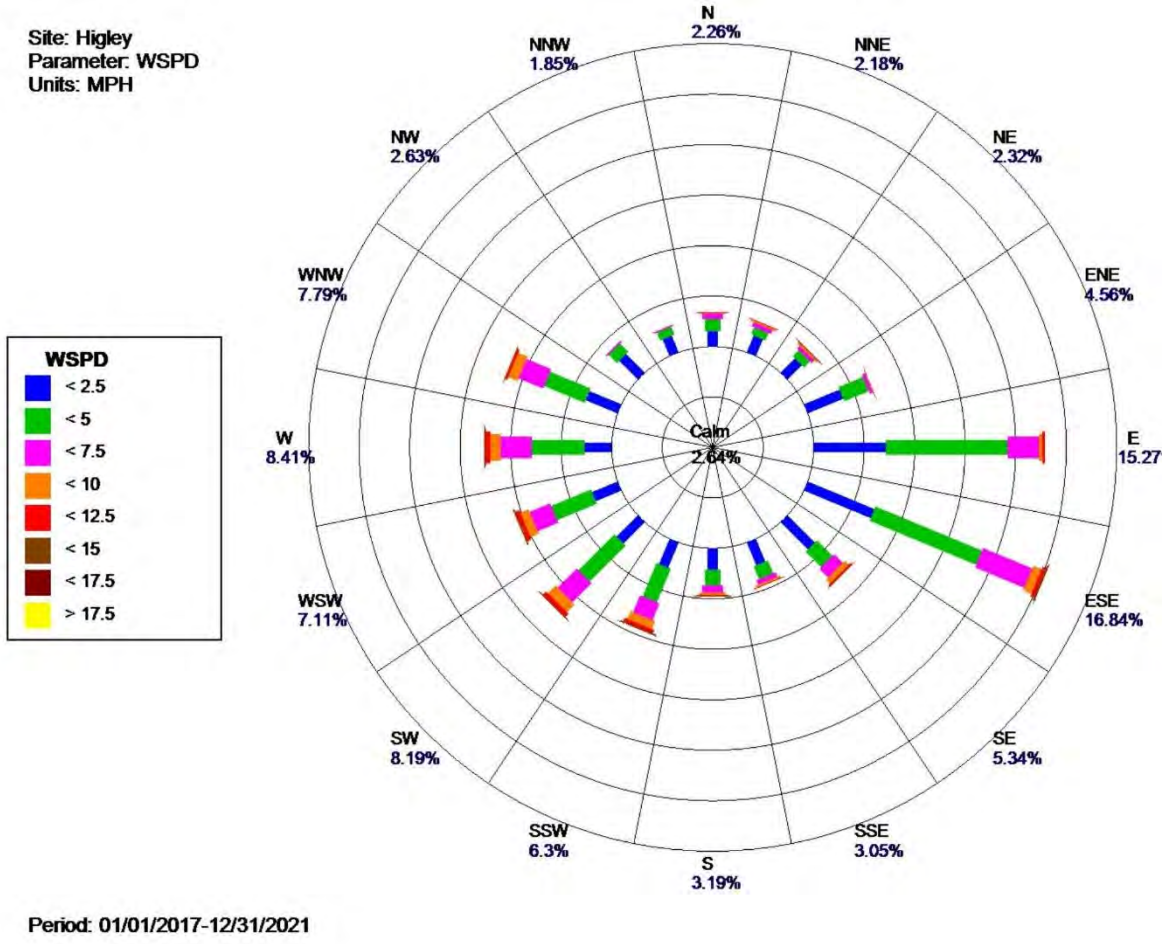
	2022	2023	2024
1	160	*164*	***141***
2	99	*143*	110
3	88	122	106
4	86	114	104

Based on the background PM10 concentrations and preliminary modeling results, the potential dates (based on comments from EPA on June 18, 2025) of the atypical events to be removed for Higley are: 9/2/2022; 7/21/2023; 7/26/2023; 7/14/2024. These dates have been flagged as atypical events because of PM10 exceedances at varies PM10 monitors per Maricopa County Air Monitoring Network Plans.

4th Highest 24-hour readings at Higley after removing atypical events (in red number). Pending EPA approval.

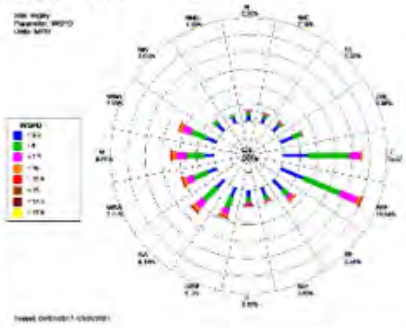
	2022	2023	2024
1	99	143	110
2	88	122	106
3	86	***107***	104
4	83	103	103

Source: https://www.epa.gov/outdoor-air-quality-data/download-daily-data



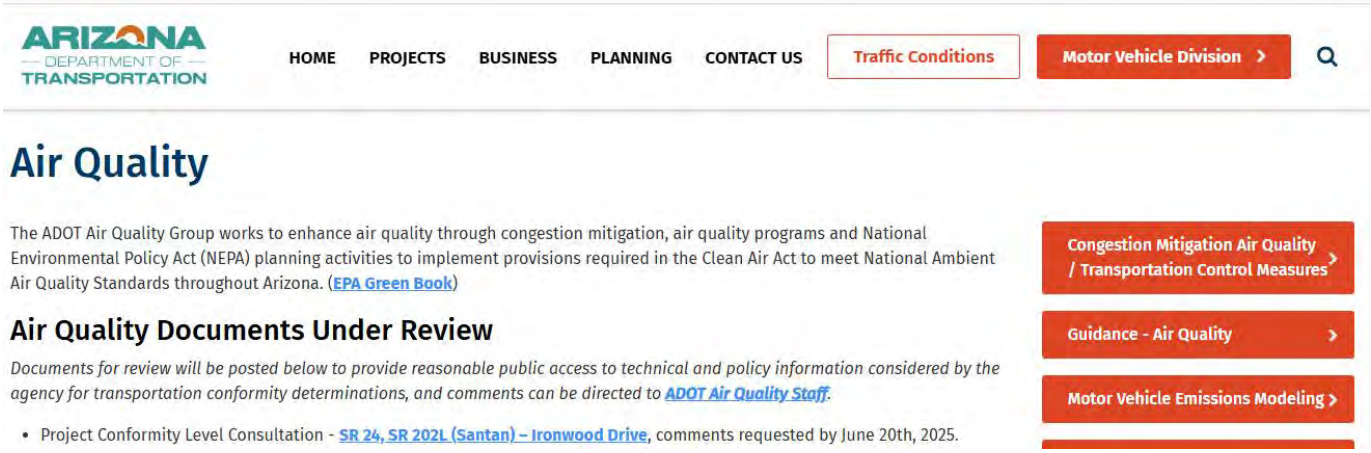
Source: email from Ron Pope (AQD) Thu, Dec 1, 2022

Percentages were added to the land use/terrain row below. Wind rose figures were added in the Wind pattern row below, which include the wind speed in each direction and wind percentages for each wind direction.

	Project Area	Higley (HI) AQS ID: 04-013-4006 Address: 2207 S Higley Rd, Gilbert 4.5 miles to project
Land use/terrain	Density (developed area), emission sources (near the traffic interchange), land use (residential area [13%] & vacant and open space [44%] commercial [1%], office [1%], light industrial [3%], transportation [33%]), terrain (relative flat). 	Density (developed area), emission sources (near the traffic interchange), land use (residential area [58%] & vacant and open space [12%] commercial [7%], terrain (relative flat). The Higley monitor is located in fringe area away from central Phoenix, characteristics similar to the project area. 
Wind patterns	N/A	show significant upwind patterns to the project area. 
Nearby sources:	No nearby sources other than roadways.	No nearby sources other than roadways.

Interagency and Public Response to Comments

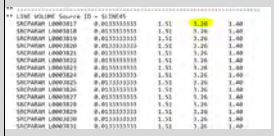
No Public comments.



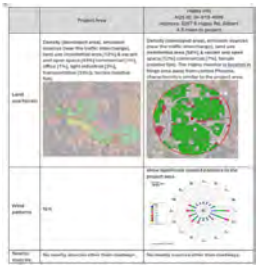
ARIZONA DEPARTMENT OF TRANSPORTATION

Interagency Consultation Comments

Project Name:	SR24, SR202L to Ironwood Road	**Name: Lindsay Wickersham, Zach Menzo, Laura Barry**	
Project Number(s):	F0719	**Agency: US EPA**	
Document Name:	F0719_SR24_Project Level PM Interagency Consultation_05192025; Mode		**COMMENT RESOLUTION**
Document Date:	5/19/25		**For ADOT USE**

Page Number	Paragraph	Table	Other	Comment	Response Notes	EPA Comment 7/16/25	ADOT Response 8/4/2025
			General	We are aware that source type 32 (Commerical vehicles) are being characterized and modeled as heavy duty trucks. However they should be characterized and modeled the same as source type 31. We would like to request a follow up meeting with the relevant team members to address this issue before we continue with this hot spot analysis.	ADOT agrees on the recommendation that the source type 32 (Light Commercial Truck) belong to the Light Vehicle category as a more conservative methodology. ADOT will change the current calculations to "cars (11,21,31,32) and trucks (41-62)" for the future projects including this F0719 project.		
			General	2024 Design Values were certified before the starting modeling date of this project, and therefore should be used for this PM hot spot analysis. This means that 2022, 2023, and 2024 monitoring values should be used. We recommend adjusting the atypical events report to remove 2021 days as they are no longer relevant in this time frame.	Will adjust the atypical events report to use 2022, 2023, and 2024 monitoring values.		
9	4			We would like to see an additional four Tis/intersections be modeled as part of this hot spot analysis in addition to the 5 Tis/intersections already listed: Williams Field Road, Signal Butte Road, Ironwood, Hawke	Will include the whole SR202/SR24 system TI for modeling, including the Hawes Rd intersections. The traffic volumes and truck volumes of Williams Field Road intersection, Signal Butte Road intersection, and Ironwood Rd intersection are far less than Elliot Rd intersection and Guadalupe Rd intersection, and are not likely to result in higher PM concentrations. Therefore, they were not included in the analysis.		
9				In selecting the intersection/modeling domain, it is recommended to engage in a detailed discussion of the factors that lead to your conclusion, rather than relying on a ranking system. Additionally, it is important to provide a rationale for why sections of the project located between the primary interchanges/intersections are expected to have lower concentrations, thereby not necessitating evaluation. The default approach should be to assess the entire project. To justify the exclusion of these intermediary sections, further discussion is required, such as examining the lower emissions density between interchanges, which is likely to result in reduced concentrations.	Will engage in a detailed discussion of the factors that lead to intersection modeling domain selection. Section 3.3.2 of EPA's PM Hot Spot Guidance indicates the geographic area to be covered by a PM hot-spot analysis is to be determined on a case-by-case basis. The guidance states that it may be appropriate to focus the PM hot-spot analysis only on locations of highest air quality concentrations, and that if conformity requirements are met at such locations, then it can be assumed that conformity is met throughout the project area. For PM hotspot analysis, we placed receptors around the concerned TI/intersections and extended receptors along the on and off-ramps to the mainline gore area. The reason is because high PM concentrations normally occur adjacent to the intersections because of greater traffic volumes, worse LOS, and close proximity to public. Becuase of above reason, freeway segments between the ramp gore areas were not modeled becuase receptors in these areas are likely to result in reduced concentrations.		
14		Modelopt		Assuming all terrain is flat is a conservative approach. However, please provide a rationale behind selecting either "flat" or "flat & elevated" terrain for the intersections. For instance, Power, Elliott, and Guadalupe Roads are designated as "flat & elevated," yet the terrain and hill height are set to 0 meters for Power and Elliott Roads, while Guadalupe Road has the terrain height set to 6 meters, despite all these locations featuring overpasses. Additionally, Ellsworth and Meridian Roads are designated as "flat" terrain, even though Ellsworth has an overpass while Meridian does not.	When selecting "flat & elevated" terrain, we assigned some roadway source base elevations (For example, in Elliot run, 6 meter for freeway mainline bridge section above cross street ground elevation) to represent the real elevation difference in reality. If we use "flat" terrain, the analysis would be too conservative and the results would exceed limits.	Thank you for your response. We understand that this approach is conservative, but it is inconsistently applied to the intersections. Please see the following table (to the right) comparing the values for the various intersections, and provide further explanation for why Guadalupe road was modeled differently than the others.	Thanks for the question. The SR202L mainline is depressed going under the Guadalupe cross street. So we modeled the ground level at assumed elevation of 6 meter, that way we could modeled the SR202 mainline beneath the Guadalupe cross street at 0 meter elevation (no negative elevation can be assigned in AERMOD). For other TIs (Elliot, Ellsworth, Meridian, Power), the SR202 or SR24 mainline are elevated going above the cross streets, so we can just assume ground elevation at 0 meter. In the Ellsworth and Meridian TI runs, we modeled just with flat terrain because the traffic volumes are relative low on SR24, and using flat terrain would not trigger the concentration exceedance. However, in the Elliot, Guadaluple, or Power Rd TI scenarios on SR202 mainline, using flat terrain would trigger concentration exceedances, so we refined the models and used different elevations at the TI to represent the real situation. Hope this explanation help!
14		UrbanOPT		The website that is linked to the population of Phoenix AZ states that the population is 1,673, 164 in 2024. We recommend updating this number to reflect the most recent data.	will revise the population to 1,673,164.		
14		1		Please provide an explanation of how the initial lateral dimension (7 meters) was determined, ensuring that the approach aligns with one of the methodologies outlined in the Transportation Conformity Guidance (p. J-5).	We used 7 meter for the volume source plume width for two lanes. The initial lateral dispersion coefficient (Syinit in AERMOD) is calculated by dividing the initial width by 2.15. see highlighted calculated Syinit of 3.26, which is derived from 7/2.15 =3.26 		
15		Urban or Rural Sources		It is stated that the emission sources are "SR 303L and I-17 mainlines, ramps, frontage roads, and cross streets," however these highways are not near this project. Is this a typo?	Thanks for pointing that out. It is a typo, will revise.		
15		Receptors		Several receptors are positioned within 5 meters of a roadway edge, likely due to the use of a standardized network function, as per the PM Hot-spot guidance (p. 79). It is recommended to relocate these receptors further from the road edge or ensure their values are excluded from design concentration calculations or use area sources. This recommendation applies unless the receptors are located on public sidewalks, bus shelters, or bike paths.	Will make sure the receptors are placed 5 meters from the roadway edge unless the receptors are located on public sidewalks, bus shelters, or bike paths.		
15		Receptors		Several receptors are within the exclusion zone of sources, including 2 near Elliot Road, 7 near Ellsworth Road, 4 near Guadalupe Road, 3 near Meridian Road, and 1 near Power Road. The PM Hot-spot guidance (p. J-5) requires source-receptor spacing in AERMOD to be longer than the distance between adjacent volume sources, as emissions within this exclusion zone will not be measured.	Will move receptors outside of exclusion zone of sources, some receptors within exclusion zones are because they are on the sidewalks.		
15		Receptors		Several receptors are positioned within 5 meters of a roadway edge, likely due to the use of a standardized network function, as per the PM Hot-spot guidance (p. 79). It is recommended to relocate these receptors further from the road edge or ensure their values are excluded from design concentration calculations or use area sources. This recommendation applies unless the receptors are located on public sidewalks, bus shelters, or bike paths.	Will make sure the receptors are placed 5 meters from the roadway edge unless the receptors are located on public sidewalks, bus shelters, or bike paths.		
15		Receptors		Please provide imaging of the no-build receptor layout to ensure that receptors are placed in the same geographic locations in both the build and no build scenarios. This alignment allows for direct comparisons between the design concentrations calculated at each receptor, as per PM Hot-spot guidance (p. 80).	Our modeling is only for build scenario, no-build scenario is not needed if we can demonstrate the project is in compliance in build scenario.		
15		Receptors		There are several locations where receptor grids do not include adjacent sensitive populations and locations. For example, the hospital on Elliot Road, the retirement community on Guadalupe Road, and the house located north of SR 24 on Meridian Road. Although the maximum concentrations are within the current receptor grid configuration compliant with PM Hot-spot guidance (p. 80), extending the receptor grid to include these key locations ensures that potential impacts on sensitive areas are adequately assessed and any variations in pollutant concentrations are accurately captured.	Will include receptors in these areas with larger spacing due to further distances to the sources in the next submittal.		

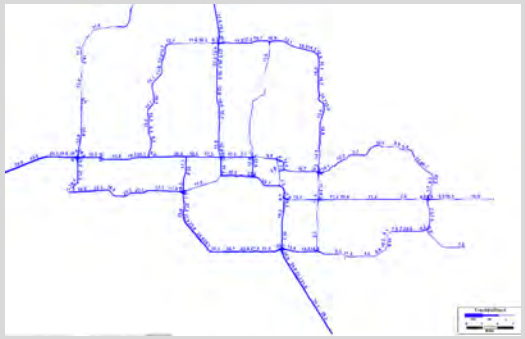
Location	Terrain	Hill	Flagpole	Designation	Overpass?
Elliott	0	0	1.8	Flat & Elevated	Y
Ellsworth	N/A	N/A	1.8	Flat	Y
Guadalupe	6	0	1.8	Flat & Elevated	Y
Meridian	N/A	N/A	1.8	Flat	N
Power	0	0	1.8	Flat & Elevated	Y

16		Background Monitor		The monitor selected to measure background concentration is strategically positioned near and upwind of the proposed project site. Additionally, it is a conservative choice, as the wind rose (page 24) indicates that 15% of the wind originates from the east, where the Mesa airport is situated, thereby reinforcing the conservative nature of the selection. However, Table 1 (page 16) mentions that the monitor has similar characteristics to the project area, including density, mix of emission sources, land use, terrain, etc., and exhibits concentrations most comparable to the project area. Please provide detailed information to substantiate these observations.	Thanks for providing additional justification. Detailed information is provided below. 	Thank you for including adding this information. Is there a windrose for the project area that could be used for comparsion purposes and/or another monitor in the area that could be compared? We would like to ensure that the best monitor was selected and would like to see additional rationale/data for why this monitor was selected	We double checked, and unfortunately there is no windrose for the project area or other PM monitor within 10 mile radius of the proeject boundary. Higley monitor is the closest and most representative of the project characteristics. We included this comparision table in the consultation document for addtional justification.
			Modeling Files	Please provide a possible explanation for the unusual concentration gradient simulated south of the Guadalupe Road intersection. It could be related to the presence of the empty lot to the west of SR-202. However, a justification would provide assurance that the source was captured adequately.	This could be the related to the traffic volume and speed variations on different SR202 segments, along with the meteorological effect on the analysis.	If this pattern persists in the next round of modeling files, we would like to see a more detailed elaboration on the cause of this analomy that is supported by data.	We looked into this issue more deeply. The reason is becuase concentratin contours may not be so accurate until we place more receptors in that concerned area for calculation; so we modeled more receptors between NB SR202 mainline and NB Guadalupe Rd offramp, as shown in the red cloud area for additional receptors on the right figure. As you can see from the figure, this unusual concentration gradient is fixed after we modeled more receptors in the unsual concentration gradient area.
			Modeling Files	Please describe whether the upgraded sidewalks and ramps on Ellsworth Road were accounted for in the modeling, including accurate receptor placement.	Yes, they were accounted for in the modeling, we worked directly in the CADD design files. There are a few receptors are within exclusion zone because they are placed on the cross street sidewalks.		
			Atypical Events Document	Upon reviewing the draft atypical events report, the evidence for Oct 1, 2023 is not very compelling as currently written. We recommend switching out this atypical event analysis with July 14, 2024. This switch would keep the design concentration at 107 and has more compelling evidence (Concentration spiked to 1423 µg/m3 at 20:00 and remained elevated for the remainder of the day, Peak wind speed on the 14th was 42 mph, Average wind speed for 20:00 hour was 26 mph and gusts were 41 mph. Visibility at this time dropped from 9.94 to 1.00, The METAR reports blowing, dust, rain, and thunderstorms, Following 20:00, wind gusts remained >25 mph for the remainder of the day, The NWS issued a dust storm warning for Maricopa County on this day. There is ample news coverage of this event to add as supporting evidence)	Will switch out Oct 1, 2023 with July 14, 2024.		

ARIZONA DEPARTMENT OF TRANSPORTATION

Interagency Consultation Comments

Project Name:	SR24, SR202L to Ironwood Road	**Name: Chris Dresser**	
Project Number(s):	F0719	**Agency: FHWA**	
Document Name:	F0719_SR24_Project Level PM Interagency Consultation_05192025; Model		
Document Date:	5/19/25		**COMMENT RESOLUTION**
			For ADOT USE

Page Number	Paragraph	Table	Other	Comment	Response Notes
6			General	The overall truck percentages reported in Table 1 of of the consultation document seem to be quite low. The truck percentage for the mainline freeway is approximately 10 percent of the total volumes. When the truck percentages are pulled for the restricted road type (freeway) from the regional conformity analysis, the truck percentage is calculated to be 23 percent. Is there a reason this particular project has less than half the typical freeway truck percentage in Maricopa county? (This is relevant since truck fractions are being adjusted down for the MOVES linksourcetype input to account for these project specific truck percentages). I recall for El Mirage, the project-specific truck percentages were much higher than the regional mix and were actually adjusted up.	Per MAG email "below is a screenshot of the truck volume(heavy + median truck) percentage across our modeling region. We can see interstate normally carry more truck and it will boost up the average truck volume percentage. I found the similar patterns in different years' model result and I can confirm that there was no special changes to the scenario model, so we think the lower truck percentage in your project area is valid. " 
6			General	I agree with EPA that a conversation is needed about why it is necessary to group light commercial trucks (source type 32) with medium duty trucks. Our latest understanding is that they are mapped to this category during the vehicle assignment process in the TDM... In any case, the principle impact of this misclassification is that the "total truck AADT Difference (buid-no-build)" in the final column of Table 1 significantly overestimates the diesel trucks being added from the project. Since light commercial trucks (32s) are being defined as "medium trucks" and then summed together with heavy trucks to determine the total truck AADT difference, these values would overestimate the actual diesel trucks being added (nearly all 32s use gasoline fuel, as well as some of the other "medium duty" vehicle categories.) I think in addition to getting clarifcation on why 32s are being defined as medium duty, we should discuss if there's a better way to report the added truck volumes from the project in the consultation document. For this project, the actual diesel trucks being added is significantly less that what is reported.	ADOT agrees on the recommendation that the source type 32 (Light Commercial Truck) belong to the Light Vehicle category as a more conservative methodology. ADOT will change the current calculations to "cars (11,21,31,32) and trucks (41-62)" for the future projects including this F0719 project.
			General	I reviewed the modeling files and everything appears to be correct, consistent with the consultation document, and consistent with relevant EPA guidance. Additionally, the AERMOD emission rates appear to be correctly calculated from the MOVES rates/roaddust and source characteristics.	Thanks for the comment

			General	As mentioned in EPA's comments, please review AERMOD input files and correct any receptors that fall within the receptor exclusion zone. This can be addressed by either adjusting the size of the volume sources or moving the receptors (if appropriate).	Will double check and move the receptor outside of exclusion zone.
			General	Please add additional discussion and justification for excluding the other intersections/sections of the project from modeling. Specifically, I'm especially concerned about why the interchange of 202 and 24 is not being modeled. This will likely be the area of highest concentration since you have the highest AADT roadways in the project area converging.	Will add additional discussion and justification for excluding the other intersections/sections of the project from modeling. That is mainly because the AADT volumes and truck volumes are less in those intersections than selected intersections for analyis. Will include SR202 and SR24 TI and associated Hawes Rd intersections for analysis.
14			AERMOD	Consultation document indicates 1.0 would be used as the base rate. Volume sources in the modeling files actually used a unique rate as calculated by AERMOD view - based on number of volume sources and applied to the EMISFACT factors.	Will revise to say "use a unique rate as calculated by AERMOD view - baased on number of volume sources aandd applied to the EMISFACT factors"

Gmail Beverly Chenausky <bchenausky@azdot.gov>

RE: Interagency Consultation: SR 24, SR202L to Ironwood Drive 024-A(201)T | 024 MA 000 F0719 01D/02D

2 messages

Beverly Chenausky <bchenausky@azdot.gov> Thu, Aug 7, 2025 at 12:44 PM
Draft To: "Wickersham, Lindsay" <wickersham.lindsay@epa.gov>, "Dresser, Christopher (FHWA)" <christopher.dresser@dot.gov>, Matthew Poppen <mpoppen@azmag.gov>, "FHWA, Arizona (FHWA)" <arizona.fhwa@dot.gov>, "Johanna.Kuspert@maricopa.gov" <johanna.kuspert@maricopa.gov>, Transportationconformity <transportationconformity@azdeq.gov>
Cc: Dean Giles <dgiles@azmag.gov>, "axia@azmag.gov" <axia@azmag.gov>, "kimberly.butler@maricopa.gov" <kimberly.butler@maricopa.gov>, "Ron Pope (AQD)" <Ron.Pope@maricopa.gov>, "Kristi.Beck@maricopa.gov" <Kristi.Beck@maricopa.gov>, "Oconnor, Karina" <OConnor.Karina@epa.gov>, Caitlyn Zaremba <zaremba.caitlyn@azdeq.gov>, ADOTAirNoise - ADOT <adotairnoise@azdot.gov>, David Shu <DShu@aztec.us>, Simran Singh <ssingh@aztec.us>, "Justin S. Hoppmann" <JHoppmann@aztec.us>, "Melita, Gary" <MelitaGary@stanleygroup.com>, "Lastovica, Cole" <LastovicaCole@stanleygroup.com>, Julia Manobianco <jmanobianco@azdot.gov>, Tricia Brown <tbrown2@azdot.gov>, Katie Rodriguez <krodriguez@azdot.gov>, MPD Programming - ADOT <mpdprogramming@azdot.gov>, "Seeds, Amy" <Seeds.Amy@epa.gov>, "Barry, Laura" <Barry.Laura@epa.gov>, "Menzo, Zachary" <Menzo.Zachary@epa.gov>, "Foster, Anissa" <Foster.Anissa@epa.gov>

Interagency Consultation Emails below

[Quoted text hidden]

7.16.25 EPA Comments_IAC Comment Form_F0719_EPA 6-18-2025_ADOT Response.xlsx
530K

Wickersham, Lindsay <wickersham.lindsay@epa.gov> Wed, Jul 16, 2025 at 6:56 PM
To: Beverly Chenausky <bchenausky@azdot.gov>, "Dresser, Christopher (FHWA)" <christopher.dresser@dot.gov>
Cc: "FHWA, Arizona (FHWA)" <Arizona.FHWA@dot.gov>, Matthew Poppen <MPoppen@azmag.gov>, "Johanna.Kuspert@maricopa.gov" <Johanna.Kuspert@maricopa.gov>, Transportationconformity <transportationconformity@azdeq.gov>, Dean Giles <dgiles@azmag.gov>, "axia@azmag.gov" <axia@azmag.gov>, "kimberly.butler@maricopa.gov" <kimberly.butler@maricopa.gov>, "Ron Pope (AQD)" <Ron.Pope@maricopa.gov>, "Kristi.Beck@maricopa.gov" <Kristi.Beck@maricopa.gov>, "Oconnor, Karina" <OConnor.Karina@epa.gov>, Caitlyn Zaremba <zaremba.caitlyn@azdeq.gov>, ADOTAirNoise - ADOT <adotairnoise@azdot.gov>, David Shu <DShu@aztec.us>, Simran Singh <ssingh@aztec.us>, "Justin S. Hoppmann" <JHoppmann@aztec.us>, "Melita, Gary" <MelitaGary@stanleygroup.com>, "Lastovica, Cole" <LastovicaCole@stanleygroup.com>, Julia Manobianco <jmanobianco@azdot.gov>, Tricia Brown <tbrown2@azdot.gov>, Katie Rodriguez <krodriguez@azdot.gov>, MPD Programming - ADOT <mpdprogramming@azdot.gov>, "Seeds, Amy" <Seeds.Amy@epa.gov>, "Barry, Laura" <Barry.Laura@epa.gov>, "Menzo, Zachary" <Menzo.Zachary@epa.gov>, "Foster, Anissa" <Foster.Anissa@epa.gov>

Hi Beverly,

Thank you for the responses to our comments. At this time the modeler assigned to this project has finished reviewing your responses and has a few follow ups. This will not impact the modeling, but we are still requesting responses and that this also be included in the documentation for this project.

I have included our follow up questions to the attached IAC form.

Thank you and please let me know if you have any questions,

Lindsay

Lindsay Wickersham | 415-947-4192

Physical Scientist | Planning Section | Air and Radiation Division | US EPA - Region 9

From: Beverly Chenausky <bchenausky@azdot.gov>
Sent: Monday, July 7, 2025 11:47 AM
To: Dresser, Christopher (FHWA) <christopher.dresser@dot.gov>
Cc: Wickersham, Lindsay <wickersham.lindsay@epa.gov>; FHWA, Arizona (FHWA) <Arizona.FHWA@dot.gov>; Matthew Poppen <MPoppen@azmag.gov>; Johanna.Kuspert@maricopa.gov; Transportationconformity <transportationconformity@azdeq.gov>; Dean Giles <dgiles@azmag.gov>; axia@azmag.gov; kimberly.butler@maricopa.gov; Ron Pope (AQD) <Ron.Pope@maricopa.gov>; Kristi.Beck@maricopa.gov; Meek, Clifton <meek.clifton@epa.gov>; Oconnor, Karina <OConnor.Karina@epa.gov>; Caitlyn Zaremba <zaremba.caitlyn@azdeq.gov>; ADOTAirNoise - ADOT <adotairnoise@azdot.gov>; David Shu <DShu@aztec.us>; Simran Singh <ssingh@aztec.us>; Justin S. Hoppmann <JHoppmann@aztec.us>; Melita, Gary <MelitaGary@stanleygroup.com>; Lastovica, Cole <LastovicaCole@stanleygroup.com>; Julia Manobianco <jmanobianco@azdot.gov>; Tricia Brown <tbrown2@azdot.gov>; Katie Rodriguez <krodriguez@azdot.gov>; MPD Programming - ADOT <mpdprogramming@azdot.gov>; Seeds, Amy <Seeds.Amy@epa.gov>; Barry, Laura <Barry.Laura@epa.gov>; Menzo, Zachary <Menzo.Zachary@epa.gov>; Foster, Anissa <Foster.Anissa@epa.gov>
Subject: Re: Interagency Consultation: SR 24, SR202L to Ironwood Drive 024-A(201)T | 024 MA 000 F0719 01D/02D

Hi all,

Please see the attached responses to the comments for the project, **SR 24, SR202L to Ironwood Drive,** for interagency consultation, per 40 CFR 93.105.

If additional clarifications are needed the project team will be available on Thursday, meeting link included below.

ADOT Transportation Conformity Coordination
Thursday, July 10 · 11:00am – 12:00pm
Time zone: America/Phoenix
Google Meet joining info
Video call link: https://meet.google.com/usc-ivuz-eof
Or dial: (US) +1 585-667-0052 PIN: 813 049 123#
More phone numbers: https://tel.meet/usc-ivuz-eof?pin=9640464285692

Beverly Chenausky

Assistant Environmental Administrator

ENVIRONMENTAL PLANNING

205 South 17th Ave.

Phoenix AZ 85007
480.390.3417 | azdot.gov

On Tue, Jun 24, 2025 at 8:30 AM Dresser, Christopher (FHWA) <christopher.dresser@dot.gov> wrote:

I have completed my review of the consultation document and modeling files - please see the attached comments. Looking forward to discussing.

-Chris

From: Wickersham, Lindsay <wickersham.lindsay@epa.gov>
Sent: Wednesday, June 18, 2025 9:39 AM
To: bchenausky azdot.gov <bchenausky@azdot.gov>; FHWA, Arizona (FHWA) <Arizona.FHWA@dot.gov>; Matthew Poppen <MPoppen@azmag.gov>; Johanna.Kuspert@maricopa.gov; Transportationconformity <transportationconformity@azdeq.gov>
Cc: Dresser, Christopher (FHWA) <christopher.dresser@dot.gov>; Dean Giles <dgiles@azmag.gov>; axia@azmag.gov; kimberly.butler@maricopa.gov; Ron Pope (AQD) <Ron.Pope@maricopa.gov>; Kristi.Beck@maricopa.gov; Meek, Clifton <meek.clifton@epa.gov>; Oconnor, Karina <OConnor.Karina@epa.gov>; Caitlyn Zaremba <zaremba.caitlyn@azdeq.gov>; ADOTAirNoise - ADOT <adotairnoise@azdot.gov>; David Shu <DShu@aztec.us>; Simran Singh <ssingh@aztec.us>; Justin S. Hoppmann <JHoppmann@aztec.us>; Melita, Gary <MelitaGary@stanleygroup.com>; Lastovica, Cole <LastovicaCole@stanleygroup.com>; Julia Manobianco <jmanobianco@azdot.gov>; Tricia Brown <tbrown2@azdot.gov>; Katie Rodriguez <krodriguez@azdot.gov>; MPD Programming - ADOT <mpdprogramming@azdot.gov>; Seeds, Amy <Seeds.Amy@epa.gov>; Barry, Laura <Barry.Laura@epa.gov>; Menzo, Zachary <Menzo.Zachary@epa.gov>; Foster, Anissa <Foster.Anissa@epa.gov>; FHWA, Arizona (FHWA) <Arizona.FHWA@dot.gov>
Subject: RE: Interagency Consultation: SR 24, SR202L to Ironwood Drive 024-A(201)T | 024 MA 000 F0719 01D/02D

Hi Everyone,

Thank you for the opportunity to review this project and the associated modeling files and draft atypical events report. At this time EPA has finished our review and have compiled the attached suggestions for your consideration.

We would like to request a separate technical meeting to address source type 32s being grouped in with diesel vehicles. We would like to correct this before we finalize the modeling. Please also note the last row of the table suggesting a change in the dates to the draft atypical events report. We are happy to provide more information on this, as well as any of our suggestions.

Thank you again and we look forward to working together on this project. Please do not hesitate to reach out with any questions or follow ups.

Lindsay

Lindsay Wickersham | 415-947-4192

Physical Scientist | Planning Section | Air and Radiation Division | US EPA - Region 9

From: Beverly Chenausky <bchenausky@azdot.gov>
Sent: Monday, May 19, 2025 4:04 PM
To: Arizona FHWA <arizona.fhwa@dot.gov>; Matthew Poppen <MPoppen@azmag.gov>; Johanna.Kuspert@maricopa.gov; Wickersham, Lindsay <wickersham.lindsay@epa.gov>; Transportationconformity <transportationconformity@azdeq.gov>
Cc: Dresser, Christopher (FHWA) <christopher.dresser@dot.gov>; Noel, George (FHWA) <George.Noel@dot.gov>; Dean Giles <dgiles@azmag.gov>; axia@azmag.gov; kimberly.butler@maricopa.gov; Ron Pope (AQD) <Ron.Pope@maricopa.gov>; Kristi.Beck@maricopa.gov; Meek, Clifton <meek.clifton@epa.gov>; Oconnor, Karina <OConnor.Karina@epa.gov>; Caitlyn Zaremba <zaremba.caitlyn@azdeq.gov>; ADOTAirNoise - ADOT <adotairnoise@azdot.gov>; David Shu <DShu@aztec.us>; Simran Singh <ssingh@aztec.us>; Justin S. Hoppmann <JHoppmann@aztec.us>; Melita, Gary <MelitaGary@stanleygroup.com>; Lastovica, Cole <LastovicaCole@stanleygroup.com>; Julia Manobianco <jmanobianco@azdot.gov>; Tricia Brown <tbrown2@azdot.gov>; Katie Rodriguez <krodriguez@azdot.gov>; MPD Programming - ADOT <mpdprogramming@azdot.gov>
Subject: Interagency Consultation: SR 24, SR202L to Ironwood Drive 024-A(201)T | 024 MA 000 F0719 01D/02D

To All:

ADOT, in coordination with the City of Peoria, is presenting the following project, **SR 24, SR202L to Ironwood Drive,** for interagency consultation, per 40 CFR 93.105. The Purpose of the attached document (*F0719_SR24_Project Level PM Interagency Consultation_05192025.pdf)* is to describe the methods, models and assumptions used for a quantitative hot-spot analysis as required in 40 CFR 93.105(c)(1)(i)(ii), 93.123, and 93.116. It is requested that the consulted parties provide comments or questions on the methods, models and assumptions **within 30 days,** a non-response will be interpreted as concurrence with the planning assumptions as described in the attached PM10 modeling document.

This project will also include an atypical events report, due to email size limitations, additional links to supporting material is provided in a separate attachment *(F0719 Resource Links.pdf)*. The project team will be available to answer any questions and concerns on the planning assumptions, **June 5th, 11am AZ Time** as provided on page 2 of the "links" document. An optional consultation comment form is also attached, please let me know if you have any additional questions. Thank you,

Beverly Chenausky

Assistant Environmental Administrator

ENVIRONMENTAL PLANNING

205 South 17th Ave.

Phoenix AZ 85007
480.390.3417 | azdot.gov

7.16.25 EPA Comments_IAC Comment Form_F0719_EPA 6-18-2025_ADOT Response.xlsx
530K

Attachment A – Meteorological Data Processing Details

The Arizona Department of Environmental Quality (ADEQ) has compiled pre-processed AERMET meteorological data files that could be used for air quality permit applications for sources located in Arizona under ADEQ jurisdiction. Currently pre-processed AERMET meteorological data files are available for 11 National Weather Service (NWS) meteorological stations across Arizona. The following document provides an overview of the dataset specifically tailored to Phoenix Sky Harbor International Airport, hereinafter referred to as "Sky Harbor Airport."

Meteorological Data

The AERMET meteorological preprocessor requires input of hourly observations of wind speed, wind direction, cloud cover, and ambient temperature. A full morning upper air sounding (rawinsonde) is also required in order to calculate the convective mixing height throughout the day.

In the Phoenix metropolitan area, there are several NWS stations; however, among them, Sky Harbor Airport is the sole Automated Surface Observing Stations (ASOS) station that provides 1-minute or 5-minute wind data. This data is especially valuable because the EPA's AERMINUTE meteorological processor can process 1-minute and 5-minute wind data to reduce the occurrences of calms and missing wind observations. As such, the data from Sky Harbor Airport is considered the most comprehensive and dependable source of surface observations within the Phoenix metropolitan area.

AERMET utilizes upper air data sourced from the NWS Rawinsonde Network. In Arizona, there are two rawinsonde stations, Tucson and Flagstaff. The Tucson rawinsonde station is located in a similar climatic region and is most representative of upper air conditions at the Phoenix metropolitan area.

ADEQ obtained standard hourly weather observations from the National Centers for Environmental Information (NCEI) websites:

NCEI's Integrated Surface Hourly Data (ISHD) TD-3505
ftp://ftp.ncdc.noaa.gov/pub/data/noaa/
NCEI's 1-Minute ASOS Wind Data
ftp://ftp.ncdc.noaa.gov/pub/data/asos-onemin/

Upper air data are available at the Earth System Research Laboratory Global Systems Divisions web site:
http://esrl.noaa.gov/gsd

Completeness of Meteorological Data

Section 5.3.2 of "Meteorological Monitoring Guidance for Regulatory Modeling Applications" states that, to be acceptable for use in regulatory dispersion modeling, a meteorological dataset must be 90% complete on a quarterly basis. The 90% requirement applies to wind direction, wind speed, and temperature. The data completeness for each year of processed data for input to AERMOD is presented in Table 1.

Table 1 Meteorological Data Completeness

Year	Quarter	Wind Direction	Wind Speed	Temperature	Cloud Cover
2017	1	99.72%	100.00%	100.00%	100.00%
2017	2	99.86%	99.91%	100.00%	100.00%
2017	3	99.82%	100.00%	100.00%	100.00%
2017	4	99.82%	99.86%	99.68%	99.68%
2018	1	99.68%	100.00%	100.00%	100.00%
2018	2	99.95%	99.95%	100.00%	100.00%
2018	3	98.60%	100.00%	100.00%	100.00%
2018	4	99.68%	99.86%	99.68%	99.68%
2019	1	97.50%	100.00%	99.95%	100.00%
2019	2	99.50%	100.00%	100.00%	100.00%
2019	3	99.46%	99.95%	100.00%	100.00%
2019	4	99.50%	99.91%	99.64%	99.68%
2020	1	100.00%	100.00%	100.00%	100.00%
2020	2	99.91%	100.00%	100.00%	100.00%
2020	3	99.73%	100.00%	100.00%	100.00%
2020	4	99.41%	99.73%	99.68%	99.68%
2021	1	99.77%	100.00%	100.00%	100.00%
2021	2	99.36%	100.00%	100.00%	100.00%
2021	3	99.50%	100.00%	100.00%	100.00%
2021	4	99.59%	99.86%	99.68%	99.68%

Due to the missing data both in surface and upper air observations, the entire model-ready meteorological dataset (PFL and SFC files) has a completeness of 99.15%, which meets the completeness requirements for regulatory modeling purposes.

Meteorological Data Processing

ADEQ used AERMET (version 22112) and AERMINUTE (version 15272) to process five years (2017-2021) of surface meteorological data obtained from Sky Harbor Airport along with concurrent upper air radiosonde data obtained from Tucson. ADEQ also used the EPA's AERSURFACE tool (version 20060) to calculate surface characteristic parameters (albedo, Bowen ration and surface roughness) required by AERMET.

There are two stages of data processing in AERMET. Stage 1 extracts the meteorological data from the input data files (the NWS surface file and the upper air data file), processes the data through various quality assessment checks, and creates intermediate files in a standardized AERMET format. The second stage reads the output from Stage 1, calculates the boundary layer parameters required by AERMOD, and generates two AERMOD-ready meteorological data files. AERMINUTE processes 1-minute ASOS wind data to generate hourly average winds for input to AERMET in Stage 2. Based on the EPA's guidance for AERMINUTE, ADEQ applied a minimum wind speed threshold of 0.5 m/s to the hourly averaged wind speeds provided by AERMINUTE.

Stage 2 also requires the input of surface characteristic data that are used to estimate boundary layer parameters. National Land Cover Data 2016 (NLCD 2016) obtained from the U.S. Geological Survey was input to AERSURFACE. In addition to the NLCD 2016 data, the following inputs were used:

Method for determining surface roughness length – ZORAD;
Study radius for surface roughness (km) – 1 kilometer;
Number of sectors – 12;
Temporal resolution – Monthly;
Continuous snow cover most of the winter? – No;
Meteorological tower at an airport? – Yes;
Arid Region? – Yes;
Surface Moisture? - [Dry, Average or Wet, ***see below****]*
Month/Season assignments - User-specified
Transitional spring (partial green coverage, short annuals): 2 3 4 5 6
Midsummer with lush vegetation: 7 8 9 10
Autumn with unharvested cropland: 1 11 12

ADEQ determined the surface moisture inputs by comparing annual precipitation for a specific year to the 30-year climatological record of annual precipitation for Sky Harbor Airport. Per the EPA guidance for AERSURFACE, "Dry" is applied if the precipitation is below the 30th percentile of the 30-year climate record, "Wet" is applied if the precipitation is above the 70th percentile of the 30-year climate record, and "Average" is used if the precipitation is between the 30th and 70th percentiles. The resulting surface moisture inputs, as determined by this methodology, are summarized in Table 2.

Table 2 Surface Moisture Inputs

Year	Surface Moisture Inputs
2017	Dry
2018	Wet
2019	Average
2020	Dry
2021	Average

To address issues with model overprediction due to underprediction of the surface friction velocity (u*) during light wind/stable conditions, EPA has integrated the ADJ_U* option into the AERMET. Based on the EPA's evaluations, using the ADJ_U* option is appropriate when standard NWS data are used. Therefore, ADEQ incorporated the ADJ_U* option as a regulatory option in the data processing.

Appendix B

ATYPICAL EVENTS REPORT

Arizona Department of Transportation

Environmental Planning

Draft Atypical Events Report

SR 24, SR 202L (Santan) – Ironwood Drive

Federal Project No. 024-A(201)T
ADOT Tracs No. 024 MA 000 F0719 01D/02D

August 4, 2025
Submittal Number 2

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. 326 [23 U.S.C. 327] and a Memorandum of Understanding dated January 4, 2021 [April 16, 2019], and executed by FHWA and ADOT.

Contents

Introduction

This report aims to provide the United States Environmental Protection Agency (U.S. EPA) with a robust rationale for the exclusion of four specific dates from the background particulate matter (PM) concentration data for a project to construct improvements to State Route (SR) 24 between SR Loop 202 (SR 202L) and Ironwood Drive. These dates stand out as atypical when compared to the air quality levels and meteorological conditions of the project site. Consequently, the U.S. EPA seeks justification for categorizing these dates as atypical events that warrant their removal from the background concentration analysis.

This report demonstrates that these dates and their instances of exceeding the National Ambient Air Quality Standards (NAAQS) for 24-hour particulates measuring 10 microns or less (PM_{10}) should be disregarded in the projects' PM10 background concentration calculations and the projects assessments of NAAQS exceedance or violations. This recommendation is made due to the dates' air quality characteristics being unique and uncontrollable due to meteorological conditions, which distinguishes them from typical conditions at the project site. This report provides an introductory summary of the project and the regulatory purpose of the report, the projects calculated PM10 background concentrations before and after removing the dates considered atypical to that of standard air quality conditions, and a description of the dates meteorological and air quality conditions that occurred and resulted in 24-hour PM_{10} NAAQS exceedance.

1.0 Project Description

The Arizona Department of Transportation (ADOT) has initiated a project to construct improvements to State Route (SR) 24 between SR Loop 202 (SR 202L) and Ironwood Drive. The project is located on SR 24 between milepost (MP) 0.00 and MP 5.64 and SR 202L between MP 31.57 to MP 37.70 within the City of Mesa, Town of Queen Creek, Town of Gilbert, and unincorporated areas in Maricopa County and Pinal County, Arizona (see enclosed **Figures 1** and **2**).

In 2014 the initial segment of SR 24 between SR 202L and Ellsworth Road was opened to traffic. In 2023 the second segment of SR 24 between Ellsworth Road and Ironwood Drive was completed in an interim condition. The purpose of the project is to widen SR 24 to accommodate two additional general-purpose lanes between Ellsworth Road and Ironwood Drive, resulting in three new bridges over existing crossroads at Williams Field, Signal Butte, and Meridian Road and widening the existing SR 24 bridge over Mountain Road. Roadway and bridge widening over Power Road and the East Maricopa Floodway is proposed along SR 202L to provide lane continuity and additional traffic capacity to and from the SR 24/SR 202L system traffic interchange (TI). The need for the project is to construct improvements to accommodate increased traffic demand.

The scope of work for the project consists of:

- Adding two additional travel lanes on SR 24 in each direction between Ellsworth Road and Ironwood Drive (3+ auxiliary)
- Adding new three-lane approaches and traffic interchange overpass structures (TIOP) at Williams Field Road, Signal Butte Road, and Meridian Road
- Widening the existing grade separated structures at Mountain Road
- A new four-lane bridge over SR 24 along the Crismon Road alignment
- Adding ramp connector roads between SR 202L and the Ellsworth Road intersection including structures over Ray and Hawes Road, a service ramp, and the Powerline Floodway
- Restriping portions of the directional system TI ramps from one lane to two lanes
- Adding an outside general purpose travel lane on the northbound SR 202L between SR 24 and Guadalupe Road
- Reconstructing NB SR 202L exit and entrance ramps at the Elliott Road TI and the exit ramp at Guadalupe Road TI
- Modifying existing on-site roadway drainage system to accommodate additional lanes
- Installing and upgrading signing and pavement markings
- Installing ITS/FMS, traffic signals, and lighting
- Placing seeding on SR 24
- Restoring landscaping and irrigation on SR 202L
- Upgrading sidewalks and ramps to be ADA compliant on Ellsworth Road
- Removing existing SR 202L AR-ACFC and resurfacing by diamond grinding the roadway surface on both directions between Recker Road to Guadalupe Road
- Widening WB SR 202L from the Power Road WB exit ramp to Recker Road including both Power Road ramps
- Widening EB SR 202L between the Power Road entrance and exit ramps including both Power Road ramps
- Widening the existing SR 202L structures over Power Road and the Eastern Maricopa Floodway
- Replacing deck joints on existing SR 202L structures within the project limits
- Constructing new retaining and sound walls and screen walls if needed
- Conducting geotechnical investigations consisting of structure and roadway borings

- Replacing sign panels and removing sign lighting at three SB SR 202L locations north of Guadalupe Rd
- Reconstructing the existing half-diamond intersection of SR 24 at Ironwood Drive to a half diverging diamond intersection (DDI)
- Repairing a pavement crack on the system TI NW Ramp

This project is within the Phoenix CO maintenance area and a nonattainment area for PM_{10}. The proposed project is included in the Maricopa Association of Governments (MAG) Regional Transportation Plan (RTP) MOMENTUM 2050. In addition, the project is included in the FY 2022-2025 MAG Transportation Improvement Program.

2.0 Regulatory Standards

Per U.S. EPA guidelines, specific transportation projects now necessitate a quantitative assessment of PM_{10} impacts in proximity to roadways. This PM hotspot evaluation entails includes estimating the background PM_{10} concentration levels associated with all sources not explicitly included in the modeling for the project. In part, this estimation involves using a 3-year dataset of historical air quality information to establish the PM_{10} background value. This calculated background value is then added to the project's modeled PM_{10} values to determine if the project's emissions might result in exceeding the National Ambient Air Quality Standards (NAAQS). Should the background concentration surpass the NAAQS, a build versus no-build project analysis becomes necessary.

40 CFR Part 51, Appendix W, section 8.3 and Hot Spot Guidance Section 8 provide recommendations for determining an appropriate background concentration. 40 CFR Part. 51 (A 2019 clarification memo, "Additional Methods, Determinations, and Analyses to Modify Air Quality Data Beyond Exceptional Events" (available at https://www.epa.gov/air-quality-analysis/clarification-memo-additional-methods-determinations-and-analyses-modify-air) confirms the applicability of that CFR section to transportation conformity hot spot analyses.) Appendix W, Section 8.3.2 recommends that for many cases, the current design value at a nearby, representative monitoring station is the best starting point for a background concentration. However, there may be cases where the current design value is not appropriate. Section 8.3.2.c.ii specifies there may be circumstances which would necessitate modifications to the background concentrations, stating that "[s]uch cases could include removal of data from specific days or hours when a monitor is being affected by activities that are not typical or not expected to occur again in the future (e.g., construction, roadway repairs, forest fires, or unusual agricultural activities). Such adjustments would make the monitored background concentrations more temporally and/or spatially representative of the area around the new or modifying source for the purposes of the regulatory assessment." The data used to determine the background concentration includes 24-hour average pollutant levels and annual means, excluding atypical air quality events. If the chosen 3-year period for determining the project's background concentration encompasses atypical air quality such events, data affected by those events can be excluded from the analysis. This is done to mitigate the influence of outliers unrepresentative in air quality events on the determination of the background concentration of an area data stemming from uncontrollable air quality events, which could lead to NAAQS exceedances[1].

EPA Region 9 recommends examining several criteria for determining whether a high-wind dust event is appropriate to exclude from a project's background concentrations:

1. Hourly and 24-hour average PM_{10} exceedances at multiple air monitors in the specified areas indicating it's a regional air quality event.
2. Windspeed conditions greater than 25 mph consistent with an increase in hourly PM_{10}
3. Reduced visibility to less than 10 miles consistent with increases in hourly PM_{10} concentrations.
4. National Weather Service (NWS) wind/dust advisories consistent with an increase in hourly PM_{10} concentrations.
5. Summaries of dust complaints and/or notices of PM_{10} violations; if dust complaints are received, or dust complaints do not involve anthropogenic source(s) located upwind of an exceeding monitor.

This document regards the four requested days as atypical in their meteorological and PM_{10} characteristics and proposes their removal from the PM "hot spot" background concentration for the project.

[1] U.S. EPA, Guidelines on Air Quality Models, 40 CFR Appendix-W-to-Part-51 8.08.3.2.

The days identified are proposed to be considered atypical events, due to the occurrence of high wind conditions and dust storms. ADOT justifies that it is inappropriate to consider these days when calculating the project's hot spot analysis background PM_{10} concentrations. To provide justification for exclusion of these dates, the report discusses air pollution forecasts issued by Arizona Department of Environmental Quality (ADEQ), National Weather Service (NWS) historical weather forecasts, National Oceanic and Atmospheric Association (NOAA) weather station data, and 24-hour average PM_{10} concentrations for air quality monitoring stations in the general Phoenix metropolitan area (Phoenix Area).

Maricopa County Air Quality Department (MCAQD), as the designated air quality reporting agency for the project, has provided air quality monitoring data for the dates discussed in this report, accessible in **Appendix A**. MCAQD's data has been utilized as a point of reference for the dates under consideration as atypical in this summary report. Details on these dates are provided in **Section 4.0**.

3.0 Project PM_{10} Background Concentrations, Without Removing Atypical Events

There is one monitor in the vicinity of the project site. The Higley PM monitor (Higley) is approximately 1.5 miles south of the project. **Figure 1** identifies the project location below.

Figure 1. Project location map and proximity to Higley monitor.

Using the U.S. EPA's Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas, the project's background PM_{10} levels were calculated for 2022 through 2024 at Higley Monitoring Station. **Table 1** shows the number of completed monitoring days and highest 24-hour typical readings for 2022 through 2024 for Higley monitor.

Using the U.S. EPA's Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas, the 4th highest PM_{10} reading each year between 2022 and 2024 were selected for this project.

Table 1: Project Monitoring station Highest 24-hour PM_{10} Readings, Without Removing Atypical Events

Higley Monitor

Data Year	2022	2023	2024
Number of Readings	362	333	359
1st	160	164	141*
2nd	99	143	110
3rd	88	122	106
4th	86	114	104

Source: https: U.S. EPA Outdoor Air Quality Data, Download Daily Air Quality Data, https://www.epa.gov/outdoor-air-quality-data/download-daily-data
Note: *4th highest 24-hour readings are highlighted in red, without removing atypical events.

Table 1 shows that without considering atypical events, Higley monitor's 4th highest value over three years (2022-2024) is 141 µg/m^3. This comes from a total of 1054 days of sampling.

The predicted background concentration, without removing atypical events, of the project is ***141 µg/m^3.***

Per 40 CFR 50, Appendix K, the Maricopa County NAAQS threshold for PM_{10} 24-hour average concentration threshold is 150 µg/m^3. As such, the predicted PM_{10} background concentration does not exceed the PM_{10} NAAQS threshold. **Table 2** compares the background concentration to the PM_{10} NAAQS threshold.

Table 2: PM_{10} NAAQS Threshold & Projects Calculated Background PM_{10} Concentrations

Higley Monitor

4th Highest 24-hour Average PM_{10} Concentration without Atypical Event Data Exclusion (µg/m^3)	PM_{10} National Ambient Air Quality Standards (NAAQS)	Difference (µg/m^3)	Exceeds Threshold?
141	150	9	No

As shown in **Table 2**, the project PM_{10} background concentrations do not exceed the PM_{10} NAAQS threshold, without removing atypical event day data from the analysis. Although not exceeding the threshold, there are dates within the three-year evaluation period (2022 – 2024) being classified as atypical events (weather conditions attributing to high PM_{10} concentrations). As such, the background concentration levels that include atypical event data during this three-year period are unrepresentative of the project's average PM_{10} background concentration and should not be included in the projects PM_{10} background concentration calculations.

4.0 Atypical Event Days

Hourly and daily PM_{10} data for the years 2022 through 2024 was obtained from air quality monitors in the general Phoenix Area from the EPA AirData website to be evaluated for the projects PM_{10} background concentration calculations. Within these three years of data, the following dates are being proposed to be considered as atypical events:

- September 2nd, 2022
- July 21st, 2023
- July 26th, 2023
- July 14th, 2024

The dates above are being proposed to be excluded from the projects PM_{10} background concentration calculations per guidelines listed in 40 CFR Part 51, Appendix W, Section 8.3.2.c.ii for the 40 CFR Part 53 transportation conformity portion of the project. Monitoring data for these four days proposed to be removed was obtained from MCAQD's monitoring records and EPA and was reviewed to ensure that it meets the U.S. EPA's 75% data completeness criteria[2]. **Table 3** summarizes the days recommended for exclusion due to atypical-type events.

The four days proposed for removal from the background concentration analysis are considered atypical in nature because they fit the EPA Region 9's 5-criteria for the data background modification of atypical events (Section 2.0). For the days proposed, Higley and other surrounding monitoring sites showed hourly and 24-hour average PM_{10} NAAQS exceedances, and the Phoenix Area's windspeed conditions were recorded to be greater than 25 mph. The high wind conditions time series data recorded on these dates coincides with an increase in hourly PM_{10} concentrations throughout the Arizona region. These increases in PM_{10} concentrations are consistent with reduced visibility to less than 10 miles as identified in NWS, NOAA Storm Event Reports, ADEQ pollution reports, wind dust advisories, dust complaints received, and notices of PM_{10} violations.

The Higley monitor, chosen as the project's background monitor, did not record PM_{10} NAAQS exceedances on every exceedance day listed for Maricopa County between 2022 and 2024. However, given the regional nature of these atypical events, even on region wide exceedance days in which Higley did not exceed NAAQS, the PM_{10} concentrations at this site may not reflect its typical background concentrations. This is because elevated PM_{10} concentrations were recorded across the Phoenix Area during these atypical events, as documented by other monitors that did record exceedances on those dates. As such, to accurately demonstrate the regional nature and widespread impact of these atypical events, data from other regional monitors will be reviewed on days that Higley monitor did not exceed, to properly distinguish typical background levels from the atypical event-driven exceedance anomalies noted for these dates throughout Maricopa County. Wind and PM_{10} concentration data at Higley monitor and additional monitors is provided and discussed, to demonstrate the impact of the atypical weather conditions not only on the Phoenix Area, but on the background concentration at Higley monitor for each date being proposed as atypical. **Table 3** lists Higley monitor's PM_{10} concentrations for each of the days discussed in this report, and additional monitors that exceeded 24-hour average PM_{10} NAAQS on these dates in Maricopa County.

[2] U.S. EPA, Office of Air Quality Planning and Standards, Guideline on Data Handling Conventions for the PM NAAQS, April 1999, Table 8-1. Accessed September 17th, 2023. https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/19990401_oaqps_epa-454_r-99-009_guideline_data_handling_pm_naaqs.pdf

Table 3: Higley and Other Monitor Stations PM_{10} NAAQS Atypical Event Days Data					
Monitor	**Date**	**24-hour Average PM_{10} Concentration ($\mu g/m^3$)***	**PM_{10} NAAQS Exceedance**	**Identified as a potential Atypical Event**	**Other Monitors that Exceeded NAAQS on this date (PM_{10} values)**
Higley	9/2/2022	160.7	Yes	Yes**	Dysart (206.7)
					Zuni Hills (167)
	7/21/2023	125	No	Yes**	West 43rd Avenue (216.9)
	7/26/2023	165.3	Yes	Yes**	-
	7/14/2024	141	No	Yes	Durango Complex (152)
					Central Phoenix (228.7)
					South Scottsdale (161.1)
					West Chandler (191.7)

Source: U.S. EPA Outdoor Air Quality Data, Download Daily Air Quality Data, https://www.epa.gov/outdoor-air-quality-data/download-daily-data

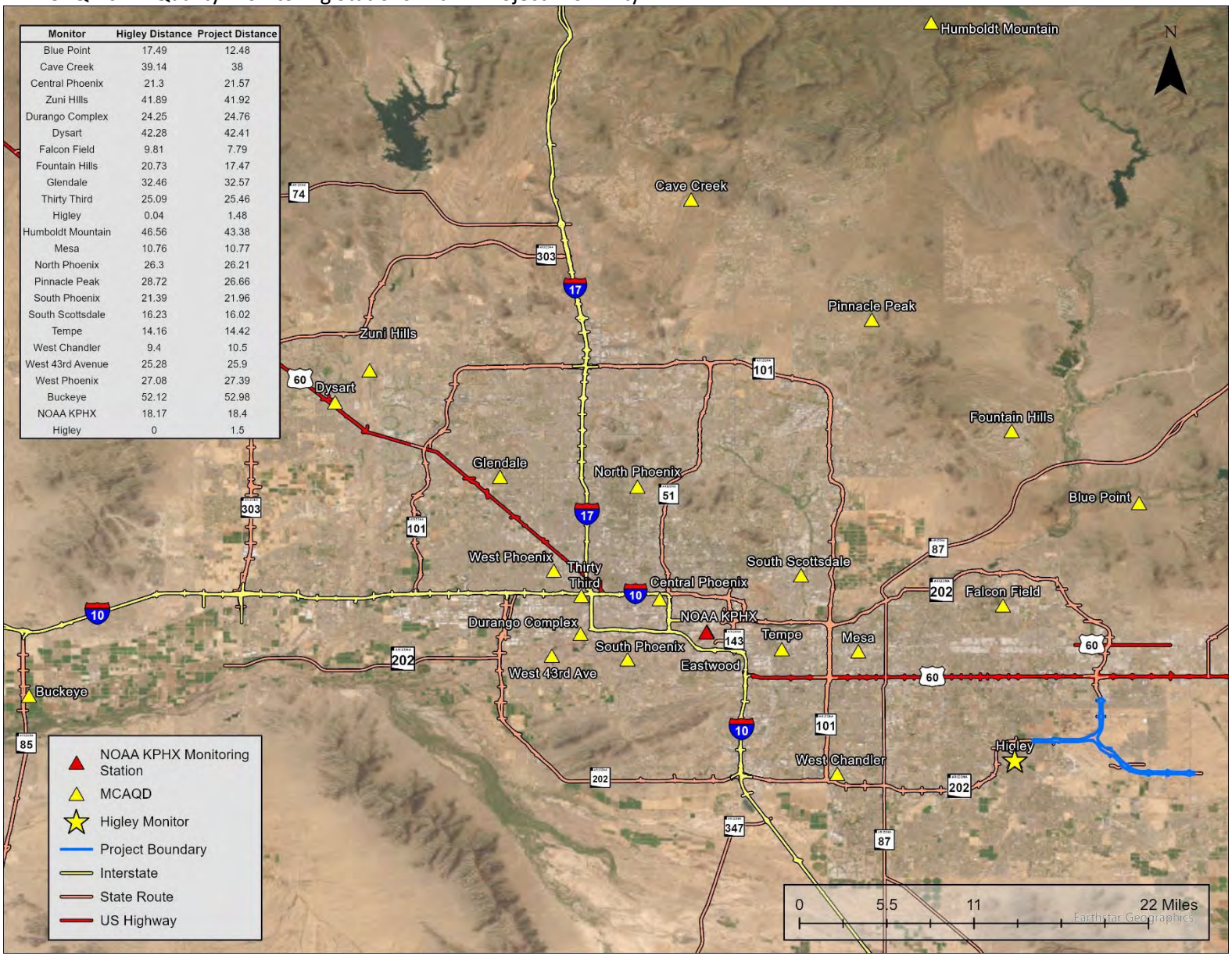
Notes:

*Highest 24-Hr average PM_{10} concentration reading identified during the 3-year period's potential atypical events days.

** Previously approved atypical event report dates for the SR 202 Loop - Val Vista Drive to SR 101L and SR 303Loop – Lake Pleasant Drive to I-17 project

The data from nearby monitors, with 1-hour and 5-minute PM_{10} concentrations provided in **Appendix A**, was flagged for high PM_{10} concentrations on the atypical events days, indicating that the atypical air quality events were widespread and regional in nature. **Figure 2** shows the MCAQD monitors proximity to the project site, and NOAA Phoenix Sky Harbor International Airport Weather Station (NOAA KPHX).

Figure 2. MCAQD's Air Quality Monitoring Stations within Project Proximity



Monitor	Higley Distance	Project Distance
Blue Point	17.49	12.48
Cave Creek	39.14	38
Central Phoenix	21.3	21.57
Zuni Hills	41.89	41.92
Durango Complex	24.25	24.76
Dysart	42.28	42.41
Falcon Field	9.81	7.79
Fountain Hills	20.73	17.47
Glendale	32.46	32.57
Thirty Third	25.09	25.46
Higley	0.04	1.48
Humboldt Mountain	46.56	43.38
Mesa	10.76	10.77
North Phoenix	26.3	26.21
Pinnacle Peak	28.72	26.66
South Phoenix	21.39	21.96
South Scottsdale	16.23	16.02
Tempe	14.16	14.42
West Chandler	9.4	10.5
West 43rd Avenue	25.28	25.9
West Phoenix	27.08	27.39
Buckeye	52.12	52.98
NOAA KPHX	18.17	18.4
Higley	0	1.5

Windspeed data from NOAA KPHX was used to show that atypical events occurred over the entire Phoenix Area, including the Higley Monitor, the project site, and other MCAQD monitors with recorded NAAQS exceedances. While some dates did not show PM_{10} levels or wind speeds over 25 mph at Higley monitor, data from NOAA KPHX confirmed sustained wind speeds and wind gusts over 25 mph, along with reduced visibility due to blowing dust and haze. This NOAA KPHX data and MCAQD monitoring site data supports the conclusion that atypical events influenced air quality across the Phoenix Area on these dates.

Appendix A includes maximum hourly sustained wind speed and wind gust data for the dates being proposed as atypical at each of MCAQD's monitors discussed in this report. To demonstrate which of the four dates meet the atypical event criteria of windspeeds exceeding 25 mph, **Table 4** presents the selected days maximum sustained windspeeds and gust speeds from the NOAA KPHX monitoring data. For more detailed NOAA KPHX data referenced in **Table 4**, please refer to **Appendix B**.

Table 4: NOAA Phoenix Sky Harbor Station (WBAN:23183) Windspeed for Atypical Events Days

Date	Max Wind Gust Speed (mph)	Time Recorded	Max Sustained Windspeed (mph)	Time Recorded	Maximum sustained wind or windspeed > 25 mph?
9/2/2022	30	6:51 P.M.	20	6:50 P.M.	No
7/21/2023	46	11:05 P.M.	35	10:55 P.M.	Yes
7/26/2023	43	9:51 P.M., 9:57 P.M., 10:20 P.M., 10:25 P.M.	29	10:19 P.M.	Yes
7/14/2024	41	8:50 P.M.	26	8:50 P.M.	Yes

Source: U.S. Department of Commerce National Centers for Environmental Information National Oceanic & Atmospheric Administration, *National Environmental Satellite, Data, and Information Service for Phoenix Airport Station, AZ US WBAN:23183 (ICAO:KPHX), Local Climatological Data - Hourly Observations for, 9/2/2022, 7/21/2023, 7/26/23, & 7/24/2024*. https://www.ncdc.noaa.gov/cdo-web/datasets/LCD/stations/WBAN:23183/detail

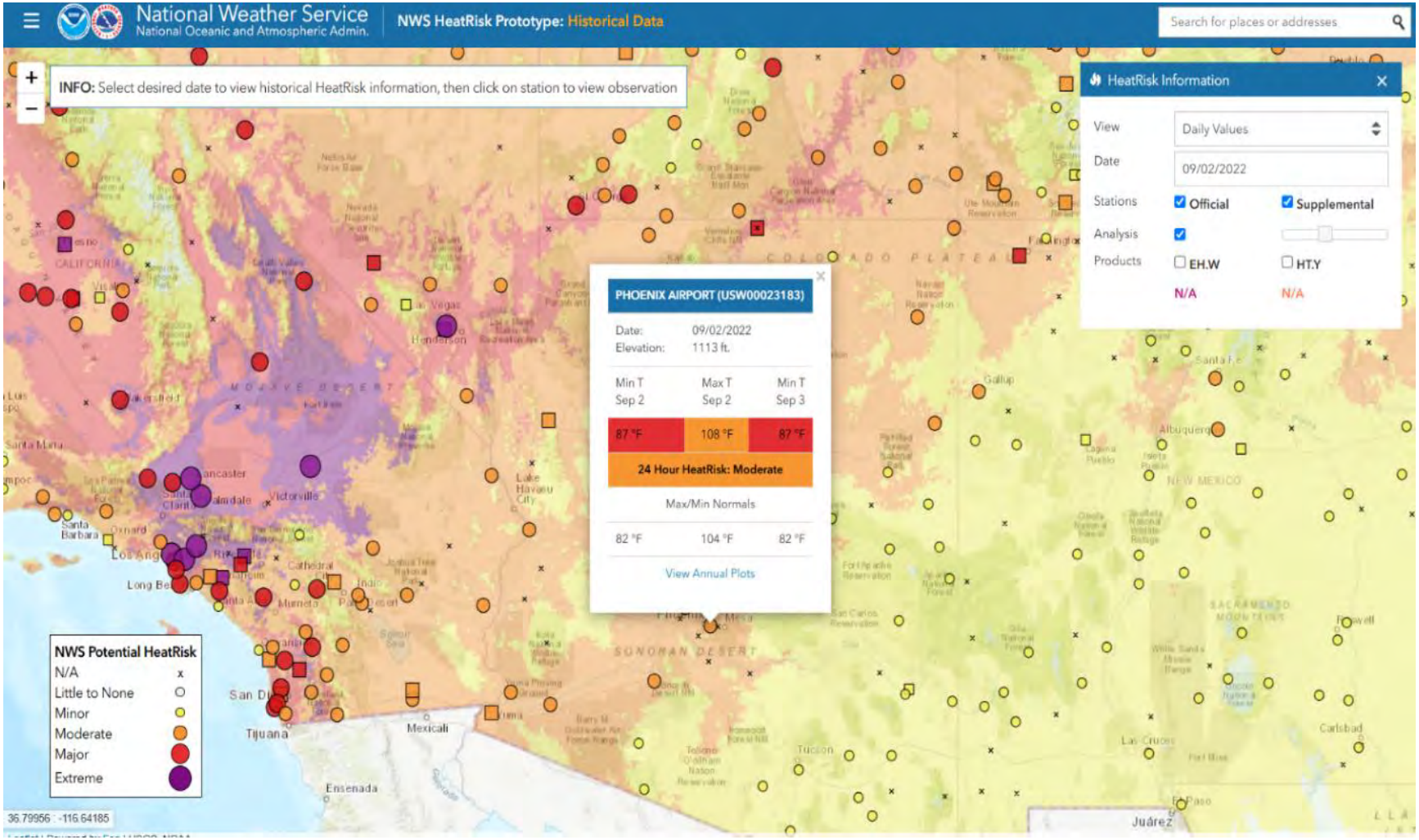
Meteorological conditions, beyond human control (nonanthropogenic sources) – such as high temperatures, low precipitation, atmospheric pressure changes, wildfires, and strong winds – can lead to PM_{10} emissions spikes. Consequently, the dates discussed in this summary report are characterized by a combination stormy weather, strong winds, dust storms, thunderstorms, drought, or heat wave conditions which led to naturally occurring, uncontrollably elevated regional and project PM_{10} background concentrations. As such, these dates are subject to atypical event review per 40 CFR Part 51, Appendix W, Section 8.3.2.c.ii..

September 2nd, 2022, Atypical Event

Extreme heat experienced in California, Nevada, Utah, and Arizona was caused by a long-lasting heat dome settling over the Western United States in early September 2022 and resulted in wildfires and poor air quality conditions across the Western United States[3]. **Figure 3** below shows the NWS Potential Heat Risk Map for the Phoenix Area and surrounding Western United States on September 2nd, 2022.

[3] *Intense Heat Wave Fuels West Coast Wildfires & Air Quality Alerts*, IQAir, September 1, 2022, https://www.iqair.com/us/newsroom/intense-heat-wave-fuels-west-coast-wildfires-air-quality-alerts?srsltid=AfmBOopf24koH2lB5I1ka62HKELBDTX0vLD0RjdeGFPG0_RWkn-ifLPS.

Figure 3. NWS Heatrisk Prototype: Historical Data for September 2nd, 2022, 24-hour heat risk recorded at NOAA KPHX[4]



[4] *NWS HeatRisk Prototype: Historical Data*, NOAA, https://www.wrh.noaa.gov/wrh/hil/historical/#

As shown in **Figure 3**, a moderate heat risk was issued specifically for September 2nd, 2022, following the development of a strong ridge of high pressure over the Western United States. Heat advisory warnings had already been issued by the NWS for the Phoenix area starting on August 29th, 2022, due to excessive heat conditions caused by this high-pressure system[5]. This high-pressure system created excessive heat and monsoon-like conditions for the week of September 1st, 2022, continuing through September 5th, 2022, in the Phoenix Area. According to the NOAA Storm Events Database report for Central Phoenix on September 5th, 2022, weather conditions were due to an "anomalously strong ridge of high pressure, with 500 mb heights around 594 dm, was parked over the western CONUS for the start of September. This resulted in well above normal temperatures as well as excessive heat conditions at times**."**

Given the high-pressure system, poor air quality due to wildfires, and extreme heat conditions, dust storms, poor visibility and bouts of precipitation were noted throughout the Phoenix Area between September 1st and 5th, 2022, per NOAA's Storm Events Database webpage. Around 10:30 P.M. on September 1st, 2022, dust storms were reported in Northwest Pinal County, developing over the White Tank Mountains eventually moving north into Maricopa County, moving towards the project area and Higley Monitor. Additionally, a storm developed over Queen Creek Valley and joined this storm cluster in the Phoenix Area. The NOAA Storm Event Report for Southeast Valley and Queen Creek Areas of Southern Arizona states:

> *"Under a classic setup for storm motion from the Mogollon Rim to the Valley (Rim-to-Valley), with the monsoon 500mb high positioned over Nevada, a multicell storm cluster descended out of the White Mountains, through Gila County, and into the lower deserts of Maricopa and Pinal Counties in the early overnight hours of the 1st. Moisture levels were near average for the time of year, but steep mid-level lapse rates over the high terrain (7-8 C/km) and modest shear (Sfc-6km around 20-25 kts) was sufficient to support the development of an organized multicell storm cluster. The environment was also supportive of strong downbursts, with DCAPE up around 1000-1500 J/kg. A single ordinary storm also developed in the Queen Creek/San Tan Valley area a couple hours before the multicell cluster moved into the lower deserts and produced a damaging downburst. Strong winds leading to a dust storm was eventually generated by the multicell cluster once it moved into Maricopa and Pinal Counties."*[6]

Again, on September 2nd, 2022, dust storm conditions continued due to the high-pressure system positioned over the Western United states. On the evening of September 2nd, 2022, around 6:00 P.M. a NOAA Storm Events Report Maricopa County's Queen Creek area was published describing the continuity of the monsoon/high pressure conditions which resulted in thunderstorms, high winds, dense blowing dust, low visibility, hail, and localized flash flooding[7].

With excessive heat and monsoon conditions occurring within the Phoenix Area on September 2nd, 2022, NAAQS PM_{10} exceedances were noted throughout the Phoenix Area at four MCAQD monitoring stations including the Higley, Zuni Hills, and Dysart monitors. The highest PM_{10} concentrations recorded at these monitors coincides with the times of dust storms reported by NOAA Storm Event Reports for Maricopa County and the Phoenix Area, and aligns with NOAA KPHX data for both September 1st, and 2nd, 2022. **Table 5** captures windspeed and PM_{10} data at Higley, Zuni Hills, and Dysart monitoring stations on September 2nd, 2022.

[5] NOAA, *Storm Events Database*, Event Details "1148966," https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=1148966.
[6] NOAA, *Storm Events Database*, Event Details "1148966," https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=1148966.
[7] NOAA, *Storm Events Database*, Event Details "1148966," https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=1148966.

Table 5: Windspeed and PM_{10} Data for September 2nd, 2022						
Site	**Date**	**24-hour average PM_{10} ($\mu g/m^3$)**	**Max Hourly-Averaged Windspeed (MPH)**	**Time**	**Max Wind Gust (MPH)**	**Time**
Higley	9/2/2022	160*	5.5	6:00 P.M.	38.6	6:00 P.M.
Zuni Hills	9/2/2022	167.6*	12.2	7:35 P.M.	12.5	7:35 P.M
Dysart	9/2/2022	206.7*	17.2	7:30 P.M.	17.5	7:30 P.M.
Source: Maricopa County Air Quality Departments (MCAQD) Air Quality Planning & Analysis Division, Higley, Dysart and Zuni Hills Air Quality Monitoring Station Data for September 2nd, 2022. Notes: *Measurement exceeds PM_{10} NAAQS.						

As shown in **Table 5**, the highest wind gust speed recorded at the Higley monitor is 38.6 mph, and the max hourly average windspeed is 5.5 mph, occurring within the same hour at 6:00 P.M. Zuni Hills monitor is 12.2 mph, and the max wind gust is 12.5 mph, occurring at 7:35 P.M. The highest wind speed at the Dysart Monitor is 17.2 mph and the max wind gust is 17.5 mph, occurring at 7:30 P.M. **Figures 4 – 6** show the corresponding 5-minute windspeed and PM_{10} data recorded at Higley, Zuni Hills, and Dysart monitors on September 2nd, 2022.

PM_{10} NAAQS exceedances for Dysart and Zuni Hills monitors were recorded in the early morning of September 2nd, 2022, in the Phoenix Area following the storm conditions that began the prior evening. As the storm moved north and northwest from Pinal County to Maricopa County between the night of the 1st and the 2nd, and storm cells from multiple storm fronts combined over the Phoenix Area, and first hitting Zuni Hills and Dysart monitors in the early morning of the 2nd, and then Higley the evening of the 2nd, which resulted in recorded exceedances in the 24-hour average PM_{10} NAAQS.

Figure 4: 5-Minute PM_{10} concentrations (µg/m^3) and windspeed (mph) at Higley monitor on September 2nd, 2022.

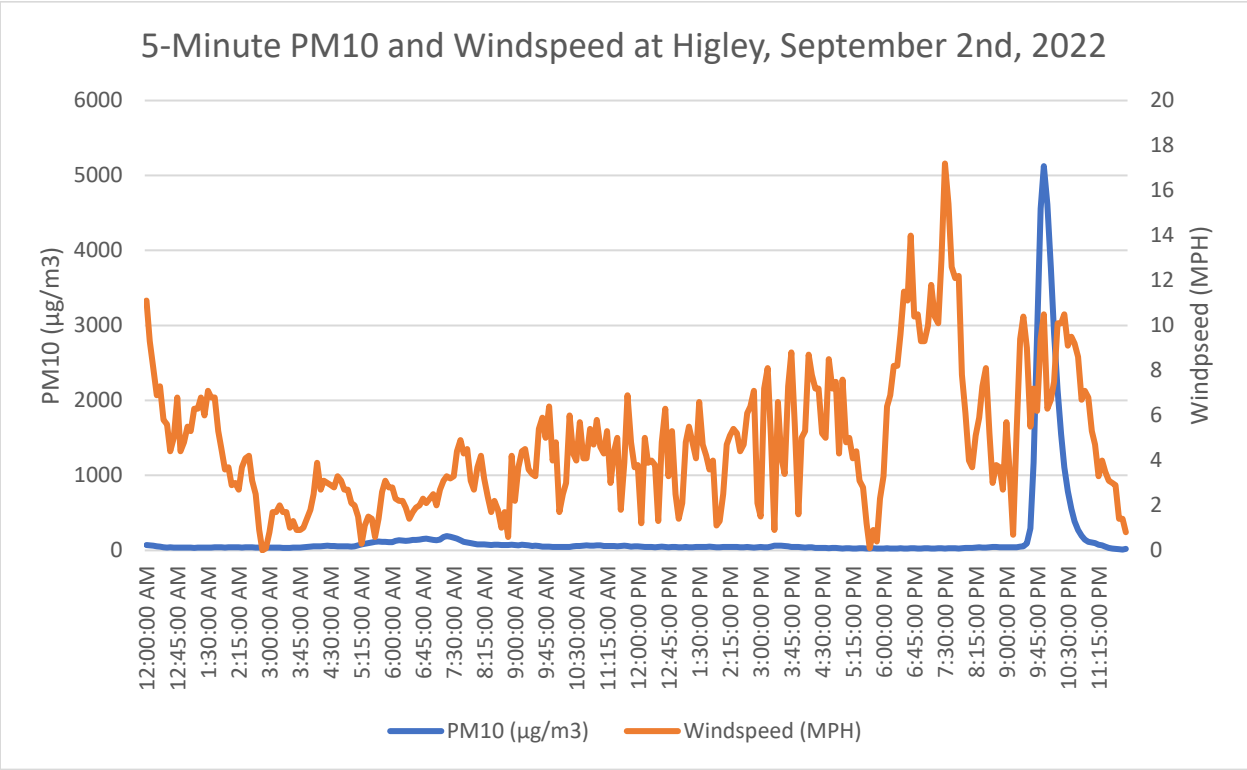


Figure 5: 5-Minute PM_{10} concentrations (µg/m^3) and windspeed (mph) at Dysart monitor on September 2nd, 2022.

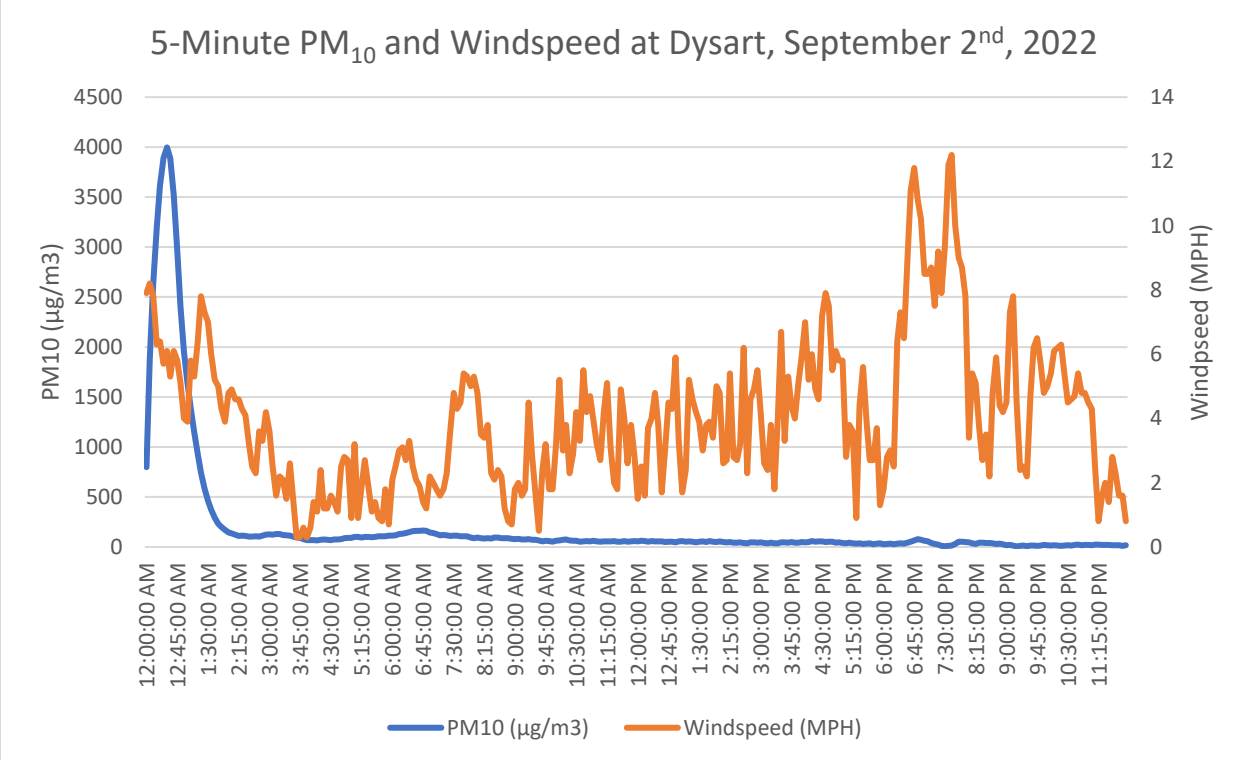
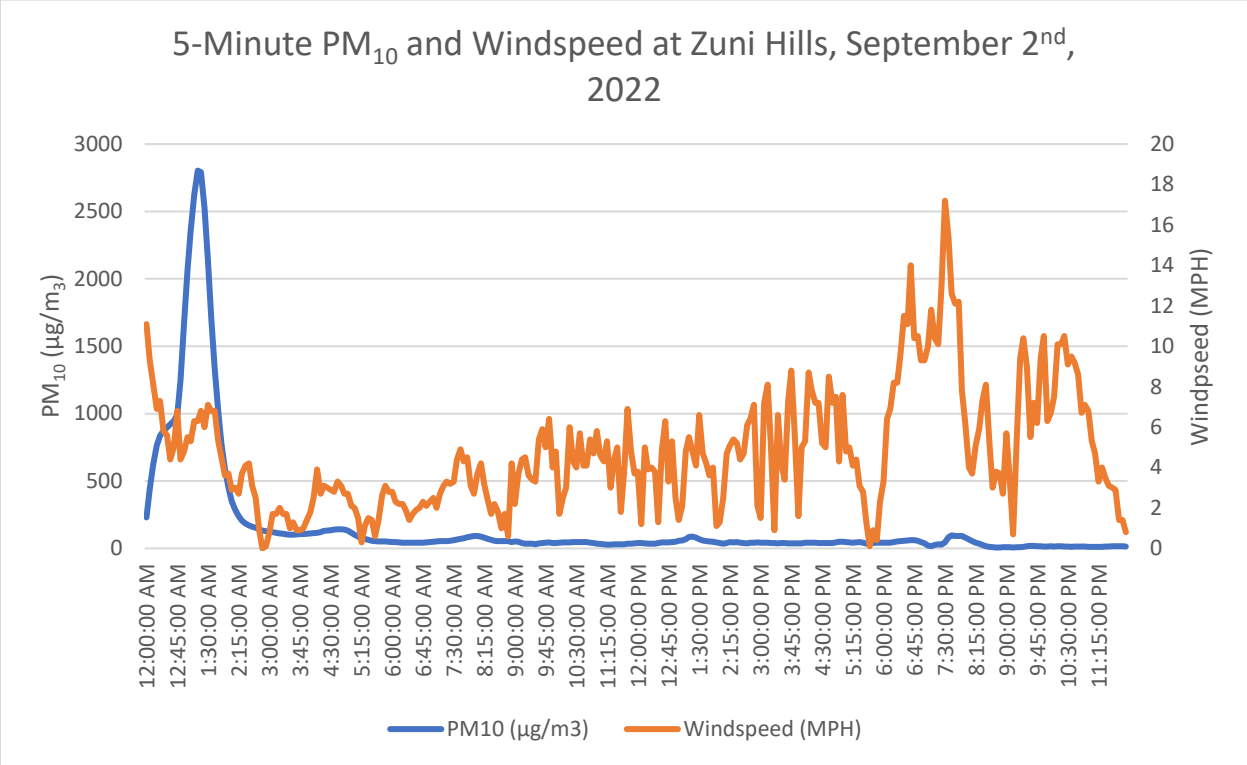


Figure 6: 5-Minute PM_{10} concentrations (µg/m³) and windspeed (mph) at Zuni Hills monitor on September 2nd, 2022.



Based on **Figures 4 – 6**, PM_{10} concentrations peaked in the early morning of September 2nd, 2022, at Higley, Zuni Hills, Dysart monitoring stations, followed by additional peaks in PM_{10} concentrations and maximum wind speeds recorded later that evening and an exceedance at Higley monitor. This pattern aligns with monsoon conditions affecting the area in early September, influenced by a low-pressure system over the Western United States. According to NOAA's Storm Events Report for September 1st, 2022, strong winds and dust storms developed around 10:00 P.M., extending into the early hours of September 2nd, 2022[8].

Storm conditions remained within the Phoenix Area for the day of September 2nd, and winds began to increase again in the evening of September 2nd, resulting in peak windspeeds being recorded in the evening and an exceedance of PM_{10} concentrations at Higley monitor the evening of the 2nd. The peak windspeeds recorded at all 3monitors align with Higley's exceedance of Per monitoring data, Dysart monitor recorded a PM_{10} peak of 3,996.9.9 µg/m³ at 1:10 A.M., Zuni Hills monitor registered 2,791.9 µg/m³ at 12:30 A.M. NOAA KPHX data confirmed haze, blowing dust, and high winds approximately 1 hour before the peak PM_{10} levels at Zuni Hills and Dysart monitors were recorded, on the evening of September 1st, 2022.

As storm conditions continued to impact the Phoenix Area on September 2nd, pushing dust east towards Higley monitor and southeastern Phoenix near the project area, high winds continued to be recorded and picked up into the evening of the 2nd, where Higley monitor recorded its peak PM_{10} concentrations coinciding with peak windspeeds of the day. Higley monitor recorded a PM_{10} peak of 5,125 µg/m³ at 9:55 P.M., following peak windspeeds reaching up to 17.2 mph at 7:30 P.M. All three monitors windspeeds and

[8] NOAA, *Storm Events Database*, Event Details "1052142," https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=1052142.

PM_{10} data follow similar trends between the early morning of the 1st and evening of the 2nd, with peaks noted in the early morning, and a gradual increase in speed and concentration leading up to the peak windspeeds the evening of the 2nd.

Table 6 provides windspeed and weather conditions data recorded the evening of September 1st, 2022, at NOAA KPHX, that demonstrates dust storm conditions occurring in the Phoenix Area near the monitors. These conditions continued into the early morning of the 2nd, resulting in PM_{10} exceedances being recorded at the monitors shown between 12:00 and 1:00 A.M., as shown in **Figures 4 – 6**.

The highest wind gusts recorded at NOAA KPHX around 6:00 p.m. on September 2nd, coinciding with the time at which maximum wind speeds were recorded Higley, Dysart, and Zuni Hills monitors, and as the wind pushed east towards Higley monitor, Higley recorded peak PM_{10} concentrations and windspeeds between 7:00 and 10:00 P.M. the night of the 2nd. **Table 6** provides the highest wind speeds, gusts, and weather conditions at NOAA KPHX on September 1-2, as the storm initiated the night of September 1st, contributing to PM_{10} exceedances occurring early September 2nd, 2022, which continued into the evening of the 2nd.

Additional data from the Luke Airforce Base NOAA Station's (approximately 23 miles northwest of NOAA KPHX) is provided for the evening of September 1st, 2022, to demonstrate the regional wide impact of the multiple storm cells over the Phoenix Area, while focusing on the wind patterns and direction attributing to PM_{10} exceedances at the Zuni hills and Dysart monitors in the early morning of September 2nd, 2022, and the Higley monitors exceedance in the evening of the 2nd. Luke Airforce Base NOAA Station is approximately 40 miles northwest of Higley monitor, 8 miles southwest of Dysart monitor, 12 miles southwest of Zuni Hills monitor.

Table 6: NOAA Weather for September 1st and 2nd, 2022

Date	Time	Hourly-Averaged Windspeed (MPH)	Wind Gust Recorded (MPH)	Weather Conditions Noted	Visibility (miles)	Wind Direction
NOAA Luke Airforce Base Station Data						
9/1/2022	11:34 P.M.	28	33	-	9	SSE
9/1/2022	11:42 P.M.	24	33	Lt drizzle	3	SE
9/1/2022	11:52 P.M.	21	-	Lt drizzle	2.75	SE
9/1/2022	11:54 P.M.	17	-	Haze	3	SE
9/1/2022	11:56 P.M.	18	-	Haze	2.75	SE
9/2/2022	12:06 A.M.	16	-	Haze	3	ESE
9/2/2022	12:26 A.M.	10	-	-	7	SSE
NOAA KPHX Station Data						
9/1/2022	10:40 P.M.	23*	33*	-	10	SE
9/1/2022	10:45 P.M.	16	22	-	4	SE
9/1/2022	10:51 P.M.	13	23	Haze, Blowing dust	3	SSE
9/1/2022	11:05 P.M.	16	-	Haze, Blowing dust	2	SE
9/1/2022	11:15 P.M.	18	24	Haze, Blowing dust	4	SE
9/1/2022	11:22 P.M.	13	24	Haze, Blowing dust	5	SSE

9/1/2022	11:25 P.M.	14	20	Haze, Blowing dust	6	SSE
9/1/2022	11:51 P.M.	13	25	-	10	SE
9/2/2022	12:00 A.M.	15	-	-	10	SE
9/2/2022	12:15 A.M.	13	-	-	10	E
9/2/2022	12:25 A.M.	16	-	-	10	E
9/2/2022	12:45 A.M.	14	-	-	10	E
9/2/2022	12:55 A.M.	13	-	-	10	E
9/2/2022	1:00 A.M.	14	20	-	10	ESE
9/2/2022	1:05 A.M.	12	17	-	10	ESE
9/2/2022	1:10 A.M.	14	-	-	10	ESE
9/2/2022	1:15 A.M.	13	18	-	10	ESE
9/2/2022	6:45 P.M.	10	-	-	10	ENE
9/2/2022	6:50 P.M.	20*	-	-	10	ENE
9/2/2022	6:51 P.M.	17	30*	-	10	ENE
9/2/2022	6:55 P.M.	18	-	-	10	NE
9/2/2022	6:58 P.M.	15	-	Thunder	10	ENE
9/2/2022	7:00 P.M.	16	-	-	10	E

Source: NOAA Weather for Phoenix, Phoenix Sky Harbor International Airport, AZ on 09/01/2022 - 09/03/2022, Link: https://www.weather.gov/wrh/timeseries?site=KPHX&hours=72&units=english&chart=on&headers=on&obs=tabular&hourly=false&pview=standard&font=12&history=yes&start=20220901&end=20220903,
NOAA Weather for Phoenix, Luke Airforce Base, AZ on 09/01/2022, Link:
https://www.weather.gov/wrh/timeseries?site=KLUF&hours=72&units=english&chart=on&headers=on&obs=tabular&hourly=false&pview=standard&font=12&history=yes&start=20220901&end=20220903
Notes:
* Highest windspeed or wind gust recorded for the day
- no observation recorded

As shown in **Table 6**, high windspeeds recorded at NOAA KPHX coincide with the high windspeeds and peak PM_{10} levels recorded at Zuni Hills, and Dysart monitors for the early morning of September 2nd, 2022, and high windspeeds and the thunderstorm conditions resulting in exceedance at Higley on the evening of September 2nd, 2022. Haze and blowing dust were noted from 10:50 P.M. to 11:30 P.M. on September 1st, 2022, which aligns with NOAA Storm Events Report's description of dust storms occurring around this time throughout the Phoenix Area. On the evening of September 1st, 2022, haze and blowing dust was noted at NOAA KPHX with primarily southeasterly winds of speeds greater than 25 mph, from the Casa Grande Area to NOAA KPHX, the Zuni Hills, Dysart, and Higley monitors. Wind speeds greater than 25 mph were also recorded at Luke Air Force Base NOAA Station around a similar time, primarily in the southeast direction, demonstrating that areas within closer proximity to the monitors experienced a similar wind pattern to that of NOAA KPHX's wind blowing pattern at this time. An increase in windspeeds in the evening of the 2nd is also demonstrated in the NOAA KPHX data, aligning with the peak windspeeds recorded at Higley at 6:45 P.M and later peak in PM_{10} concentrations to their maximum at Higley monitor.

ADEQ Visibility Camera Historical Archive photos at the South Mountain Camera show a decrease in visibility and dust clouds moving north and northwest towards the Central Phoenix Area around 11:00 P.M., the night of September 1st, 2022, which aligns with the NOAA KPHX and Luke Airforce Base NOAA Station weather conditions of blowing dust and haze that were recorded during this time.

From 10:45 P.M. to 11:30 P.M., visibility decreased drastically at NOAA KPHX, coinciding with haze and visible dust being noted in the forecast. Additionally, this blowing dust and peak windspeeds continued

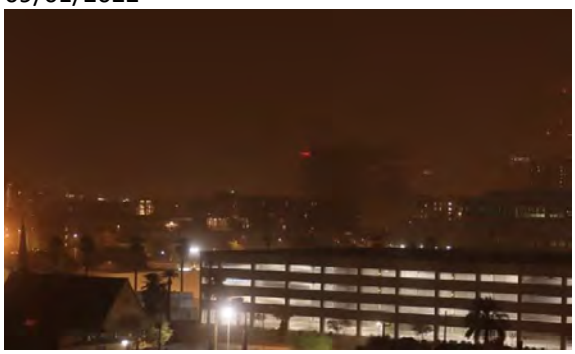
into the morning of the 2nd and could explain the highest PM_{10} levels being recorded at the Zuni Hills and Dysart monitors just after 12:00 A.M. on September 2nd, 2022. The highest wind gust speed recorded at NOAA KPHX for September 2nd, 2022, was 30 mph at 6:51 P.M. from the east-northeast direction, moving towards Zuni, Dysart, and Higley monitors. This was followed by reports of thunder and monsoon conditions that were noted in the NOAA Storm Events Reports throughout the Phoenix Area. This peak wind gusts on the evening of September 2nd, 2022, aligns with the highest windspeeds recorded at Higley, Zuni Hills, and Dysart monitors of 12.2 mph at 7:35 P.M., 17.2 mph at 7:30 P.M. and 17.2 mph at 7:40 P.M., respectively.

It is important to note that windspeeds did not reach levels greater than 25 mph at the Higley, Zuni Hills and Dysart monitors, but a series of high wind speed and monsoon conditions resulting in dust storm events were noted for this period during September of 2022. As such the Zuni Hills, and Dysart monitors PM_{10} concentrations increased on the night of September 1st, 2022, and exceeded in the morning of September 2nd, 2022, and why Higley exceeded in the evening of the 2nd, as storm conditions moved throughout the Phoenix Area.

Based on NOAA Storm Event Reports for both Maricopa County and the Central Phoenix Area, it was demonstrated that the high-pressure excessive heat wave resulted in monsoon-like conditions including high wind, thunder, flashflood, hail, and dust storms. The photographs below show ADEQ's Visibility Camera Historical Archive photos of the Phoenix Area at the time prior to and during the thunderstorm and monsoon conditions in between the evenings of September 1st and September 2nd, 2022. Note the first wave of the storm hit the Phoenix Area around 10:00 P.M., September 1st, 2022, and moved north and northwest, followed by thunderstorms and high winds the next evening on September 2nd, 2022, moving west and southwest.

Camelback Mountain Camera, 10:30 P.M., 09/01/2022

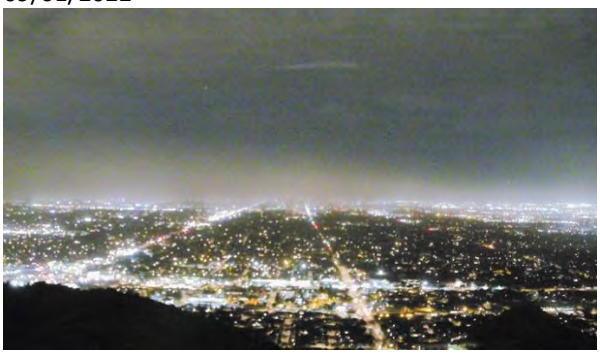
Camelback Mountain Camera, 11:15 P.M., 09/01/2022



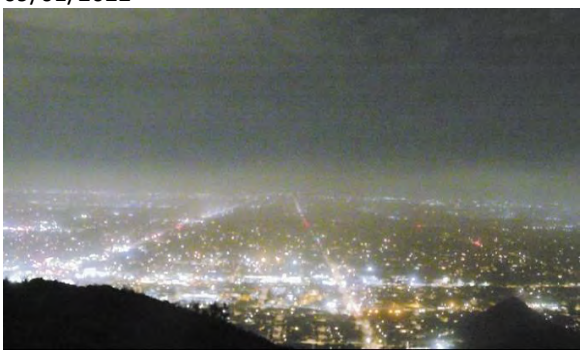
White Tank Mountains Camera, 9:00 P.M., 09/01/2022

White Tank Mountains Camera, 11:45 P.M., 09/01/2022

South Mountain Camera, 11:00 P.M., 09/01/2022



South Mountain Camera, 11:45 P.M., 09/01/2022



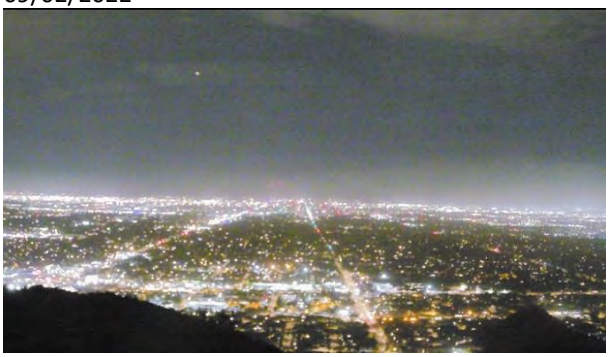
Estrella Mountains Camera, 10:00 P.M., 09/01/2022

Estrella Mountains Camera, 11:30 P.M., 09/01/2022

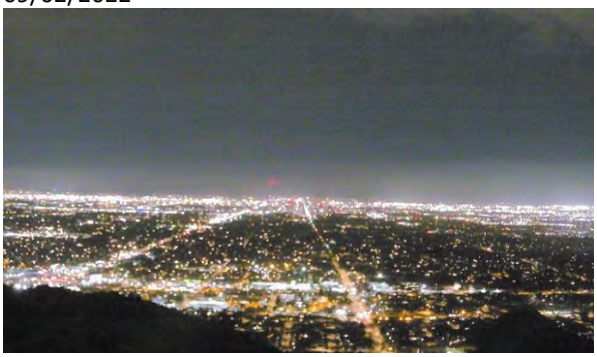
White Tank Mountains Camera, 12:00 A.M., 09/02/2022

White Tank Mountains Camera, 5:30 A.M., 09/02/2022

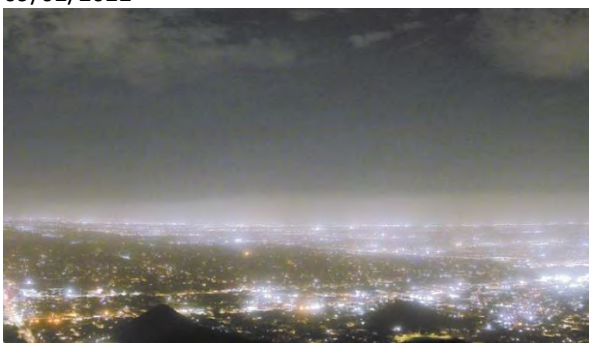
South Mountain Camera, 12:15 A.M., 09/02/2022



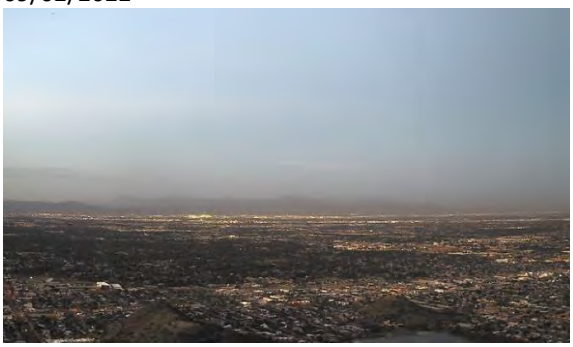
South Mountain Camera, 12:30 A.M., 09/02/2022



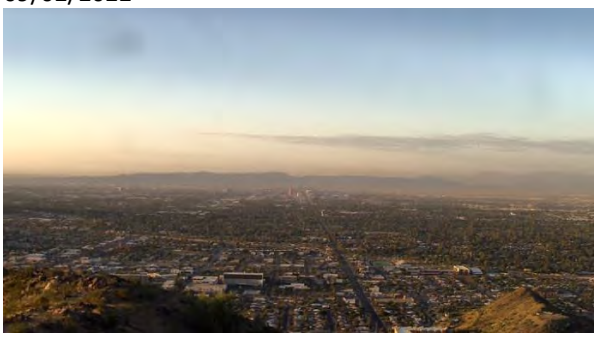
Estrella Mountains Camera, 12:15 A.M., 09/02/2022



Estrella Mountains Camera, 5:45 A.M., 09/02/2022



South Mountain Camera, 6:15 A.M., 09/02/2022

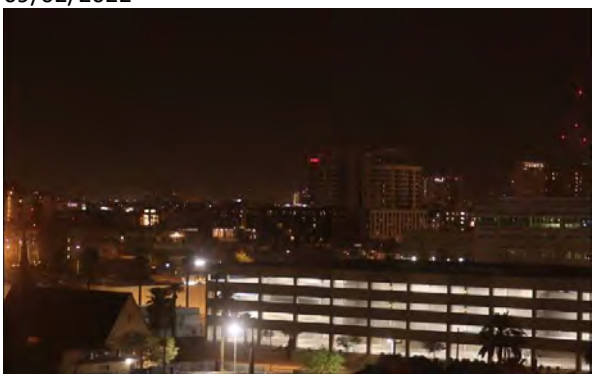


South Mountain Camera, 5:15 P.M., 09/02/2022

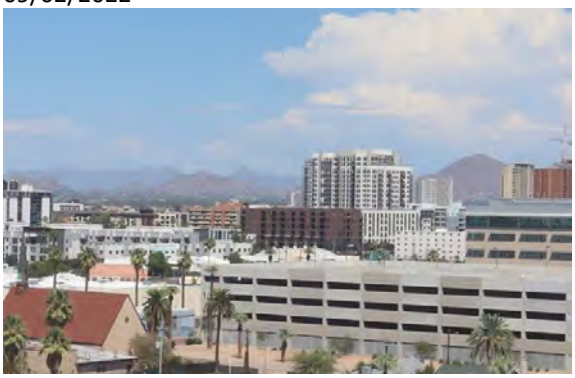
Superstition Mountains Camera, 10:30 A.M., 09/02/2022

Superstition Mountains Camera, 5:45 P.M., 09/02/2022

Camelback Mountain Camera, 12:00 A.M., 09/02/2022



Camelback Mountain Camera, 2:00 P.M., 09/02/2022

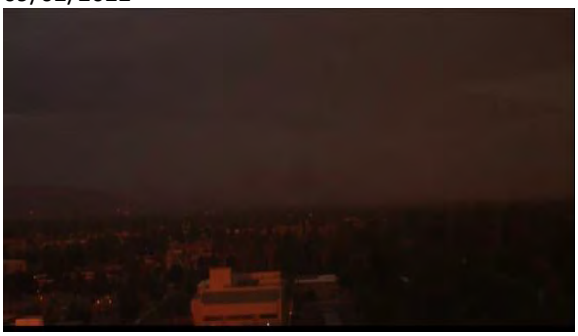


Estrella Mountains Camera, 1:45 P.M., 09/02/2022

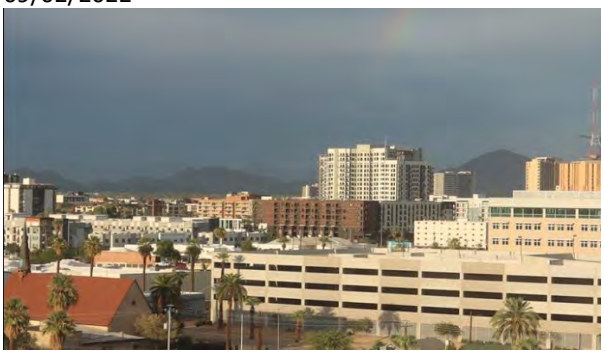
Estrella Mountains Camera, 5:30 P.M., 9/02/2022

Superstition Mountains Camera, 6:30 P.M., 09/02/2022

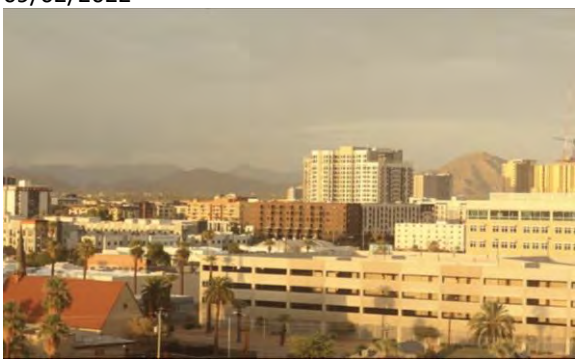
Superstition Mountains Camera, 6:45 P.M., 09/02/2022



Camelback Mountain Camera, 6:00 P.M., 09/02/2022



Camelback Mountain Camera, 6:30 P.M., 09/02/2022



White Tank Mountains Camera, 6:00 P.M, 09/02/2022

White Tank Mountains Camera, 7:15 P.M., 09/02/2022

July 21st, 2023, Atypical Event

Per NOAA Storm Event Reports, thunderstorm activities and severe winds were noted Southeastern Arizona on this day as a result of monsoon like conditions moving west across Southern Arizona during the afternoon of July 21st, 2023[9]. As the monsoon conditions winds moved further west and northwest towards the Phoenix area, thunderstorms hit the Phoenix area on the evening of July 21st, 2023, resulting in high winds and blowing dust throughout the region. In addition, the Chimney Fire began on July 19th, 2023, burning over 1,600 acres on the far east side of the Santa Catalina Mountains in Northeast Pima County (approximately 110 miles southeast of Phoenix), resulting in smoke and hazy conditions in southeastern Arizona[10].

Winds carried smoke and particulate matter from the Chimney Fire westward toward the Phoenix area from July 19–23, 2023, driven by the summer monsoon conditions that brought strong winds to southern Phoenix. According to discussions with Rone Pope, an Atmospheric Scientist with ADEQ's Air Quality Department on February 13th, 2025, ADEQ monitoring data from July 20th, 2023, indicates haboob conditions across Phoenix, with periodic spikes in wind gusts coinciding with increased PM_{10} concentrations at on this date. For more details on this data, please refer to **Appendix A**.

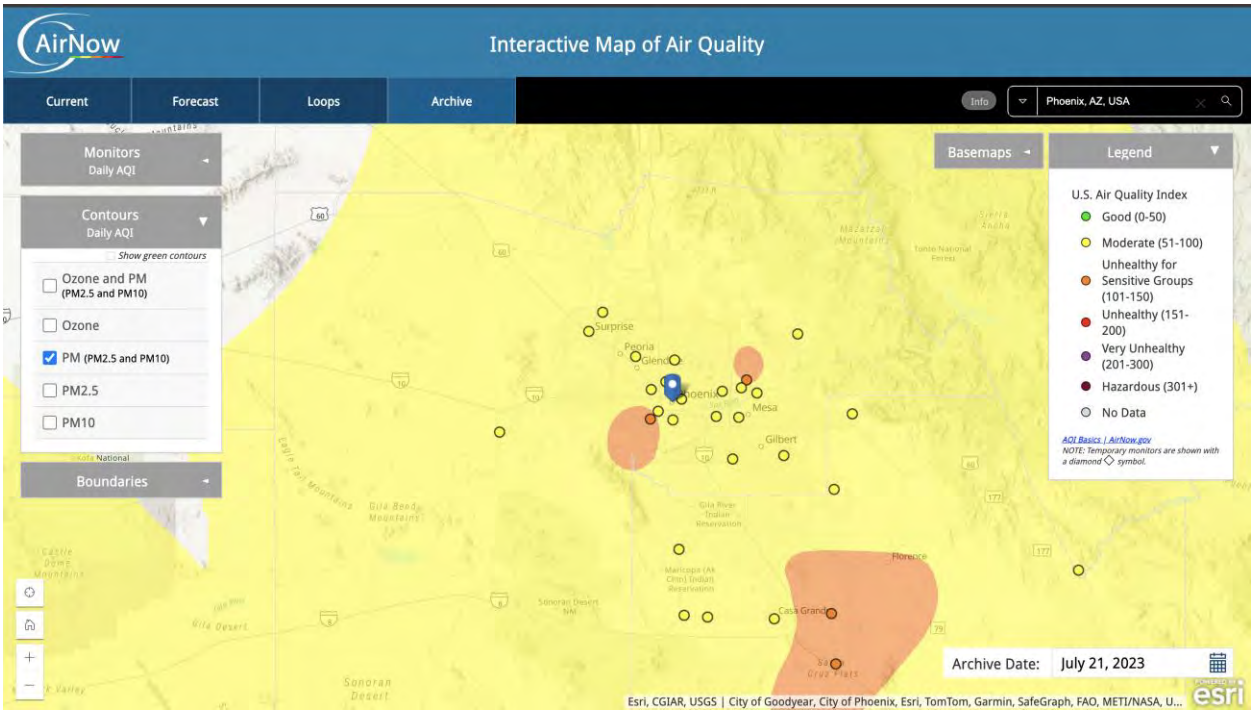
Nearly all Maricopa County monitors recorded elevated wind gusts and speeds between 5:00 PM and 10:00 PM on July 20th. Higley experienced gusts up to 18.2 mph wind gusts, Zuni Hills experienced gusts up to 22 mph, while Central Phoenix (near NOAA KPHX) recorded gusts up to 24 mph, consistent with other countywide readings (**Appendix A**). These winds, driven by monsoon thunderstorms, lifted dust and particulate matter, dispersing them throughout the Phoenix area. Combined with smoke from the Chimney Fire, this resulted in decreased visibility and haze, which settled over the Phoenix Area by the early morning of July 21st. NOAA KPHX station data confirmed reduced visibility that morning, along with increases in PM_{10} concentrations at Higley, Zuni Hills, and West 43rd Avenue monitors. Please refer to **Table 7** and the figures at the end of this section for more details.

Additional high winds from summer monsoon-related thunderstorms, exceeding 25 mph, moved northeast from southern Arizona on the late evening of the 20th into the early morning of the 21st. According to MesoWest Surface Weather Maps, data from OTMA3—a Remote Automatic Weather Service station operated by the National Interagency Fire Center, located about 65 miles southwest of the Zuni Hills monitor—recorded wind speeds above 25 mph between 3:00 A.M. and 4:00 A.M.[11], blowing northeast toward the Phoenix area. These winds align with elevated wind speeds in combination with visible haze from Chimney Fire smoke, and blowing dust from thunderstorm activity affecting the area, as observed in weather data around Phoenix between 5:00 A.M. and 6:00 A.M. on the 21st.

According to NOAA KPHX data and ADEQ's Visibility Camera Historical Archive photos, beginning in the early morning of July 21st, there was decreased visibility and haze observed throughout the Phoenix Area. Visible haze in the atmosphere can be seen in photos from the South Mountain and Estrella Mountains Cameras, looking southwest from North Mountain towards Central Phoenix and NOAA KPHX at 6:45 AM. As a result, the Phoenix area's Air Quality Index (AQI) values were listed as moderate to unhealthy for sensitive groups on July 21st, 2023.

[9]NOAA, *Storm Events Database*, Event Details "1121576," https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=1121576.
[10] NOAA, *Storm Events Database*, Event Details "1125390", https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=1125390
[11] MesoWest, *Surface Weather Maps, Arizona Region - OATMAN3 Station*, "7/21/23 Windspeed Station Observations", https://mesowest.utah.edu/cgi-bin/droman/mesomap.cgi?state=AZ&rawsflag=3

Per U.S. EPA's AirNow interactive Map of Air Quality dashboard[12], the Zuni Hills AQI for ozone and particulate matter was 86, the West 43rd Avenue monitor's AQI for ozone and particulate matter was 132, and Higley monitors was ozone and particulate matter 81 on July 21st, 2023. The photo below shows the Phoenix area's particulate matter and AQI values for July 21st, 2023. Areas shown in yellow are listed with moderate AQI values, and areas shown in orange are listed with unhealthy for sensitive groups AQI values. West 43rd Avenue monitor was within a portion of the Phoenix Area that was considered unhealthy for sensitive groups for July 21st, 2023.



Windspeeds periodically increased throughout the day, as the thunderstorms moved into the Phoenix Area. Wind gusts up to 28 mph were recorded at NOAA KPHX station at 6:50 A.M., up to 24 mph at 4:00 P.M., and up to 26 mph at 7:30 P.M. resulting in decreased visibility from blowing dust in the Phoenix Area. This blowing dust may be residual from the haze that settled over the Phoenix area in the morning, which saw a spike in PM_{10} concentrations at both Zuni Hills and West 43rd Avenue, as a result from smoke and particulate matter transported from the Chimney Fire in Northeast Pima County. Additionally, the previous day's monsoon conditions, which brought high winds and increase in blown dust, likely contributed to the dispersion of these particulates across the region on July 20th, 2023, and the early morning of July 21st, 2023. As the day progressed into the evening, these thunderstorm conditions focused on the Phoenix Area and multiple peaks in PM_{10} concentrations were recorded at Zuni Hills, West 43rd Avenue monitors, and Higley monitor exceeded NAAQS 24-hour average PM_{10} concentrations.

Due to the thunderstorm conditions moving north into the Phoenix Area, windspeeds over 25 mph were recorded at NOAA KPHX, 24-hour average PM_{10} NAAQS exceedances were recorded at West 43rd Avenue monitor, and elevated concentrations of PM_{10} were recorded at Higley and Zuni Hills monitor on the evening of the 21st. Although Zuni Hills monitors did not exceed 24-hour average PM_{10} NAAQS on July 21st, 2023, elevated concentrations of PM_{10} were identified at on this date, which occurred prior to the NAAQS

[12]U.S. EPA, *Air Now, Air Quality Archive Data*, accessed December 18, 2024, https://gispub.epa.gov/airnow/?archivedates=07%2F21%2F2023&monitors=pm10&boundaries=county&contours=pm&showlegend=no&tab=archive&xmin=-13334403.77352085&xmax=-11573294.641830858&ymin=3530985.6275526467&ymax=4360174.510390018.

PM_{10} exceedances at West 43rd Avenue and align with blowing dust conditions and high windspeeds noted at NOAA KPHX and West 43rd Avenue monitor. Higley did not exceed 24-hour average PM_{10} NAAQS, but the elevated concentration of PM_{10} occurring later in the evening of the 21st after Higley and West 43rd Avenue's peak concentrations, aligns with the storm movement and NOAA KPHX data.

Table 7 shows the windspeed levels and highest PM_{10} concentrations recorded for July 21st, 2023, at Higley, West 43rd Avenue, and Zuni Hills monitor.

Table 7: Windspeed and PM_{10} Data for July 21st, 2023

Site	Date	24-hour average PM_{10} ($\mu g/m^3$)	Max Hourly-Averaged Windspeed (MPH)	Time	Max Wind Gust (MPH)	Time
Higley	7/21/2023	114	10.5	11:00 P.M.	33.9	10:00 P.M.
West 43rd Avenue	7/21/2023	216.9*	21.8	11:05 P.M.	22.3	11:05 P.M.
Zuni Hills	7/21/2023	125	19.9	6:30 P.M.	20.2	6:30 P.M.

Source: Maricopa County Air Quality Departments (MCAQD) Air Quality Planning & Analysis Division, West 43rd Avenue and Zuni Hills Air Quality Monitoring Station Data for July 21st, 2023.

Notes: *Measurement exceeds PM_{10} NAAQS.

As shown in **Table 7**, on July 21st, 2023, 24-hour average PM_{10} NAAQS were exceeded in the late evening and windspeeds were recorded of over 20 mph at West 43rd Avenue monitor. As windspeeds increased the night of the 21st, PM_{10} concentrations rose as well, resulting in the highest level of PM_{10} recorded at 11:20 P.M. of 2,825.8 $\mu g/m^3$. Earlier in the evening, Zuni Hills monitor recorded a max windspeed of 19.9 mph and wind gust of 20.2 mph at 6:30 P.M. This max wind speed and wind gust speed coincide with the highest PM_{10} concentration recorded of 872.8 $\mu g/m^3$ **Figures 7 - 9** below shows the corresponding increase in 5-minute PM_{10} concentrations and in windspeeds recorded on July 21st, 2023, at West 43rd Avenue and Zuni Hills monitor.

Figure 7: 5-Minute PM_{10} concentrations ($\mu g/m^3$) and windspeed (mph) at Higley monitor on July 21st, 2023.

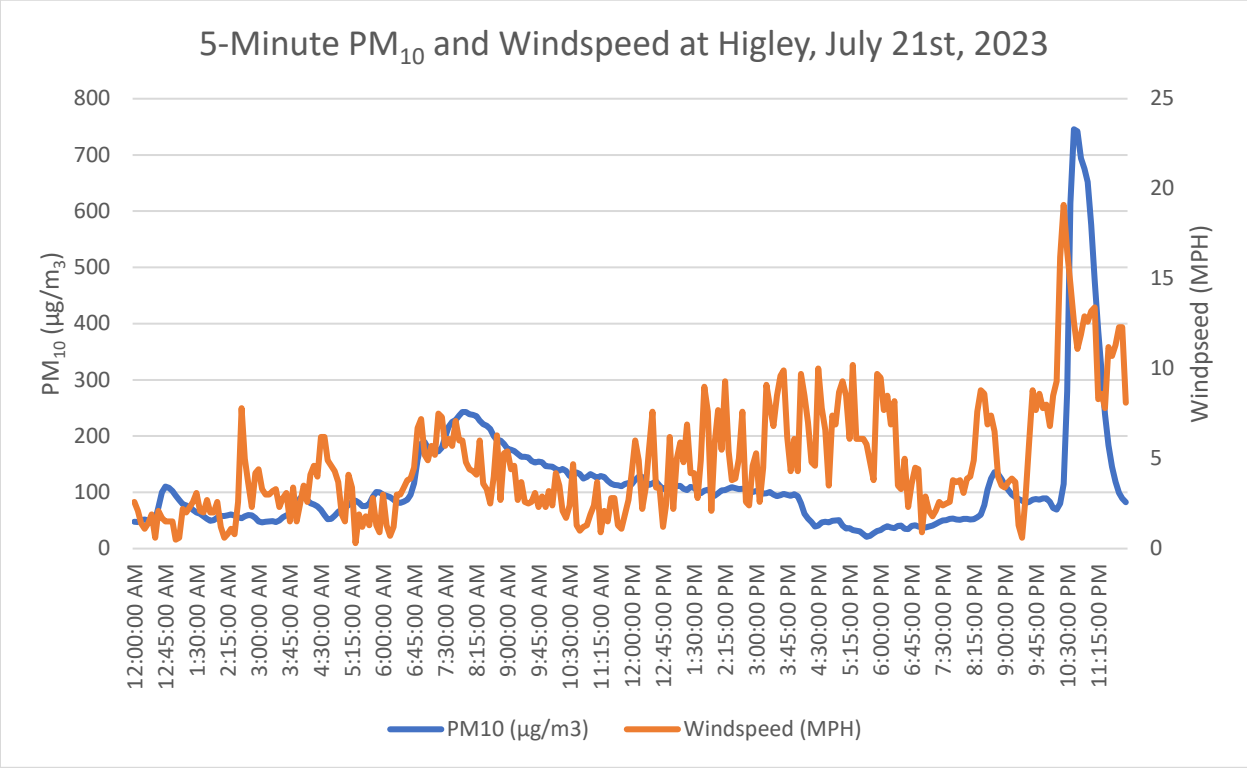


Figure 8: 5-Minute PM_{10} concentrations ($\mu g/m^3$) and windspeed (mph) at West 43rd Avenue monitor on July 21st, 2023.

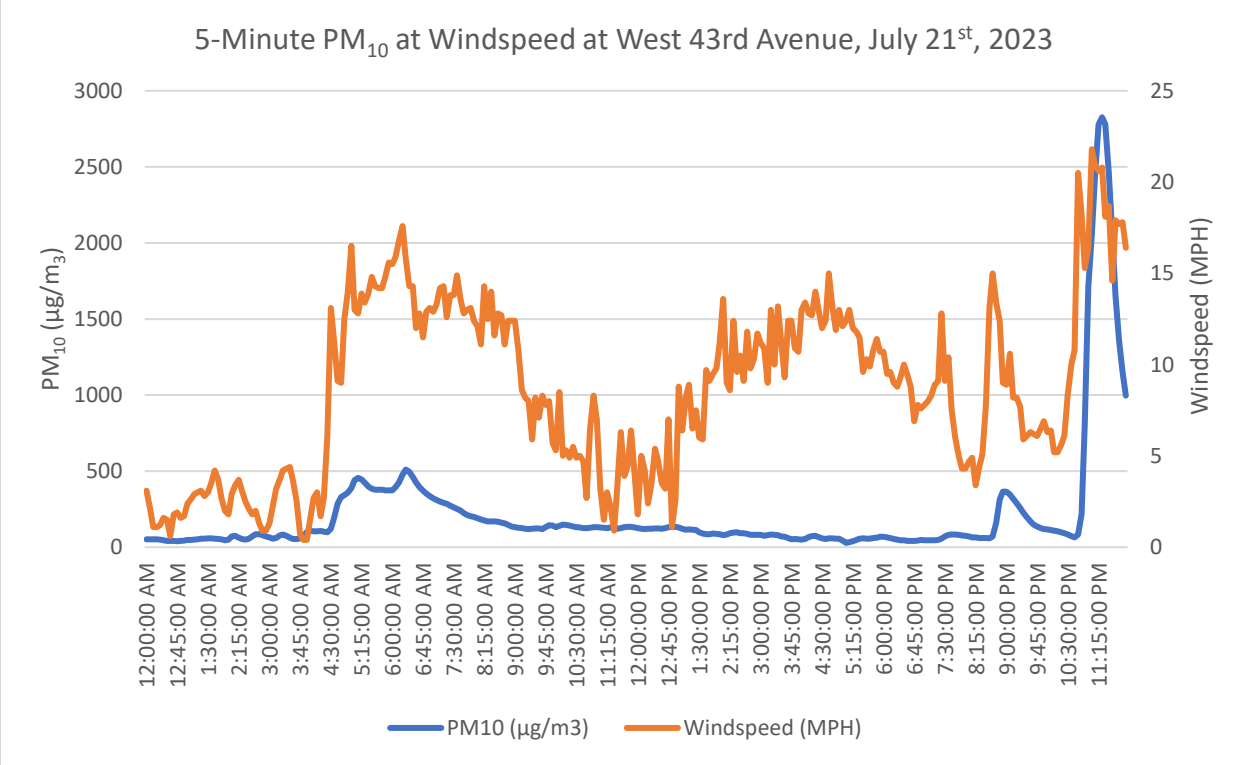
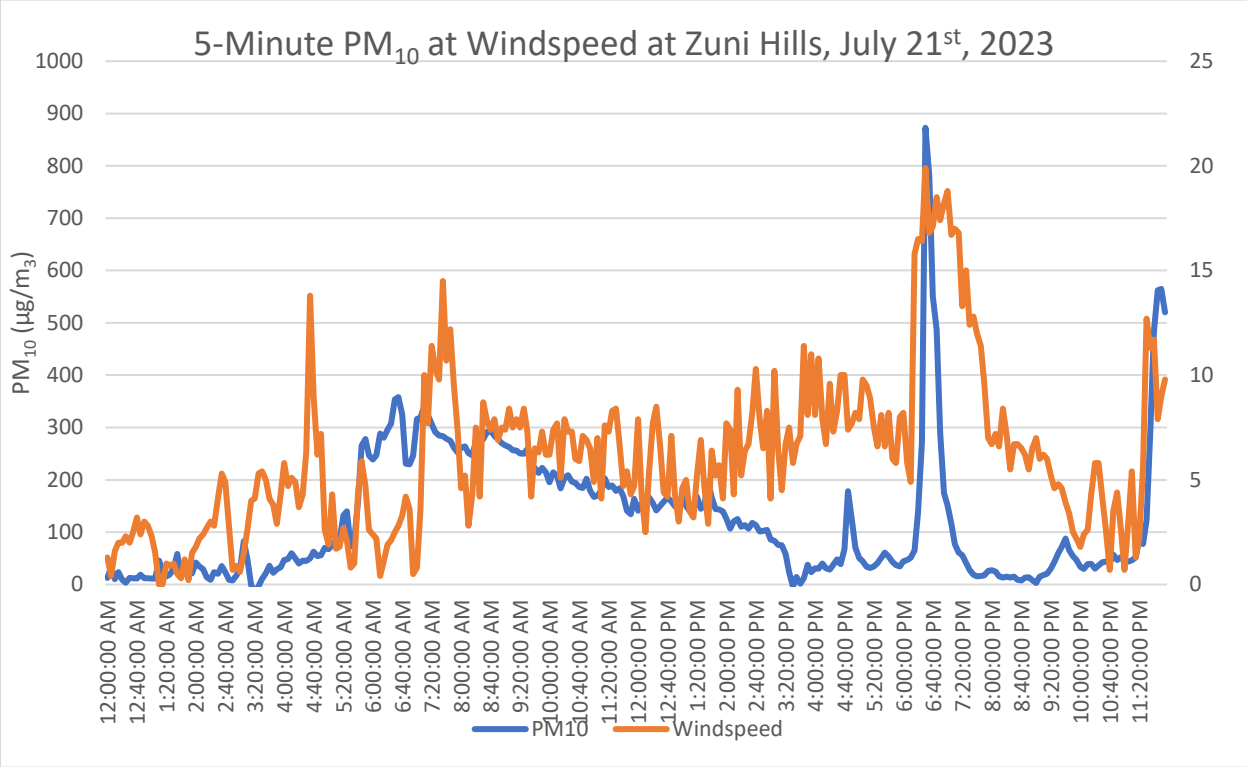


Figure 9: 5-Minute PM_{10} concentrations (µg/m^3) and windspeed (mph) at Zuni Hills monitor on July 21st, 2023.

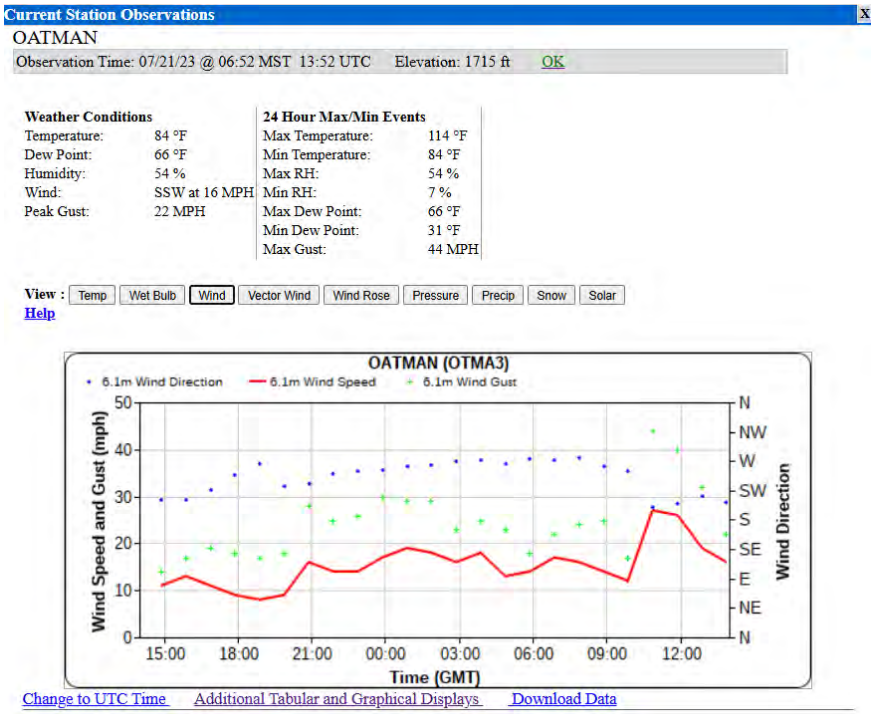


As shown in **Figure 7 – 9**, as windspeeds peaked at their highest level at Higley., on the night of July 21st, 2023, at the West 43rd Avenue monitor, PM_{10} levels also increased to their maximum values, well over NAAQS thresholds. As such, the 24-hour average PM_{10} level at the West 43rd Avenue monitor exceeded NAAQS standards on July 21st, 2023. The peaks in windspeed throughout the day noted at Zuni Hills monitor follow the increases and peaks noted in PM_{10} concentration, as shown in **Figure 9**.

Although windspeeds did not exceed 25 mph at the monitors, windspeed levels over 25 mph were recorded at NOAA KPHX at similar times coinciding with the thunderstorm conditions noted in weather reports throughout the Phoenix Area. Additionally, the smaller peaks in windspeed and PM_{10} concentrations recorded at the Zuni Hills, Higley, and West 43rd Avenue monitors between 6:00 and 7:30 A.M. and 3:30 and 9:00 P.M. coincide with noted increases in windspeeds at NOAA KPHX. [13]as shown in **Figures 7 – 9** . The early morning spikes in PM_{10} identified at Zuni Hills, West 43rd and Higley were attributed to these northeasterly blowing winds due to the monsoon thunderstorm conditions impacting southern Arizona on July 20th and July 21st, 2023. As noted at the OATMA3 weather station, northeasterly winds coming from the Gila Bend area, approximately 65 miles northwest of Zuni Hills monitor, tracked winds of up to 25 miles an hour around 3:00 to 4:00 A.M., the morning of the 21st, and pushed towards the Phoenix Area between 5:00 A.M. and 6:00 A.M., as noted in NOAA KPHX data and monitoring data. **Figure 10** below shows the windspeed trends and direction recorded at OATMA3 weather station between July 20th and 21st, 2023.

[13] MesoWest, *Surface Weather Maps, Arizona Region - OATMAN3 Station*, "7/21/23 Windspeed Station Observations", https://mesowest.utah.edu/cgi-bin/droman/mesomap.cgi?state=AZ&rawsflag=3

Figure 10: Weather Observations at OATMA3 weather station on July 20th – 21st, 2023.



These northeasterly winds in the early morning of July 21st moved dust into the Phoenix area resulting in early morning haze and decreased visibility noted in combination with the smoke from the Chimney Fire, resulting in peaks of PM_{10} concentrations noted beginning around 4:30 A.M., and noted later around 6:00 A.M. in the NOAA KPHX data. **Table 8** shows the time where the highest wind speeds, wind gusts, and their corresponding weather conditions were recorded at NOAA KPHX on July 21st, 2023.

Table 8: NOAA KPHX Weather for July 21st, 2023

Date	Time	Hourly-Averaged Windspeed (MPH)	Wind Gust Recorded (MPH)	Weather Conditions Noted	Visibility (miles)	Wind Direction
7/21/2023	6:51 A.M.	17	28	-	10	NW
7/21/2023	6:55 A.M.	18	25	Haze	6	NW
7/21/2023	7:00 A.M.	20	20	Haze	6	WNW
7/21/2023	7:20 A.M.	18	28	-	10	NW
7/21/2023	3:51 P.M.	16	21	-	10	WNW
7/21/2023	4:30 P.M.	18	24	-	10	WNW
7/21/2023	5:35 P.M.	14	20	-	10	W
7/21/2023	7:25 P.M.	15	25	-	10	NNW
7/21/2023	7:25 P.M.	13	26	-	10	NNW
7/21/2023	8:25 P.M.	25	-	-	9	NNE
7/21/2023	8:35 P.M.	21	-	-	7	ENE
7/21/2023	10:45 P.M.	25	36	Haze	5	SSE
7/21/2023	10:50 P.M.	23	33	Blowing dust	3	SSE

7/21/2023	10:51 P.M.	26	45	Blowing dust	3	SSE
7/21/2023	10:55 P.M.	35*	44	Blowing dust	3	S
7/21/2023	11:00 P.M.	32	43	Blowing dust	4	S
7/21/2023	11:05 P.M.	32	46*	Haze	4	S
7/21/2023	11:10 P.M.	24	32	Haze	4	S
7/21/2023	11:15 P.M.	28	38	Haze	5	S
7/21/2023	11:20 P.M.	18	24	Haze	6	S
7/21/2023	11:25 P.M.	26	33	-	7	S
7/21/2023	11:30 P.M.	30	-	-	7	S
7/21/2023	11:35 P.M.	23	31	-	7	S
7/21/2023	11:40 P.M.	24	32	-	7	SSW
7/21/2023	11:45 P.M.	18	25	-	8	S
7/21/2023	11:50 P.M.	21	-	-	10	S
7/21/2023	11:51 P.M.	20	30		10	SSW

Source: NOAA Weather for Phoenix, Phoenix Sky Harbor International Airport, AZ on 07/21/2023 Link: https://www.weather.gov/wrh/timeseries?site=KPHX&hours=72&units=english&chart=on&headers=on&obs=tabular&hourly=false&pview=standard&font=12&history=yes&start=20230720&end=20230722

Notes: * Highest windspeed or wind gust recorded for the day

- no observation recorded

As shown in **Table 8**, NOAA KPHX noted haze, blowing dust, and high windspeeds with wind gusts over 25 mph throughout the day on July 21st, 2023. The peaks in PM_{10} concentration at 6:35 A.M. of 358.1 µg/m^3 at Zuni Hills monitor, 495.2 µg/m^3 at 6:25 A.M. at West 43rd Avenue monitor, and 242.9 µg/m^3 at 8:00 A.M. at Higley monitor, follow recorded peaks in 5-minute windspeed at these locations and coincide with the wind gust speeds over 24 mph and lowered visibility recorded at NOAA KPHX during this time.

Based on the wind recorded during this time, winds were moving from the southeast and east to Central Phoenix and the NOAA KPHX station, towards Higley, Zuni Hills, and West 43rd Avenue. Given the storm conditions developing over southeastern Arizona and moving west and northwest towards the Phoenix area, wind gusts and elevated wind speeds could have pushed concentrations of PM_{10} in the direction of the monitors and NOAA KPHX, creating concentrated pockets of haze and particulate matter that moved from the southeast into the Phoenix area as the storm advanced. This is evident in the slight peaks in PM_{10} observed at monitors around 6:45 A.M., as well as in the EPA AQI air data, which shows an AQI greater than 100 southwest of the Phoenix area in Casa Grande for July 21st, 2023.

Similarly, the afternoon PM_{10} concentration peaks of 178.1 µg/m3 at 4:45 P.M. at Zuni Hills monitor that followed a gradual increase in 5-minute windspeeds directed east towards NOAA KPHX, align with NOAA KPHX's gradual increase in windspeeds of up to 24 mph at 4:51 P.M. By midafternoon, wind continued to flow east and southeast over Zuni Hills and West 43rd Avenue monitor until approximately 7:00 P.M. towards NOAA KPHX and Central Phoenix and the Higley monitor . As the thunderstorm conditions carried blowing dust east across the Phoenix Area towards Higley monitor, PM_{10} concentrations continued to rise, until the highest concentration of PM_{10} recorded Higle of 745.7 µg/m^3 at 10:55 P.M. This peak concentration also aligns with the highest windspeed recorded at Higley monitor for July 21st, 2023, of 21.5 mph.

The West 43rd Avenue monitor did not record any peaks in PM_{10} concentrations again until 9:00 P.M., shortly after decreased visibility and wind speeds of up to 25 mph were recorded at NOAA KPHX. As winds moved east and northeast towards NOAA KPHX from West 43rd Avenue, beginning around 7:15 P.M., they

pushed up dust and haze into the atmosphere, increasing PM_{10} concentrations to 249 µg/m³ at 9:00 P.M. at the West 43rd Avenue monitor, which then flowed east towards NOAA KPHX and Higley.

The change in wind direction from primarily west and northwest to south and southwest later in the day (after 7:00 P.M., per NOAA KPHX), may account for the difference in times that the West 43rd and Zuni Hills monitors recorded their highest PM_{10} concentrations on July 21st, 2023.

The highest windspeed recorded at NOAA KPHX was 35 mph at 10:55 P.M., with blowing dust and a decreased visibility of 3 miles. The highest wind gust was recorded at 11:05 P.M., of 46 mph. The high windspeeds and wind gusts decreased visibility, and noted blowing dust at NOAA KPHX corresponds to similar conditions noted at Higley and West 43rd Avenue monitor on the night of July 21st, 2023. Low visibility due to blowing dust and haze in the atmosphere from thunderstorm activity around the time of the highest PM_{10} concentration noted at Higley and West 43rd Avenue and resulted in 24-hour average PM_{10} concentrations to be exceeded on July 21st, 2023.

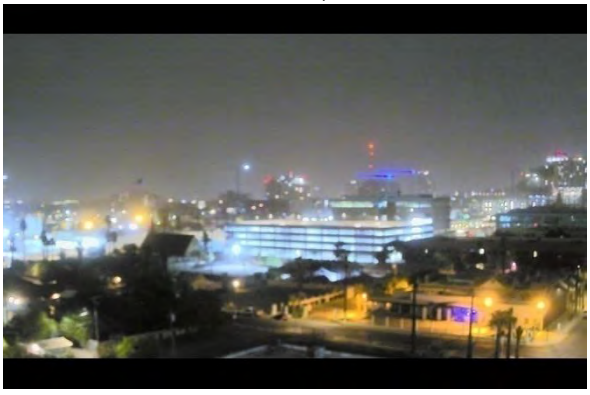
The photographs below show ADEQ's Visibility Camera Historical Archive photos of the Phoenix Area at the time prior to and during the dust storm and thunderstorm conditions on the evening of July 21st, 2023. Note that haze conditions were recorded around 6:00 A.M. at NOAA KPHX, resulting in reduced visibility. Haze was then followed by thunderstorm weather conditions such as high winds and associated dust accumulation in the early afternoon to early evening, and blowing dust was recorded the evening of July 21st as well, following the southwesterly high winds due to the day's thunderstorm conditions.

South Mountain Camera, 6:15 A.M.

South Mountain Camera, 6:45 A.M.

Camelback Mountain Camera, 7:00 A.M.

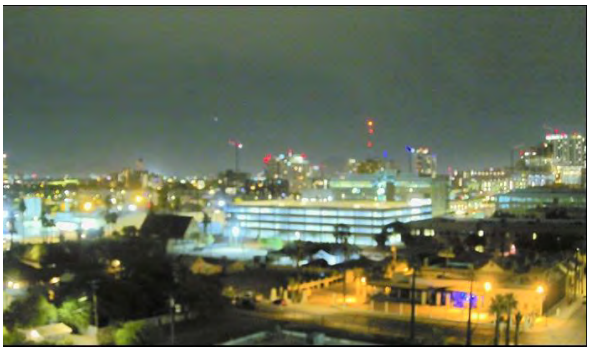
Camelback Mountain Camera, 11:00 P.M.



Camelback Mountain Camera, 7:00 P.M.

Camelback Mountain Camera, 8:45 P.M.

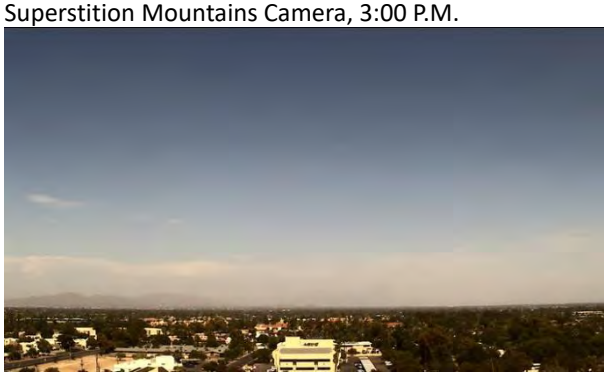
Superstition Mountains Camera, 9:00 P.M.



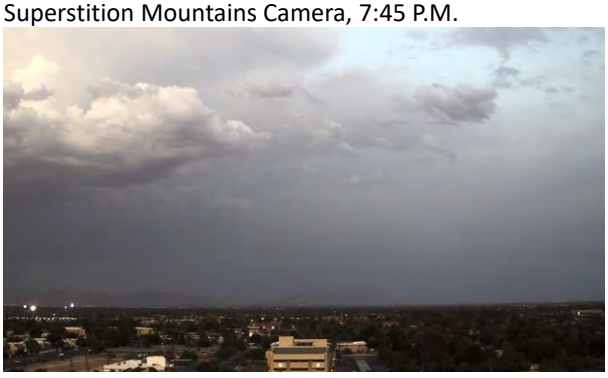
Superstition Mountains Camera, 11:00 P.M.

Superstition Mountains Camera, 3:00 P.M.

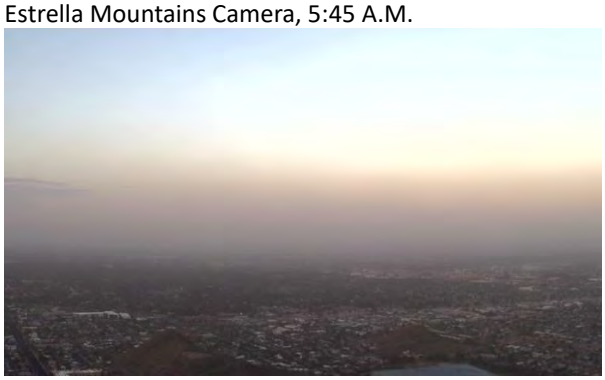
Superstition Mountains Camera, 7:45 P.M.



Estrella Mountains Camera, 5:45 A.M.



Estrella Mountains Camera, 10:30 P.M.



White Tank Mountains Camera, 6:45 A.M.

White Tank Mountains Camera, 6:45 P.M.

Note: There are no images available in the archive for South Mountain camera after 12:45 P.M., for Estrella Mountains camera after 10:30 P.M. on July 21, 2023

July 26th, 2023, Atypical Event

A subtropical high-pressure system situated across New Mexico created a southeasterly wind flow in Arizona resulting in thunderstorm activity developing across Southeastern Arizona on the afternoon of July 26th, 2023[14]. Per a NOAA Storm Event webpage for Mesa and Maricopa County on July 26th, 2023, these thunderstorms created strong downburst of winds and were responsible for dense blowing dust conditions noted across Pinal and Maricopa Counties and affected portions of the Phoenix Area. Thunderstorms, high wind, and dust storms were noted in 36 NOAA Storm Events weather reports in southeastern Arizona counties between July 26th and July 27th, 2023[15]. In addition to these reports noting dust storm conditions, an exceedance in the 24-hour average PM_{10} NAAQS was recorded at the Higley monitor, and wind and wind gust speeds exceeding 25 mph.

Data from the NOAA KPHX also recorded these thunderstorms and resulting high wind speeds and blowing dust conditions. **Table 9** lists the 24-hour average PM_{10} concentrations, and highest windspeeds and wind gust speeds recorded at the Higley monitor on July 26th, 2023.

Table 9: Windspeed and PM_{10} Data for July 26th, 2023

Site	Date	24-hour average PM_{10} ($\mu g/m^3$)	Max Hourly-Averaged Windspeed (MPH)	Time	Max Wind Gust (MPH)	Time
Higley	7/26/2023	165.3*	30.5	9:45 P.M.	31.1	9:45 P.M.

Source: Maricopa County Air Quality Departments (MCAQD) Air Quality Planning & Analysis Division Higley Air Quality Monitoring Station Data for July 26th, 2023.

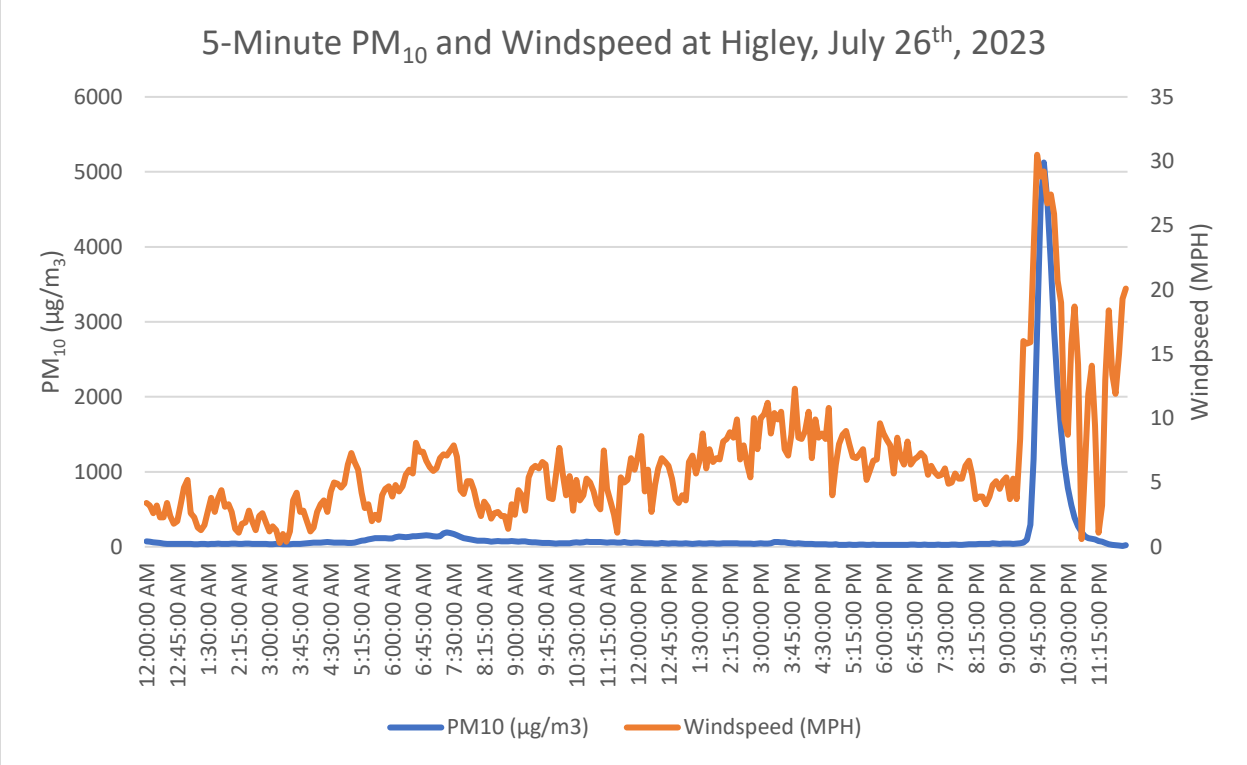
Notes: *Measurement exceeds PM_{10} NAAQS.

As shown in **Table 9**, on July 26th, 2023, the highest wind speed of 30.5 mph and wind gust of 31.1 were recorded at 9:45 P.M. at Higley monitor. As windspeeds increased the night of July 26th, 2023, PM_{10} concentrations rose as well, resulting in the highest level of PM_{10} recorded at 9:45 P.M. of 5,125 $\mu g/m^3$ at Higley monitor. **Figure 11** below shows the corresponding increase in 5-minute PM_{10} with the increase in windspeeds to greater than 25 mph on the evening of July 26th, 2023, at Higley monitor.

Figure 11 5-Minute PM_{10} concentrations ($\mu g/m^3$) and windspeed (mph) at Higley monitor on July 26th, 2023.

[14] NOAA, *Storm Events Database*, Event Details "1121093,"https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=1121093.

[15]NOAA, *Storm Events Database*, "Events in Arizona from July 26–27, 2023," https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=ALL&beginDate_mm=07&beginDate_dd=26&beginDate_yyyy=2023&endDate_mm=07&endDate_dd=27&endDate_yyyy=2023&county=ALL&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=4%2CARIZONA.



As shown in **Figure 11**, the highest wind speed recorded of 30.5 mph at 9:45 P.M. coincides with the peak in PM_{10} concentrations at the Higley monitor shortly after at 9:55 P.M. on July 26th, 2023. On July 26th, 2023, thunderstorm conditions resulting in high winds and blowing dust began in afternoon but slowly began to increase in the evening as thunderstorms drifted into the Phoenix Area. These high windspeeds and resulting blowing dust on the evening of July 26th, 2023, were also recorded at NOAA KPHX, where windspeeds reached up to 29 mph and wind gusts were recorded up to 43 mph. **Table 10** below shows the data recorded for the evening of July 26th, 2023, at NOAA KPHX during the time when max windspeeds and PM_{10} concentrations were recorded at Higley monitor.

Table 10: NOAA KPHX Data for July 26th, 2023

Date	Time	Hourly-Averaged Windspeed (MPH)	Wind Gust Recorded (MPH)	Weather Conditions Noted	Visibility (miles)	Wind Direction
7/26/2023	9:50 P.M.	20	41	Blowing dust	6	SSE
7/26/2023	9:51 P.M.	25	43*	Blowing dust	3	SSE
7/26/2023	9:55 P.M.	18	-	Blowing dust	1.75	SSE
7/26/2023	9:57 P.M.	17	43*	-	0.5	S
7/26/2023	10:00 P.M.	17	-	-	0.5	S
7/26/2023	10:05 P.M.	25	38	-	0.5	SSE
7/26/2023	10:10 P.M.	23	29	-	0.5	SSE
7/26/2023	10:15 P.M.	23	36	-	0.5	SSE
7/26/2023	10:18 P.M.	29*	41	-	0.5	SE
7/26/2023	10:20 P.M.	25	43*	Blowing dust	2	SE
7/26/2023	10:25 P.M.	23	43*	Blowing dust	2.5	ESE

7/26/2023	10:30 P.M.	22	31	Blowing dust	3	E
7/26/2023	10:35 P.M.	22	30	Blowing dust	6	E
7/26/2023	10:40 P.M.	25	31	-	8	ENE
7/26/2023	10:43 P.M.	26	35	Thunder	8	E
7/26/2023	10:45 P.M.	23	-	-	8	E
7/26/2023	10:51 P.M.	18	30	Thunder	9	E

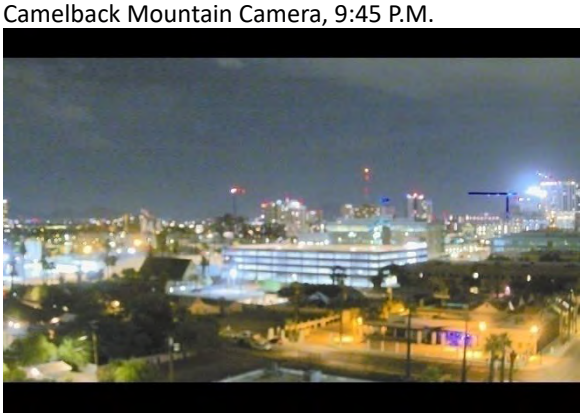
Source: NOAA Weather for Phoenix, Phoenix Sky Harbor International Airport, AZ on 07/26/2023 Link: https://www.weather.gov/wrh/timeseries?site=KPHX&hours=72&units=english&chart=on&headers=on&obs=tabular&hourly=false&pview=standard&font=12&history=yes&start=20230725&end=20230727
Notes: * Highest windspeed or wind gust recorded for the day
- no observation recorded

As shown in **Table 10**, on the evening of July 26th, 2023, around 9:50 P.M. blowing dust and wind speeds and wind gusts greater than 25 mph were recorded at NOAA KPHX. The highest wind speed recorded at NOAA KPHX was 29 mph, before and after multiple recordings of wind gust speeds reaching 43 mph. The highest windspeed and wind gusts recorded shown in **Table 10** correspond with the similar time frame at which the highest windspeeds, wind gusts, and PM_{10} concentrations were recorded at Higley monitor on July 26th, 2023, peaking at 9:55 P.M. **Table 10** shows that blowing dust and high winds were noted at 9:50 P.M., with noted decrease in visibility to ½ a mile during this time and continued until about 10:50 P.M.

In addition, thunder conditions and wind gusts greater than 25 mph are recorded again at the time of the highest windspeed noted at Higley monitor at 9:45 P.M. As such, thunderstorm activities caused high winds and blowing dust throughout the Phoenix Area and at Higley monitors, resulting in low visibility, Higley monitor 24-hour average PM_{10} NAAQS exceedance, and increased PM_{10} concentrations to occur on July 26th, 2023.

The photographs below show ADEQ's Visibility Camera Historical Archive photos of the Phoenix Area at the time prior to and during the dust storm and thunderstorm conditions on the evening of July 26th, 2023. Note the dust storm conditions and dense blowing winds were documented to hit the Phoenix Area around 9:30 P.M., as shown in NOAA KPHX and MCAQD monitoring data.

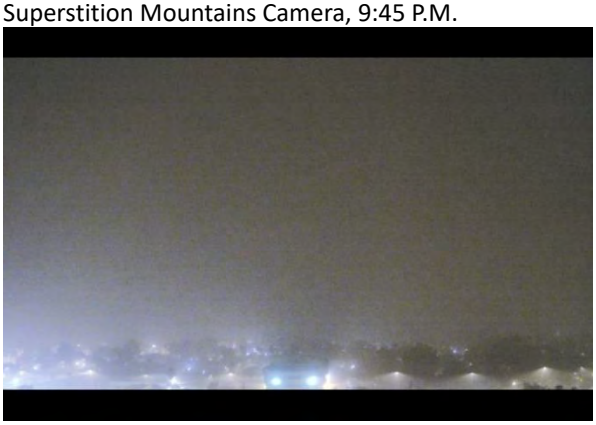
Camelback Mountain Camera, 9:45 P.M.



Camelback Mountain Camera, 10:00 P.M.

Superstition Mountains Camera, 9:00 P.M.

Superstition Mountains Camera, 9:45 P.M.



White Tank Mountains Camera, 10:00 P.M.

White Tank Mountains Camera, 10:45 P.M.

Note: There are no images available in the archive for South Mountain and Estrella Mountains camera on July 26, 2023

July 14th, 2024, Atypical Event

On July 14th, 2024, a subtropical high-pressure front situated over the Southwestern United States flowed across Arizona from the southeast towards the Phoenix area. This subtropical front carrying a large content of water vapor in combination with high temperatures was by high wind to develop "strong to severe"[16] thunderstorms over the Phoenix valley in the later afternoon of July 14th, 2024. As the storm continued to build into the evening, it migrated northwest towards south central Arizona and the Higley monitor, generating high winds and areas of dense blowing dust. The NWS issued a dust storm warning starting around 6:45 P.M. on the evening of the 14th for areas surrounding State Highway 101 in Maricopa County, AZ and State Highway 202 in Maricopa County, AZ and State Highway 51 in Maricopa County, AZ and State Highway 87 in Maricopa County, AZ. This area is approximately 5 miles north of the Project area and Higley monitor. By 8:37 P.M., a wall of dust was reported along a line from Canyon Lake to Usery Mountain Park to Mesa, moving northwest towards the Central Phoenix area at speeds greater than 25 mph. By this point, visibility had dropped to less than a quarter mile, and winds reached up to 40 mph.

With wind speeds greater than 25 mph and blowing dust in the atmosphere, high PM_{10} concentrations were noted in the Phoenix area at multiple MCAQD monitoring stations on July 14th, 2024. NAAQS PM_{10} exceedances were noted throughout the Phoenix Area at four MCAQD monitoring stations including the Central Phoenix, South Phoenix, South Scottsdale, and West Chandler monitors. The highest PM_{10} concentrations recorded at these monitors coincides with the times of dust storms reported by NOAA Storm Event Reports for Maricopa County and the Phoenix Area and aligns with NOAA KPHX data for July 14th, 2024. The Higley monitor did not exceed NAAQS PM10 on July 14th, but came close to exceeding, and West Chandler Monitor, approximately 9.4 miles west of Higley exceeded, and the additional MCAQD monitors that exceeded PM_{10} NAAQS are within 22 miles of Higley monitor. **Table 11** captures windspeed and PM_{10} data at Higley, West Chandler, South Scottsdale, and Durango Complex monitoring stations on July 14th, 2024. For more details on this data, please refer to **Appendix A**.

Table 11: Windspeed and PM_{10} Data for July 14th, 2024

Site	Date	24-hour average PM_{10} ($\mu g/m^3$)	Max Hourly-Averaged Windspeed (MPH)	Time	Max Wind Gust (MPH)	Time
Higley	7/14/2024	142	22.2	8:55 P.M.	38.1	8:00 P.M.
South Scottsdale	7/14/2024	161.1*	22.9	8:50 P.M.	42.5	8:00 P.M.
West Chandler	7/14/2024	191.7*	17.8	9:05 P.M.	34.7	8:00 P.M.
Durango Complex	7/14/2024	152*	16.8	2:25 A.M.	32.8	8:00 P.M.

Source: Maricopa County Air Quality Departments (MCAQD) Air Quality Planning & Analysis Division, Higley, Dysart and Zuni Hills Air Quality Monitoring Station Data for July 14th, 2024.

Notes: *Measurement exceeds PM_{10} NAAQS.

As shown in **Table 11** high wind speeds, with max hourly windspeeds reaching up to 22.9 mph, were recorded at South Scottsdale, 22.2 mph at Higley, 17.8 mph at West Chandler, and 16.8 mph at Durango Complex monitors on July 14th , 2024. All four monitors recorded wind gust speeds greater than 25 mph at 8:00 P.M., with South Scottsdale recording the highest wind gust speed of 42.5 mph, Higley with 38.1 mph, West Chandler with 34.7 mph, and Durango Complex with 32.8 mph wind gust speeds. All monitors recorded similar peaks in PM_{10} concentrations aligning with increases in windspeed to the maximum wind

[16] NOAA, *Storm Events Database*, Event Details "1202195," https://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=1202195

gust times recorded around 8:00 P.M., tracking with the reported thunderstorm and blowing dust conditions reported in the Phoenix Area.

Increased PM_{10} concentrations observed on July 14th, 2024, coincided with these high wind conditions in the project area and MCAQD monitors nearby, as shown in **Figures 12** through **15** below .

Figure 12: 5-Minute PM_{10} concentrations (µg/m^3) and windspeed (mph) at Higley monitor on July 14th, 2024.

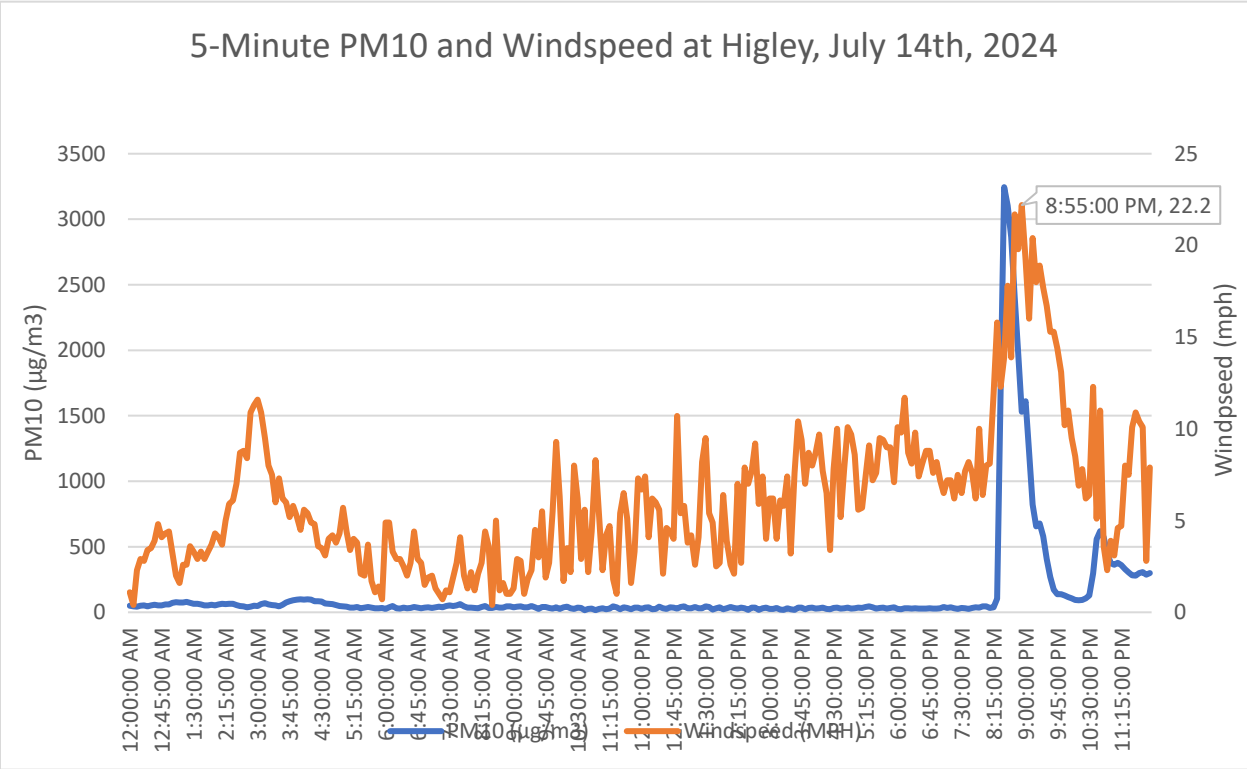


Figure 13: 5-Minute PM_{10} concentrations ($\mu g/m^3$) and windspeed (mph) at Durango Complex monitor on July 14th, 2024.

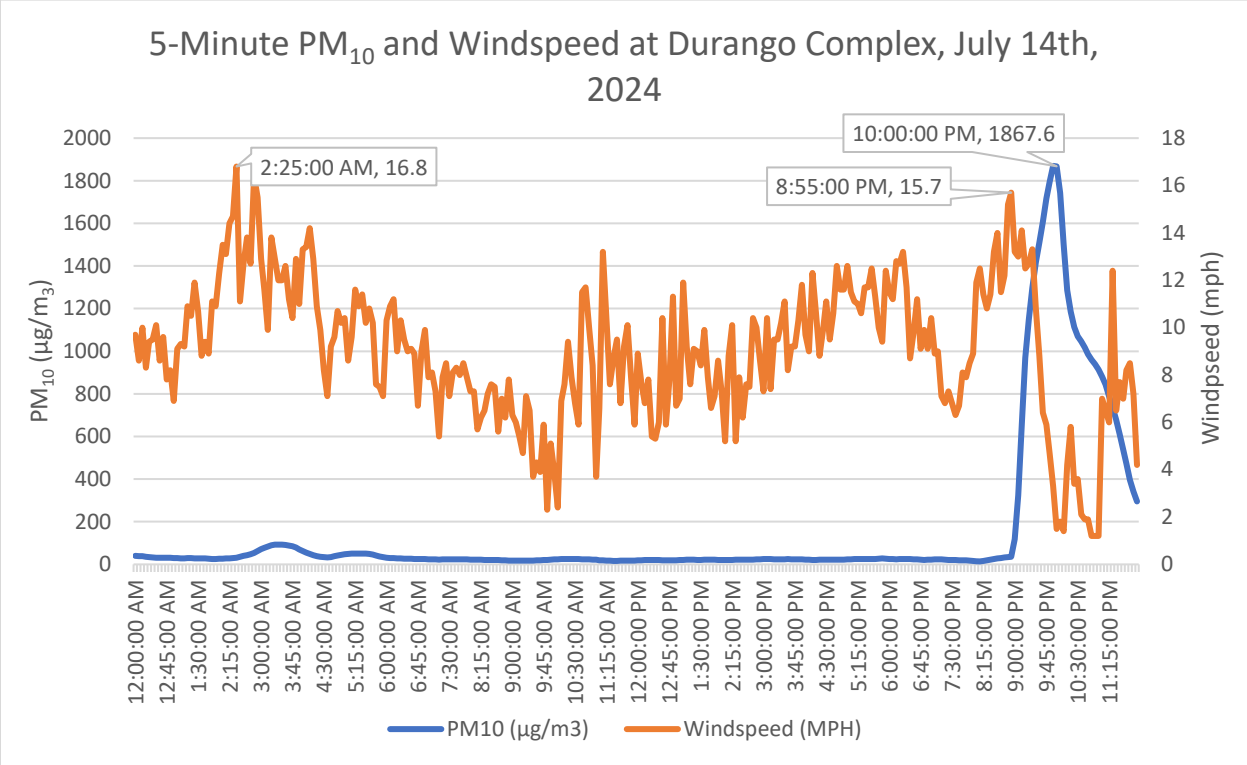


Figure 14: 5-Minute PM_{10} concentrations ($\mu g/m^3$) and windspeed (mph) at South Scottsdale monitor on July 14th, 2024.

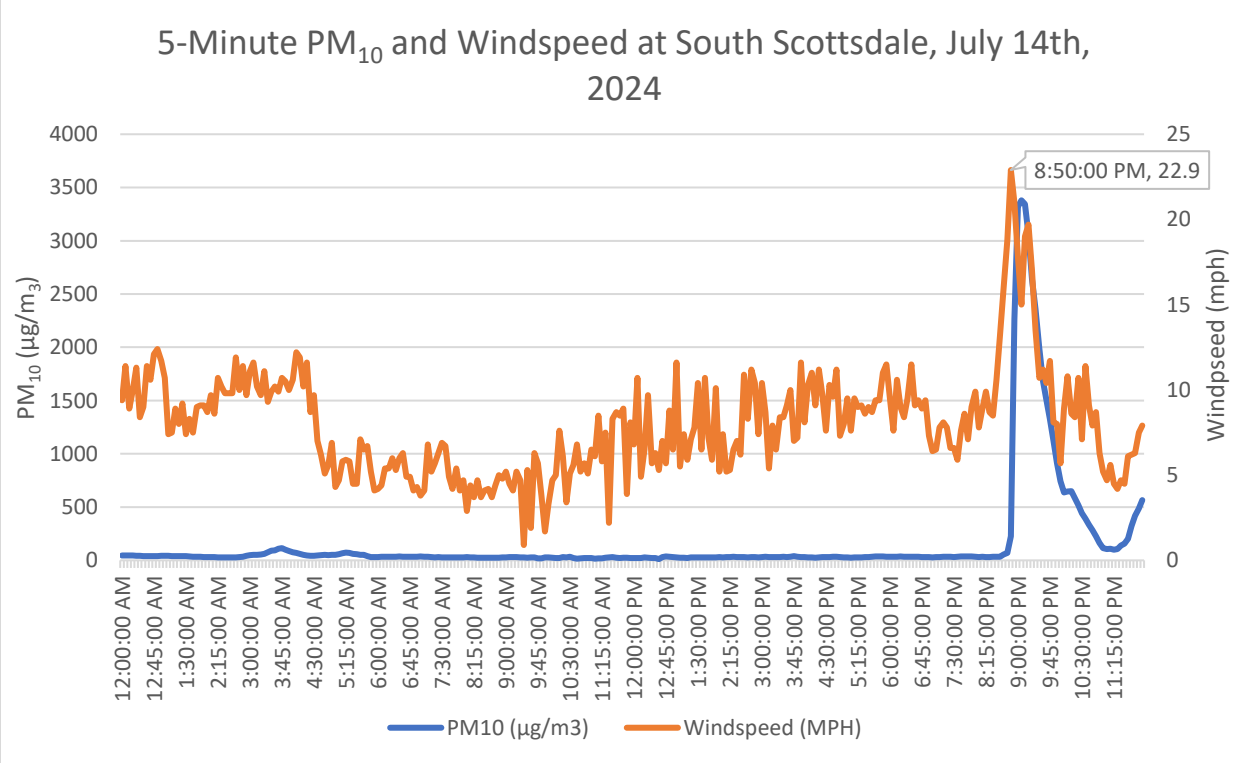
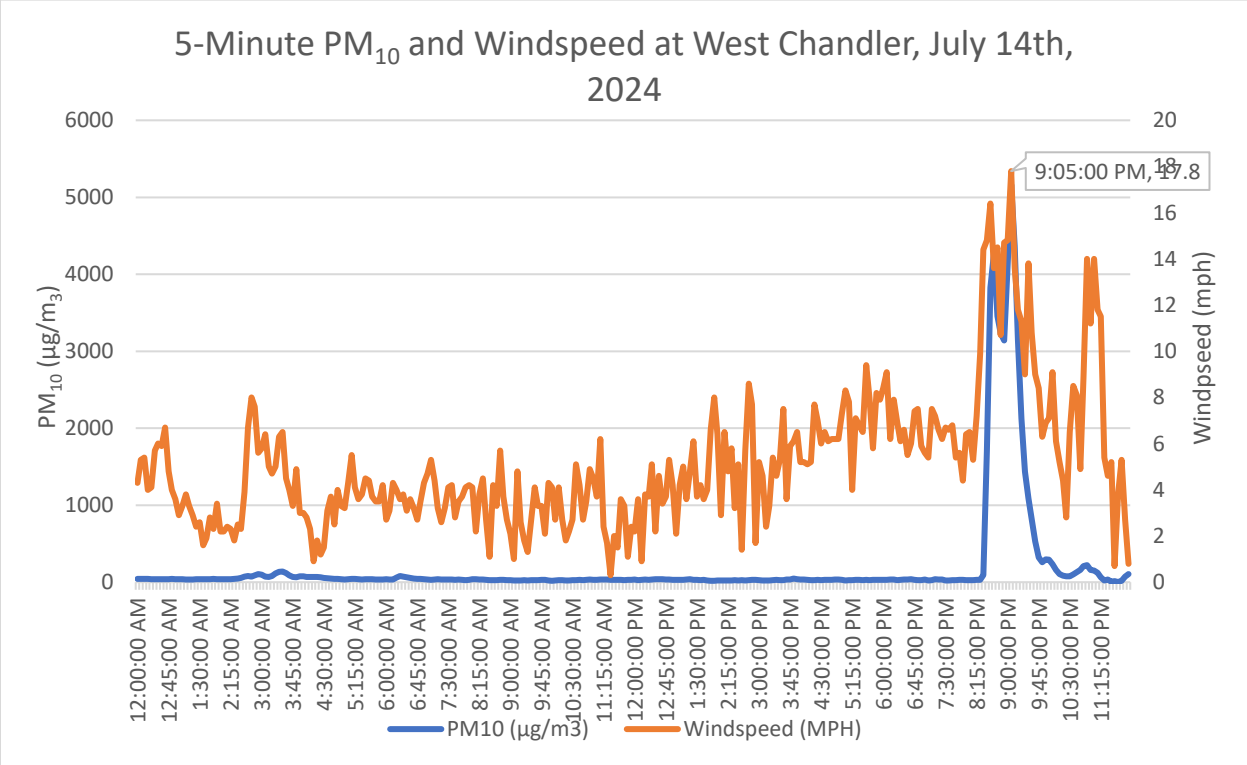


Figure 15: 5-Minute PM_{10} concentrations (µg/m^3) and windspeed (mph) at West Chandler monitor on July 14th, 2024.



As shown in **Figures 12** through **15**, the highest wind speed recorded of 22.2 mph at 8:55 P.M. coincides with the peak in PM_{10} concentrations of 3244.8 µg/m^{3}at the Higley monitor at 8:30 P.M. on July 14th, 2024. On July 14th, 2024, thunderstorm conditions resulting in high winds and blowing dust began in the late afternoon but slowly began to increase in the evening as thunderstorms drifted northwest from the southeast into the Phoenix Area. A similar trend in peak windspeeds coinciding with peak PM10 concentrations between 8:30 P.M. and 10:00 P.M. were identified at West Chandler, South Scottsdale, and Durango Complex monitors on July 14th, 2024, as shown in Figures **12** through **15**. The Durango Complex monitor recorded its peak windspeeds and PM_{10} concentrations later in the evening as the storm moved from the southeastern Phoenix area from the Higley monitor west and northwest over the Central Phoenix area towards the Durango Complex monitor.

Although Higley monitor did not exceed PM_{10} NAAQS on July 14th, the trend in increasing wind speed and elevated PM_{10} levels at Higley monitor between 7:00 P.M. and 11:00 P.M. tracks with conditions noted at monitors nearby did exceed PM_{10} NAAQS on July 14th, 2024. This demonstrates that the thunderstorm and dust storm conditions impacted the phoenix area, including Higley monitor and the project site's general vicinity.

These high windspeeds and resulting blowing dust on the evening of July 14th, 2024, were also recorded at NOAA KPHX, where windspeeds reached up to 26 mph and wind gusts were recorded up to 41 mph. **Table 12** below shows the data recorded for the evening of July 14th, 2024, at NOAA KPHX during the time when max windspeeds and PM_{10} concentrations were recorded at Higley monitor.

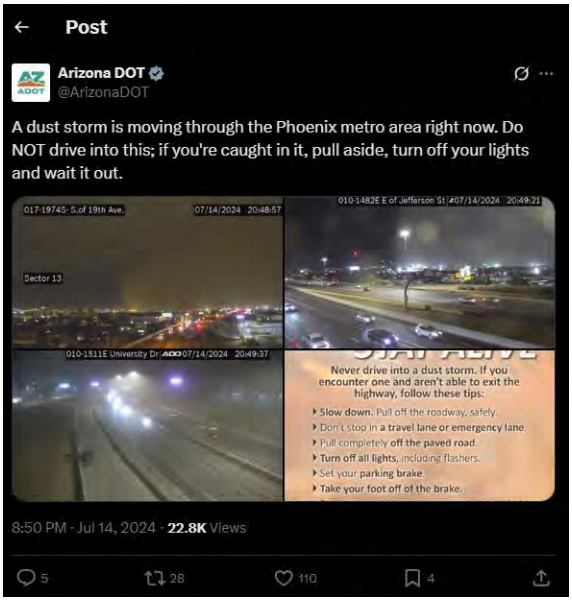
Table 12: NOAA KPHX Weather for July 14th, 2024						
Date	**Time**	**Hourly-Averaged Windspeed (MPH)**	**Wind Gust Recorded (MPH)**	**Weather Conditions Noted**	**Visibility (miles)**	**Wind Direction**
7/14/2024	5:20 P.M.	17	25	-	10	W
7/14/2024	6:10 P.M.	20	25	-	10	W
7/14/2024	8:25 P.M.	17	26	-	10	SW
7/14/2024	8:30 P.M.	23	30	-	10	SW
7/14/2024	8:40 P.M.	24	30		10	SW
7/14/2024	8:45 P.M.	18	24	-	10	SSW
7/14/2024	8:49 P.M.	26*	41*	Blowing dust	1	S
7/14/2024	8:50 P.M.	25	36	Blowing dust	1	S
7/14/2024	8:51 P.M.	25	41*	Blowing dust	1	SSW
7/14/2024	8:55 P.M.	22	29	Blowing dust	1	S
7/14/2024	9:00 P.M.	22	31	Blowing dust	1	S
7/14/2024	9:01 P.M.	24	33	Thunder, Blowing dust	1	S
7/14/2024	9:05 P.M.	23	31	Blowing dust	1	S
7/14/2024	9:08 P.M.	25	35	Thunder shwr, Blowing dust	1	S
7/14/2024	9:10 P.M.	21	30	Lt rain, Blowing dust	1	S
7/14/2024	9:13 P.M.	16	36	Hvy thunder shwr, Blowing dust	0.75	S
7/14/2024	9:15 P.M.	10	16	Hvy rain, Blowing dust	0.75	W
7/14/2024	9:20 P.M.	7	36	Hvy rain, Blowing dust	1	S
7/14/2024	9:25 P.M.	7	36	Lt rain, Blowing dust	1.75	SSW
7/14/2024	9:55 P.M.	7	-	Blowing dust	5	SSW
7/14/2024	10:15 P.M.	22	28	Blowing dust	5	N
7/14/2024	10:45 P.M.	13	28	Blowing dust	4	N
7/14/2024	10:51 P.M.	8	29	Blowing dust	4	N
7/14/2024	11:25 P.M.	14	21	Blowing dust	3.5	W

Source: NOAA Weather for Phoenix, Phoenix Sky Harbor International Airport, AZ on 07/14/2024 Link: https://www.weather.gov/wrh/timeseries?site=KPHX&hours=72&units=english&chart=on&headers=on&obs=tabular&hourly=false&pview=standard&font=12&history=yes&start=20240713&end=20240716&plot=
Notes: * Highest windspeed or wind gust recorded for the day
- no observation recorded

Per NOAA KPHX data, the highest wind speed recorded for July 14th, 2024, was 26 mph at 8:49 P.M., along with the highest wind gust speed recorded of 41 mph. This maximum wind speed and wind gust speed follows the movement of thunderstorms and blowing dust, as it moved northwest towards Central Phoenix area and NOAA KPHX from the southeast, moving northwest from Higley and West Chandler monitors which recorded maximum windspeeds approximately 50 minutes prior. As the thunderstorms moved northwest and west over the Phoenix area, visibility decreased down to 0.75 miles along with visible blowing dust conditions were noted in the NOAA KPHX data on the evening of July 14th, 2024. The blowing dust conditions noted at NOAA KPHX lasted from approximately 8:50 P.M. till 11:35 P.M., following the time in which Higley, West Chandler, South Scottsdale, and Durango Complex monitors all recorded peak PM_{10} concentrations for the day.

On July 14th, 2024, thunderstorm activity resulted in high winds, blowing dust, and reduced visibility as reported by NOAA KPHX. These conditions led to coinciding peaks in windspeed, wind gusts, and PM_{10} concentrations recorded at four MCAQD monitors, ultimately resulting in exceedances of the PM_{10} NAAQS. The photographs below from news reports of the storm event demonstrate the levels and severity of the dust storm conditions occurring on July 14th, 2024.

Photograph: Screenshot of timelapse of sky in Casa Grande on July 14th, 2024, from 12News viewer Jessica Carvalho[17].



Photograph: Screenshot of social media post by ADOT showing traffic camera's on Juy 14th, 2024 with visible dust in the atmosphere[18].

[17] 12News, Dust Storm Warning Issued for East Valley Sunday July 14th, accessed July 24th, 2024. https://www.12news.com/article/weather/severe-weather/dust-storm-warning-issued-for-the-east-valley-sunday-july-14-2024/75-4de75cba-e082-4899-8adf-3960f6ad0ab5

[18] https://x.com/ArizonaDOT/status/1812696122777031151

5.0 Project PM_{10} Background Concentrations, Removing Atypical Events

In summary, four (4) days are being proposed to be excluded from the project's background concentration analysis because they have been considered as affected by an atypical air quality event, such as a high wind event, monsoon conditions, or thunderstorm activity. These days were removed from the original Higley monitor 2022 through 2024 PM_{10} data set due to the atypical-type nature of the local conditions when the high PM_{10} values were observed (e.g., windblown dust, high winds, haze). Once removed, the remaining data was used to calculate a PM_{10} background concentration of 107 µg/m^3.

Table 13: Project Monitoring Station Highest 24-hour PM_{10} Readings, Removing Atypical Events

Higley			
Data Year	**2022**	**2023**	**2024**
Number of Readings	362	333	359
1st	99	143	110
2nd	88	122	106
3rd	86	***107***	104
4th	83	103	103

Source: U.S. EPA Outdoor Air Quality Data, Download Daily Air Quality Data, https://www.epa.gov/outdoor-air-quality-data/download-daily-data

Note: *4th highest 24-hour readings are highlighted in red, removing atypical events.

Table 13 shows that with removing atypical events, Higley monitors 4th highest value over three years (2022-2024) is 107 µg/m^3. This comes from the 4th highest reading out of a total of 1054 days of sampling. This background concentration is under the PM_{10} NAAQS threshold.

The predicted background concentration, removing data for atypical events, of the project is ***107 µg/m^3.***

Per 40 CFR 50, Appendix K, the Maricopa County NAAQS threshold for PM_{10} 24-hour average concentration threshold is 150 µg/m^3. As such, the predicted background concentration when removing atypical event data does not exceed the NAAQs threshold.

Days in which an atypical event, i.e., a dust storm or high wind event occurred in the region and impacting Higley monitor and the project site have been identified. Because regional atypical events were occurring on these days, it is inappropriate to consider these days when calculating background PM_{10} concentrations for the projects hot spot analyses. Finally, after removing days in which an atypical event occurred, the 24-hour PM_{10} background concentration identified for 2022 through 2024 is 107 µg/m^3. 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.

Appendix A: Maricopa County Air Quality Department Planning & Analysis Division – Air Quality Monitor Data

Site: Higley						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	12:00:00 AM	71.7		5.5	93.1	3.9
9/2/2022	12:05:00 AM	66.2		-	105.5	5.1
9/2/2022	12:10:00 AM	61.4		-	106.8	5.1
9/2/2022	12:15:00 AM	56		-	106.3	5.9
9/2/2022	12:20:00 AM	48.8		-	113.3	7.9
9/2/2022	12:25:00 AM	42.1		-	118.2	5.9
9/2/2022	12:30:00 AM	39.2		-	116	5.4
9/2/2022	12:35:00 AM	39.5		-	118.9	6.5
9/2/2022	12:40:00 AM	38.4		-	134.7	6.1
9/2/2022	12:45:00 AM	36.5		-	137.9	5.8
9/2/2022	12:50:00 AM	36.2		-	134	5.4
9/2/2022	12:55:00 AM	38.2		-	132.9	5
9/2/2022	1:00:00 AM	39.1		4.4	132.7	4.7
9/2/2022	1:05:00 AM	37.5		-	123.3	4.6
9/2/2022	1:10:00 AM	34.9		-	116.1	5.4
9/2/2022	1:15:00 AM	35.5		-	123.8	5.3
9/2/2022	1:20:00 AM	37.9		-	116	4.8
9/2/2022	1:25:00 AM	37.4		-	120.3	5
9/2/2022	1:30:00 AM	35.7		-	124.9	4
9/2/2022	1:35:00 AM	36.2		-	130.8	4.8
9/2/2022	1:40:00 AM	39.6		-	128.1	2.7
9/2/2022	1:45:00 AM	41.5		-	121.3	3.6
9/2/2022	1:50:00 AM	40		-	121.7	4
9/2/2022	1:55:00 AM	38.5		-	117.5	3.9
9/2/2022	2:00:00 AM	39.9		3.8	111.3	4.6
9/2/2022	2:05:00 AM	42.4		-	103.3	4.5
9/2/2022	2:10:00 AM	42		-	119.7	5.4
9/2/2022	2:15:00 AM	39.5		-	113.2	5.1
9/2/2022	2:20:00 AM	38.9		-	124.8	4.1
9/2/2022	2:25:00 AM	41.1		-	119.2	3
9/2/2022	2:30:00 AM	41.9		-	131.4	4.6
9/2/2022	2:35:00 AM	40.1		-	114.8	3.9
9/2/2022	2:40:00 AM	38		-	132.7	4.4
9/2/2022	2:45:00 AM	38.3		-	122	3.6
9/2/2022	2:50:00 AM	39		-	162.2	1.8
9/2/2022	2:55:00 AM	37.7		-	150.7	2.3
9/2/2022	3:00:00 AM	35.5		1.7	146.9	2.2
9/2/2022	3:05:00 AM	35.4		-	113.7	2.3
9/2/2022	3:10:00 AM	36.9		-	119.2	2.8
9/2/2022	3:15:00 AM	36.8		-	103	1.8
9/2/2022	3:20:00 AM	34.9		-	96.6	2.9
9/2/2022	3:25:00 AM	33.1		-	63.3	3.2
9/2/2022	3:30:00 AM	34.5		-	59.1	3.3
9/2/2022	3:35:00 AM	36.6		-	46	1.1
9/2/2022	3:40:00 AM	36.7		-	42.1	1.5
9/2/2022	3:45:00 AM	37.2		-	22	0.8
9/2/2022	3:50:00 AM	41.6		-	295.8	0
9/2/2022	3:55:00 AM	47.8		-	61.7	2.4

Site: Higley						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	4:00:00 AM	51.9		1.4	337.6	0.7
9/2/2022	4:05:00 AM	53.2		-	338.4	1.5
9/2/2022	4:10:00 AM	53.8		-	342.2	0.6
9/2/2022	4:15:00 AM	55.2		-	302.7	0.7
9/2/2022	4:20:00 AM	59.6		-	33.1	2.2
9/2/2022	4:25:00 AM	62.5		-	279.1	1.2
9/2/2022	4:30:00 AM	60.4		-	346.5	0.7
9/2/2022	4:35:00 AM	57		-	31.7	3
9/2/2022	4:40:00 AM	55.5		-	28	3.1
9/2/2022	4:45:00 AM	54.6		-	28.2	2.3
9/2/2022	4:50:00 AM	54.5		-	38.2	2.2
9/2/2022	4:55:00 AM	52.5		-	29.4	2
9/2/2022	5:00:00 AM	49.3		4	37.7	2.1
9/2/2022	5:05:00 AM	54.1		-	61.5	3.3
9/2/2022	5:10:00 AM	66.2		-	70.5	4.3
9/2/2022	5:15:00 AM	79.6		-	77.7	3.4
9/2/2022	5:20:00 AM	86.5		-	78.5	3.5
9/2/2022	5:25:00 AM	98		-	72.4	4.1
9/2/2022	5:30:00 AM	106.7		-	90	5.3
9/2/2022	5:35:00 AM	114.7		-	99.4	6.2
9/2/2022	5:40:00 AM	116.7		-	99.7	6.4
9/2/2022	5:45:00 AM	113.6		-	90.3	4.3
9/2/2022	5:50:00 AM	113.7		-	96.4	3.9
9/2/2022	5:55:00 AM	111.4		-	88.7	2.8
9/2/2022	6:00:00 AM	109.1		2.6	79.9	2.2
9/2/2022	6:05:00 AM	128.5		-	117.5	1.4
9/2/2022	6:10:00 AM	134.5		-	135.5	0.9
9/2/2022	6:15:00 AM	130.3		-	153.8	1.9
9/2/2022	6:20:00 AM	126.3		-	114	2.9
9/2/2022	6:25:00 AM	131.2		-	100.9	4.1
9/2/2022	6:30:00 AM	140.9		-	110	3.6
9/2/2022	6:35:00 AM	141.1		-	132.1	3.6
9/2/2022	6:40:00 AM	143.5		-	113.5	2.6
9/2/2022	6:45:00 AM	150.8		-	107.7	2
9/2/2022	6:50:00 AM	154.8		-	149.8	3.6
9/2/2022	6:55:00 AM	149.5		-	141.3	4.7
9/2/2022	7:00:00 AM	140.2		5.3	121.4	3.4
9/2/2022	7:05:00 AM	134.5		-	121.5	3.6
9/2/2022	7:10:00 AM	141.9		-	121.2	4.5
9/2/2022	7:15:00 AM	177		-	125.6	4.2
9/2/2022	7:20:00 AM	193		-	128.2	4.8
9/2/2022	7:25:00 AM	183.4		-	131.8	5.5
9/2/2022	7:30:00 AM	170.7		-	129.4	6.2
9/2/2022	7:35:00 AM	154.7		-	127.1	6.4
9/2/2022	7:40:00 AM	133.9		-	128.8	7.1
9/2/2022	7:45:00 AM	115.3		-	134.1	6.3
9/2/2022	7:50:00 AM	104.9		-	129.3	6.7
9/2/2022	7:55:00 AM	97.8		-	128.6	5.4

Site: Higley						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	8:00:00 AM	88.3		3.7	111.8	4.8
9/2/2022	8:05:00 AM	80.6		-	99.1	5.6
9/2/2022	8:10:00 AM	80.1		-	100.4	4.7
9/2/2022	8:15:00 AM	79.6		-	116.1	4.4
9/2/2022	8:20:00 AM	74.4		-	116.5	4.5
9/2/2022	8:25:00 AM	69.8		-	129.5	3.5
9/2/2022	8:30:00 AM	74		-	133.3	2.3
9/2/2022	8:35:00 AM	75.4		-	106	3.6
9/2/2022	8:40:00 AM	73.4		-	114.2	2.5
9/2/2022	8:45:00 AM	70.7		-	108.7	3.5
9/2/2022	8:50:00 AM	73.4		-	101.3	3.6
9/2/2022	8:55:00 AM	74.4		-	110.9	2
9/2/2022	9:00:00 AM	70.3		2.7	151.1	3.7
9/2/2022	9:05:00 AM	68.9		-	154.9	1.5
9/2/2022	9:10:00 AM	74.3		-	214.5	2.1
9/2/2022	9:15:00 AM	73.2		-	152.9	3.5
9/2/2022	9:20:00 AM	65		-	194.2	1.6
9/2/2022	9:25:00 AM	60.7		-	145.4	2.7
9/2/2022	9:30:00 AM	61.1		-	145	3.1
9/2/2022	9:35:00 AM	57.2		-	170.9	1.7
9/2/2022	9:40:00 AM	51.1		-	149.1	3.4
9/2/2022	9:45:00 AM	50.6		-	109	3.3
9/2/2022	9:50:00 AM	51.5		-	110.6	4.6
9/2/2022	9:55:00 AM	46.5		-	124.6	5.7
9/2/2022	10:00:00 AM	44.1		5.7	107.5	5.4
9/2/2022	10:05:00 AM	47.3		-	120.7	5.9
9/2/2022	10:10:00 AM	47.9		-	136.5	7
9/2/2022	10:15:00 AM	45.5		-	116.3	5.8
9/2/2022	10:20:00 AM	47.7		-	108.4	5.8
9/2/2022	10:25:00 AM	55.6		-	108.5	6.6
9/2/2022	10:30:00 AM	57.8		-	146.3	5.7
9/2/2022	10:35:00 AM	56.7		-	141.5	6.3
9/2/2022	10:40:00 AM	61		-	125.5	5.1
9/2/2022	10:45:00 AM	65.9		-	129.8	6.3
9/2/2022	10:50:00 AM	64.3		-	117.5	3.7
9/2/2022	10:55:00 AM	62.1		-	139	6.4
9/2/2022	11:00:00 AM	65.3		3	167.1	4.1
9/2/2022	11:05:00 AM	65.4		-	183.1	3.6
9/2/2022	11:10:00 AM	59.4		-	194.6	4.4
9/2/2022	11:15:00 AM	56.8		-	163.4	6
9/2/2022	11:20:00 AM	59.7		-	152	4.5
9/2/2022	11:25:00 AM	59.5		-	155.5	0.8
9/2/2022	11:30:00 AM	56.3		-	163.6	4
9/2/2022	11:35:00 AM	56.6		-	126.5	5.5
9/2/2022	11:40:00 AM	61.6		-	97.6	2.1
9/2/2022	11:45:00 AM	56.9		-	150.3	2.1
9/2/2022	11:50:00 AM	51.1		-	99.6	4.1
9/2/2022	11:55:00 AM	54.3		-	96.6	0.9

Site: Higley						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	12:00:00 PM	54.2		2.3	188.6	3.7
9/2/2022	12:05:00 PM	49.1		-	234.6	4.3
9/2/2022	12:10:00 PM	47		-	164.2	3.3
9/2/2022	12:15:00 PM	47.1		-	228.6	1.1
9/2/2022	12:20:00 PM	45.2		-	200.3	2.6
9/2/2022	12:25:00 PM	40.6		-	72	3.1
9/2/2022	12:30:00 PM	44		-	160.6	5.5
9/2/2022	12:35:00 PM	49.1		-	190.6	3.8
9/2/2022	12:40:00 PM	46.6		-	214.6	3.1
9/2/2022	12:45:00 PM	43.5		-	241.3	5.6
9/2/2022	12:50:00 PM	46.2		-	291.7	5.7
9/2/2022	12:55:00 PM	46.3		-	281.9	2.4
9/2/2022	1:00:00 PM	40.3		2.2	217.7	2.8
9/2/2022	1:05:00 PM	40.9		-	173	3
9/2/2022	1:10:00 PM	44.7		-	215.6	1.3
9/2/2022	1:15:00 PM	42.2		-	167.8	3.7
9/2/2022	1:20:00 PM	39.4		-	111.2	3.7
9/2/2022	1:25:00 PM	44.4		-	230.8	1.9
9/2/2022	1:30:00 PM	47.4		-	170	3.1
9/2/2022	1:35:00 PM	44.4		-	228.3	7.2
9/2/2022	1:40:00 PM	44.4		-	263.3	6.3
9/2/2022	1:45:00 PM	48.6		-	286.1	3.8
9/2/2022	1:50:00 PM	47		-	305.7	4.1
9/2/2022	1:55:00 PM	42.1		-	282.1	2.5
9/2/2022	2:00:00 PM	42.8		3.7	225.4	2.6
9/2/2022	2:05:00 PM	47.3		-	189	3.8
9/2/2022	2:10:00 PM	46.7		-	161.3	6
9/2/2022	2:15:00 PM	45.2		-	161.1	4.9
9/2/2022	2:20:00 PM	45.9		-	204.7	5.4
9/2/2022	2:25:00 PM	45.8		-	229.8	4.9
9/2/2022	2:30:00 PM	41.7		-	170.9	3
9/2/2022	2:35:00 PM	41		-	211.2	2.6
9/2/2022	2:40:00 PM	44.1		-	203.4	3.4
9/2/2022	2:45:00 PM	42.7		-	182.3	3.9
9/2/2022	2:50:00 PM	38.8		-	194.9	3.8
9/2/2022	2:55:00 PM	42.1		-	202.3	4.4
9/2/2022	3:00:00 PM	44.8		2.6	139.9	2.2
9/2/2022	3:05:00 PM	41.7		-	179.6	4.3
9/2/2022	3:10:00 PM	40.4		-	224.8	5.9
9/2/2022	3:15:00 PM	48.7		-	246.7	1.5
9/2/2022	3:20:00 PM	64.4		-	248.7	5.6
9/2/2022	3:25:00 PM	64		-	252.4	2.1
9/2/2022	3:30:00 PM	61.3		-	236.4	7.3
9/2/2022	3:35:00 PM	58.8		-	174.8	4.5
9/2/2022	3:40:00 PM	52.4		-	209.2	2.3
9/2/2022	3:45:00 PM	44.9		-	209.9	1.9
9/2/2022	3:50:00 PM	44		-	142.3	4.5
9/2/2022	3:55:00 PM	44.6		-	83.9	4.4

Site: Higley						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	4:00:00 PM	40.6		2.9	120.2	5.4
9/2/2022	4:05:00 PM	38.8		-	88.4	6.8
9/2/2022	4:10:00 PM	39.9		-	92.5	5.5
9/2/2022	4:15:00 PM	39.8		-	54.8	4.3
9/2/2022	4:20:00 PM	34.7		-	54.7	2.8
9/2/2022	4:25:00 PM	33.6		-	90.7	2.6
9/2/2022	4:30:00 PM	34.9		-	135.1	2.7
9/2/2022	4:35:00 PM	32.6		-	149.4	5.1
9/2/2022	4:40:00 PM	29.2		-	148	4.8
9/2/2022	4:45:00 PM	31.5		-	179.4	1.8
9/2/2022	4:50:00 PM	32.1		-	267.8	0.8
9/2/2022	4:55:00 PM	27.3		-	58.3	2.5
9/2/2022	5:00:00 PM	24.6		0.9	175.6	4.4
9/2/2022	5:05:00 PM	26.7		-	211.2	3.3
9/2/2022	5:10:00 PM	27.8		-	169.3	4.2
9/2/2022	5:15:00 PM	25		-	190.2	3.6
9/2/2022	5:20:00 PM	24.9		-	238.5	3.8
9/2/2022	5:25:00 PM	28		-	232.4	1.2
9/2/2022	5:30:00 PM	27.5		-	321.7	2.1
9/2/2022	5:35:00 PM	24.7		-	351.1	4.3
9/2/2022	5:40:00 PM	26.1		-	7.7	5.1
9/2/2022	5:45:00 PM	28.6		-	349	4.7
9/2/2022	5:50:00 PM	26.2		-	359	6
9/2/2022	5:55:00 PM	24		-	23	7.2
9/2/2022	6:00:00 PM	25.8		5.5	91.3	12
9/2/2022	6:05:00 PM	26.9		-	78.3	16
9/2/2022	6:10:00 PM	24.4		-	72.9	9.5
9/2/2022	6:15:00 PM	23.9		-	98.5	21.3
9/2/2022	6:20:00 PM	26.4		-	104.4	14.6
9/2/2022	6:25:00 PM	26.6		-	110.4	8.8
9/2/2022	6:30:00 PM	24.1		-	130.5	4.5
9/2/2022	6:35:00 PM	25.1		-	233.7	0.5
9/2/2022	6:40:00 PM	28.4		-	276.5	3.7
9/2/2022	6:45:00 PM	27.8		-	257.2	3.1
9/2/2022	6:50:00 PM	25.1		-	271.7	4.1
9/2/2022	6:55:00 PM	25.5		-	285.8	5.7
9/2/2022	7:00:00 PM	28.6		4.5	291.7	7.6
9/2/2022	7:05:00 PM	27.3		-	283.2	7.2
9/2/2022	7:10:00 PM	25.2		-	284.6	10.2
9/2/2022	7:15:00 PM	26.5		-	290.8	9.8
9/2/2022	7:20:00 PM	28.5		-	289.9	11.3
9/2/2022	7:25:00 PM	27		-	286.5	10.5
9/2/2022	7:30:00 PM	24.9		-	301.3	8.3
9/2/2022	7:35:00 PM	27.4		-	350.3	2.9
9/2/2022	7:40:00 PM	29.7		-	54	10.9
9/2/2022	7:45:00 PM	28		-	59.2	9.6
9/2/2022	7:50:00 PM	25.5		-	59.7	4.7
9/2/2022	7:55:00 PM	27.2		-	58	3.6

Site: Higley						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	8:00:00 PM	31.2		5.1	98	5.9
9/2/2022	8:05:00 PM	32.1		-	84.5	7.8
9/2/2022	8:10:00 PM	32		-	68.4	8.1
9/2/2022	8:15:00 PM	35.8		-	66.5	7
9/2/2022	8:20:00 PM	39.4		-	75.9	5.1
9/2/2022	8:25:00 PM	38.1		-	99.3	5.1
9/2/2022	8:30:00 PM	36		-	86.4	3.1
9/2/2022	8:35:00 PM	40.2		-	98	3.1
9/2/2022	8:40:00 PM	46		-	116.3	5
9/2/2022	8:45:00 PM	44.1		-	120.1	5.7
9/2/2022	8:50:00 PM	40.2		-	118	5.5
9/2/2022	8:55:00 PM	40.8		-	131.1	4.8
9/2/2022	9:00:00 PM	42.4		2.9	130	4.9
9/2/2022	9:05:00 PM	40.7		-	165.8	2.6
9/2/2022	9:10:00 PM	39.8		-	190.9	2.2
9/2/2022	9:15:00 PM	43		-	164.9	0.8
9/2/2022	9:20:00 PM	48.1		-	117.1	1.6
9/2/2022	9:25:00 PM	54.5		-	108.6	3.8
9/2/2022	9:30:00 PM	93.9		-	137.4	3.2
9/2/2022	9:35:00 PM	293.3		-	158.8	2.9
9/2/2022	9:40:00 PM	1169.5		-	161.5	2.9
9/2/2022	9:45:00 PM	2894.2		-	166.4	3.5
9/2/2022	9:50:00 PM	4555		-	166.5	4.5
9/2/2022	9:55:00 PM	5125		-	158.1	5.2
9/2/2022	10:00:00 PM	4617.3		2.5	160.4	5.8
9/2/2022	10:05:00 PM	3766.2		-	167.3	5.6
9/2/2022	10:10:00 PM	2893.5		-	176.5	3.3
9/2/2022	10:15:00 PM	2135.7		-	185	4.3
9/2/2022	10:20:00 PM	1550		-	192.2	3.2
9/2/2022	10:25:00 PM	1107.5		-	158.4	1.8
9/2/2022	10:30:00 PM	786.5		-	166.4	2.2
9/2/2022	10:35:00 PM	555.4		-	187.9	2.2
9/2/2022	10:40:00 PM	388.7		-	182.2	1.6
9/2/2022	10:45:00 PM	274		-	173.7	0.8
9/2/2022	10:50:00 PM	194.5		-	297.4	0.8
9/2/2022	10:55:00 PM	142.3		-	248.8	0
9/2/2022	11:00:00 PM	115.8		2.8	103.4	1.2
9/2/2022	11:05:00 PM	106.6		-	25.8	2
9/2/2022	11:10:00 PM	99		-	49.5	3.1
9/2/2022	11:15:00 PM	77.3		-	28.5	2.1
9/2/2022	11:20:00 PM	68.8		-	25.6	2.6
9/2/2022	11:25:00 PM	50.8		-	17	2.6
9/2/2022	11:30:00 PM	33.1		-	26.2	3.1
9/2/2022	11:35:00 PM	24.1		-	7.8	2.7
9/2/2022	11:40:00 PM	22.1		-	2.8	2.9
9/2/2022	11:45:00 PM	17.4		-	26.8	4.1
9/2/2022	11:50:00 PM	10.6		-	23.8	4.5
9/2/2022	11:55:00 PM	20.4		-	16.4	4.6

Site: Higley						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
	Average	165.357			146.5253472	4.178472222
	Max	5125	0	5.7	359	21.3
	Max Hour	5125	11915.14347	0	0	8.795114208
	Min	10.6	0	0	2.8	0
	Count	288	288	288	288	288
	Total	48290.9	47330.1	1434.2	48078.3	1360

Site: Zuni Hills						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	12:00:00 AM	229	148	11.4	148.2	11.1
9/2/2022	12:05:00 AM	440.1	157.3	9.5	157.5	9.3
9/2/2022	12:10:00 AM	626	153.4	8.2	153	8.1
9/2/2022	12:15:00 AM	764.9	145.2	7	146.3	6.9
9/2/2022	12:20:00 AM	835.9	142.5	7.4	142.5	7.3
9/2/2022	12:25:00 AM	872.8	139.8	5.9	139.7	5.8
9/2/2022	12:30:00 AM	897.9	141.3	5.7	141	5.6
9/2/2022	12:35:00 AM	919.9	156.7	4.6	157.2	4.4
9/2/2022	12:40:00 AM	944.7	190.7	5.2	191.3	5
9/2/2022	12:45:00 AM	991.4	216	6.9	216.1	6.8
9/2/2022	12:50:00 AM	1243.1	178.5	4.6	177.9	4.4
9/2/2022	12:55:00 AM	1663	169.1	5	168.3	4.8
9/2/2022	1:00:00 AM	2065.1	194.2	5.6	194.5	5.5
9/2/2022	1:05:00 AM	2361	205.9	5.4	205.6	5.3
9/2/2022	1:10:00 AM	2623	211.9	6.4	211.7	6.3
9/2/2022	1:15:00 AM	2803.2	207.6	6.4	207.2	6.3
9/2/2022	1:20:00 AM	2791.9	217.7	6.9	217.2	6.8
9/2/2022	1:25:00 AM	2529.9	219.5	6.1	219.7	6
9/2/2022	1:30:00 AM	2128.7	230	7.2	230.1	7.1
9/2/2022	1:35:00 AM	1715.2	226.6	7	227	6.8
9/2/2022	1:40:00 AM	1331.9	218.1	6.8	218.8	6.8
9/2/2022	1:45:00 AM	1019	223.6	5.4	223.8	5.3
9/2/2022	1:50:00 AM	774.9	220.4	4.6	221.2	4.5
9/2/2022	1:55:00 AM	588.6	179.9	4	183.3	3.6
9/2/2022	2:00:00 AM	449.6	122	3.9	121.6	3.7
9/2/2022	2:05:00 AM	350.2	158	2.9	157.2	2.9
9/2/2022	2:10:00 AM	286.7	172.8	3	172.3	3
9/2/2022	2:15:00 AM	239.5	189.5	2.8	189.2	2.7
9/2/2022	2:20:00 AM	206.9	187.2	3.7	187.4	3.7
9/2/2022	2:25:00 AM	185.4	212.4	4.1	212.5	4.1
9/2/2022	2:30:00 AM	171.4	221.5	4.2	221.5	4.2
9/2/2022	2:35:00 AM	161.9	210	3.2	210.2	3.1
9/2/2022	2:40:00 AM	152.7	211.6	2.5	210.9	2.5
9/2/2022	2:45:00 AM	140.7	184.8	1	193.2	0.9
9/2/2022	2:50:00 AM	133.4	117.3	0.1	146.7	0
9/2/2022	2:55:00 AM	127.3	18.1	0.1	15.5	0.1
9/2/2022	3:00:00 AM	124	47.1	0.8	63	0.8
9/2/2022	3:05:00 AM	120.4	67.6	1.7	67.6	1.7
9/2/2022	3:10:00 AM	116.7	61.5	1.7	61.5	1.7
9/2/2022	3:15:00 AM	112	47.5	2	47.3	2
9/2/2022	3:20:00 AM	108.4	64.1	1.8	63.9	1.7
9/2/2022	3:25:00 AM	104.7	68.8	1.7	69.7	1.7
9/2/2022	3:30:00 AM	102	51.8	1.1	49.6	1
9/2/2022	3:35:00 AM	101	82.9	1.4	84	1.3
9/2/2022	3:40:00 AM	103.3	113.4	0.9	112.2	0.9
9/2/2022	3:45:00 AM	105.1	86.5	0.9	85.2	0.9
9/2/2022	3:50:00 AM	105.1	55.2	1	56.5	1
9/2/2022	3:55:00 AM	108.2	327.2	1.6	307.7	1.4

Site: Zuni Hills						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	4:00:00 AM	110.5	302.2	1.8	301.7	1.8
9/2/2022	4:05:00 AM	112.9	323.4	2.5	323.8	2.5
9/2/2022	4:10:00 AM	115.1	327.1	3.9	326.9	3.9
9/2/2022	4:15:00 AM	121.5	338.2	2.8	337.9	2.7
9/2/2022	4:20:00 AM	128.8	345.1	3.1	345.1	3.1
9/2/2022	4:25:00 AM	133.1	348.1	3	348.1	3
9/2/2022	4:30:00 AM	134.6	324.3	3	324.8	2.9
9/2/2022	4:35:00 AM	140.3	319.1	2.9	319.3	2.8
9/2/2022	4:40:00 AM	140.7	325	3.3	324.9	3.3
9/2/2022	4:45:00 AM	142.6	340.3	3.1	339.7	3.1
9/2/2022	4:50:00 AM	139.9	5.5	2.8	5.4	2.7
9/2/2022	4:55:00 AM	131.5	37.2	2.8	33.8	2.7
9/2/2022	5:00:00 AM	116.7	52.1	2.2	51.4	2.1
9/2/2022	5:05:00 AM	101.2	56.2	2	55.9	2
9/2/2022	5:10:00 AM	88	66.2	1.5	67.2	1.5
9/2/2022	5:15:00 AM	77.7	40	0.3	48.9	0.3
9/2/2022	5:20:00 AM	69.6	338.7	1.1	341	1.1
9/2/2022	5:25:00 AM	62.5	29.1	1.5	29	1.5
9/2/2022	5:30:00 AM	56.9	15.9	1.4	17.6	1.4
9/2/2022	5:35:00 AM	54.6	292.8	0.7	262.2	0.6
9/2/2022	5:40:00 AM	52.4	259.6	1.5	258.2	1.4
9/2/2022	5:45:00 AM	51.6	295.9	2.6	296.7	2.6
9/2/2022	5:50:00 AM	51	288	3.1	288.4	3.1
9/2/2022	5:55:00 AM	48.6	288.3	2.8	288.4	2.8
9/2/2022	6:00:00 AM	47.4	303.4	2.8	302.5	2.8
9/2/2022	6:05:00 AM	45.7	312.4	2.3	312.3	2.3
9/2/2022	6:10:00 AM	44.2	303.7	2.2	303.9	2.2
9/2/2022	6:15:00 AM	42.5	321.8	2.2	322.1	2.2
9/2/2022	6:20:00 AM	42.1	335.9	1.9	335.1	1.9
9/2/2022	6:25:00 AM	41.6	336.6	1.5	337.2	1.4
9/2/2022	6:30:00 AM	41.6	294.9	1.7	294	1.7
9/2/2022	6:35:00 AM	42.4	302.3	2	302.4	1.9
9/2/2022	6:40:00 AM	41.9	336.1	2	336.3	2
9/2/2022	6:45:00 AM	42.3	329.7	2.4	329.9	2.3
9/2/2022	6:50:00 AM	45	334.6	2.1	334.4	2.1
9/2/2022	6:55:00 AM	47.9	4.7	2.3	6.2	2.3
9/2/2022	7:00:00 AM	50.2	17.9	2.5	17.5	2.5
9/2/2022	7:05:00 AM	52.4	343.4	2.1	344.1	2
9/2/2022	7:10:00 AM	54.7	314.7	2.7	314.6	2.7
9/2/2022	7:15:00 AM	55	356.2	3.1	355.9	3.1
9/2/2022	7:20:00 AM	55	356.2	3.4	355.9	3.3
9/2/2022	7:25:00 AM	57.2	346.8	3.2	346.3	3.2
9/2/2022	7:30:00 AM	62.1	341.7	3.4	342.1	3.3
9/2/2022	7:35:00 AM	65.6	349.5	4.4	349.4	4.4
9/2/2022	7:40:00 AM	71.1	344	5	344.2	4.9
9/2/2022	7:45:00 AM	75.1	335.7	4.4	335.1	4.3
9/2/2022	7:50:00 AM	81.4	349.6	4.5	349.4	4.5
9/2/2022	7:55:00 AM	86.2	333.6	3.2	332.3	3.1

Site: Zuni Hills						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	8:00:00 AM	91.3	344.5	2.9	341.3	2.7
9/2/2022	8:05:00 AM	92.7	339.4	3.8	339.1	3.7
9/2/2022	8:10:00 AM	87.4	342.9	4.3	343.7	4.2
9/2/2022	8:15:00 AM	78.9	3.9	3.5	3.8	3.2
9/2/2022	8:20:00 AM	70.3	17.8	2.5	16.2	2.4
9/2/2022	8:25:00 AM	62.4	24.2	2.3	35	1.7
9/2/2022	8:30:00 AM	56.9	45.9	2.3	46	2.2
9/2/2022	8:35:00 AM	54.6	347.8	2	350.9	1.8
9/2/2022	8:40:00 AM	53.9	281.3	2.5	261.4	1
9/2/2022	8:45:00 AM	54.5	206.9	1.9	204.8	1.7
9/2/2022	8:50:00 AM	52.8	114.2	1.7	94.3	0.6
9/2/2022	8:55:00 AM	47	120.7	4.3	119.4	4.2
9/2/2022	9:00:00 AM	52.4	135.9	2.5	135.7	2.2
9/2/2022	9:05:00 AM	49	97.6	3.9	97.2	3.7
9/2/2022	9:10:00 AM	39.1	123.8	4.7	124.2	4.4
9/2/2022	9:15:00 AM	35.4	126.3	4.7	125.5	4.5
9/2/2022	9:20:00 AM	33.9	105.3	4.1	109.5	3.6
9/2/2022	9:25:00 AM	35.2	120.9	3.6	116.1	3.4
9/2/2022	9:30:00 AM	30.1	187.7	3.4	188	3.3
9/2/2022	9:35:00 AM	36.6	131.9	5.9	129.4	5.4
9/2/2022	9:40:00 AM	40.4	109.1	6.1	108.8	5.9
9/2/2022	9:45:00 AM	42.2	105.4	5.2	107.8	5
9/2/2022	9:50:00 AM	43.5	134.3	6.7	131.9	6.4
9/2/2022	9:55:00 AM	40.7	105.4	4.2	104.7	4
9/2/2022	10:00:00 AM	39.8	102.9	5.1	100.6	4.8
9/2/2022	10:05:00 AM	42.5	170.2	3	145.3	1.7
9/2/2022	10:10:00 AM	43.9	153.3	3.2	156.7	2.5
9/2/2022	10:15:00 AM	45	154.1	3.4	152.5	3
9/2/2022	10:20:00 AM	44.9	175	6.1	175.4	6
9/2/2022	10:25:00 AM	45.7	152.9	4.5	154.7	4.3
9/2/2022	10:30:00 AM	46.3	151.9	4.5	148.1	4
9/2/2022	10:35:00 AM	47.3	213.6	5.9	219.1	5.7
9/2/2022	10:40:00 AM	46.9	218.8	4.2	218.1	4.1
9/2/2022	10:45:00 AM	46.1	153.2	5.1	140.9	4.1
9/2/2022	10:50:00 AM	42.8	129.1	5.7	126.8	5.4
9/2/2022	10:55:00 AM	39	136.2	4.9	136.6	4.7
9/2/2022	11:00:00 AM	35.1	155.1	6.2	162.1	5.8
9/2/2022	11:05:00 AM	32.4	164.9	5.1	162.4	4.6
9/2/2022	11:10:00 AM	29.2	168.3	4.6	163.6	4.3
9/2/2022	11:15:00 AM	28.1	148.3	5.5	150.1	5.3
9/2/2022	11:20:00 AM	28.3	156.4	3.9	158.3	3
9/2/2022	11:25:00 AM	29.3	154.1	5.1	150.5	4.4
9/2/2022	11:30:00 AM	29.3	165.9	5.1	165.2	5
9/2/2022	11:35:00 AM	29.6	206.9	2.3	165.8	1.8
9/2/2022	11:40:00 AM	31	181.9	4.3	184.7	3.9
9/2/2022	11:45:00 AM	33.8	157.1	7.1	154.6	6.9
9/2/2022	11:50:00 AM	36.1	121	5.2	125.8	4.8
9/2/2022	11:55:00 AM	38.1	159.5	4.2	165.1	3.7

Site: Zuni Hills						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	12:00:00 PM	39.3	210.4	4.1	209.8	3.8
9/2/2022	12:05:00 PM	38.9	247.5	2.4	257.9	1.2
9/2/2022	12:10:00 PM	37.4	170.8	5.2	168.3	5
9/2/2022	12:15:00 PM	35.8	169.3	4.3	170.5	3.9
9/2/2022	12:20:00 PM	35.8	176.1	5	172.4	4
9/2/2022	12:25:00 PM	35.4	116.7	4.6	119.7	3.8
9/2/2022	12:30:00 PM	39.1	161.2	2.2	181.6	1.3
9/2/2022	12:35:00 PM	43.3	220.4	6	213.5	4.8
9/2/2022	12:40:00 PM	44.9	174.1	6.5	175.1	6.3
9/2/2022	12:45:00 PM	44.8	181.4	3.4	183.3	3.3
9/2/2022	12:50:00 PM	47.1	126.9	5.5	125.7	5.3
9/2/2022	12:55:00 PM	50	139.7	3.5	146.8	2.5
9/2/2022	1:00:00 PM	55.2	344	2.1	353.1	1.4
9/2/2022	1:05:00 PM	58.9	203	2.8	212.7	2.1
9/2/2022	1:10:00 PM	68.7	204.8	5	204.7	4.8
9/2/2022	1:15:00 PM	84.7	205.8	5.7	204.4	5.5
9/2/2022	1:20:00 PM	86.8	195.1	4.9	195.9	4.8
9/2/2022	1:25:00 PM	79	153.8	4.6	152.9	4.1
9/2/2022	1:30:00 PM	68.7	136.6	6.8	134.1	6.6
9/2/2022	1:35:00 PM	59.6	105.1	5.2	110.2	4.7
9/2/2022	1:40:00 PM	54.1	107.3	4.6	112.1	4.2
9/2/2022	1:45:00 PM	51.6	197.6	5.3	205.2	3.6
9/2/2022	1:50:00 PM	49.5	171.9	5.3	160.8	4
9/2/2022	1:55:00 PM	44.4	126.7	1.8	136	1.1
9/2/2022	2:00:00 PM	38.8	130	1.6	124	1.3
9/2/2022	2:05:00 PM	36	185.3	4.4	201.3	2.5
9/2/2022	2:10:00 PM	39.5	168	5.5	171.6	4.7
9/2/2022	2:15:00 PM	45.9	167.8	5.5	170.6	5.1
9/2/2022	2:20:00 PM	45.6	133.1	5.9	134.4	5.4
9/2/2022	2:25:00 PM	45.9	112.2	5.7	115.9	5.2
9/2/2022	2:30:00 PM	42.1	87.5	4.6	87.9	4.4
9/2/2022	2:35:00 PM	40.2	133.9	5.1	134.8	4.7
9/2/2022	2:40:00 PM	38.5	178.9	6.6	183.5	6.1
9/2/2022	2:45:00 PM	41.2	179.7	6.7	185	6.4
9/2/2022	2:50:00 PM	43.2	192.6	7.2	193.3	7.1
9/2/2022	2:55:00 PM	44.2	149.6	2.4	157.5	2.1
9/2/2022	3:00:00 PM	42.9	156.6	2	180.7	1.5
9/2/2022	3:05:00 PM	41.7	198.9	7.8	200.3	7.2
9/2/2022	3:10:00 PM	41.2	223.5	8.2	223.4	8.1
9/2/2022	3:15:00 PM	40.3	206	5.2	204.3	5.1
9/2/2022	3:20:00 PM	39.1	98.3	1.2	99.7	0.9
9/2/2022	3:25:00 PM	38.3	211.6	7.1	216.7	6.6
9/2/2022	3:30:00 PM	40.1	198.4	4.5	196.9	4.2
9/2/2022	3:35:00 PM	39.2	199.1	4	214.1	3.4
9/2/2022	3:40:00 PM	38.4	195.9	7.6	196.8	7.3
9/2/2022	3:45:00 PM	37	197.8	8.9	197.9	8.8
9/2/2022	3:50:00 PM	37.5	153.2	6.2	156.5	5.5
9/2/2022	3:55:00 PM	38.2	133.5	2.8	178.1	1.6

Site: Zuni Hills						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	4:00:00 PM	38.2	236.2	5.3	237.4	5
9/2/2022	4:05:00 PM	41.2	162.3	5.8	161.7	5.3
9/2/2022	4:10:00 PM	42.5	173.9	8.9	173.9	8.7
9/2/2022	4:15:00 PM	41.5	158	7.9	157.5	7.8
9/2/2022	4:20:00 PM	41.1	168.1	7.7	170.3	7.2
9/2/2022	4:25:00 PM	40.2	180	7.3	180.6	7.2
9/2/2022	4:30:00 PM	39.1	162.4	5.6	160.9	5.2
9/2/2022	4:35:00 PM	39.5	144.5	5.5	147.9	5
9/2/2022	4:40:00 PM	39.1	137.9	9.1	138.1	8.5
9/2/2022	4:45:00 PM	40.9	118.7	7.5	121.3	7.2
9/2/2022	4:50:00 PM	44.7	130.6	8	132.3	7.5
9/2/2022	4:55:00 PM	50.3	161.3	4.4	166.3	4.3
9/2/2022	5:00:00 PM	50.3	134.7	7.8	135	7.6
9/2/2022	5:05:00 PM	47.4	155.4	5.3	148.7	4.8
9/2/2022	5:10:00 PM	43.6	166.6	5.6	156.9	5
9/2/2022	5:15:00 PM	42.6	157.2	4.4	156.6	4.1
9/2/2022	5:20:00 PM	45.2	217.9	4.6	213.1	4.4
9/2/2022	5:25:00 PM	46.3	166.9	3.6	164.3	3.1
9/2/2022	5:30:00 PM	41.7	177.3	2.9	176.4	2.8
9/2/2022	5:35:00 PM	35.9	328.3	1.5	333.8	1.2
9/2/2022	5:40:00 PM	37.6	295.2	0.3	299.7	0.1
9/2/2022	5:45:00 PM	38.6	192.2	1	191.5	0.9
9/2/2022	5:50:00 PM	41.2	47.3	0.5	344.1	0.4
9/2/2022	5:55:00 PM	42.1	352.1	2.4	352.6	2.3
9/2/2022	6:00:00 PM	41.5	9.3	3.7	5.9	3.3
9/2/2022	6:05:00 PM	42.9	335	6.6	336.6	6.4
9/2/2022	6:10:00 PM	41.9	340.7	7.1	340.4	6.9
9/2/2022	6:15:00 PM	47.7	351.5	8.4	350.9	8.2
9/2/2022	6:20:00 PM	52.5	4.2	8.5	5.1	8.2
9/2/2022	6:25:00 PM	52.8	2.3	10	2.5	9.6
9/2/2022	6:30:00 PM	55.9	355.8	11.8	355.1	11.5
9/2/2022	6:35:00 PM	59.4	351.2	11.4	351.1	11.1
9/2/2022	6:40:00 PM	61.5	353.5	14.4	352.9	14
9/2/2022	6:45:00 PM	61.7	355.6	10.7	355.6	10.4
9/2/2022	6:50:00 PM	56.2	356.6	10.8	356.7	10.5
9/2/2022	6:55:00 PM	47.4	356.3	9.5	356	9.3
9/2/2022	7:00:00 PM	36.5	357.4	9.7	357.6	9.3
9/2/2022	7:05:00 PM	19.8	4.9	10.4	6.1	10
9/2/2022	7:10:00 PM	17	1.3	12.2	0.3	11.8
9/2/2022	7:15:00 PM	24.8	357.8	10.6	357.6	10.4
9/2/2022	7:20:00 PM	29.1	356.2	10.4	355.8	10.1
9/2/2022	7:25:00 PM	28.3	10.4	13.3	12.2	12.9
9/2/2022	7:30:00 PM	43.8	17.7	17.5	18	17.2
9/2/2022	7:35:00 PM	81.9	12.7	15.7	13	15.4
9/2/2022	7:40:00 PM	96.9	12.3	12.9	12.5	12.6
9/2/2022	7:45:00 PM	90.8	8.5	12.3	9.1	12.1
9/2/2022	7:50:00 PM	91	334.2	12.3	334.3	12.2
9/2/2022	7:55:00 PM	92.4	2.8	8.3	2.4	7.8

Site: Zuni Hills						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	8:00:00 PM	80.1	34.3	6.3	29.7	6.1
9/2/2022	8:05:00 PM	66.1	48.6	4.2	45.4	4
9/2/2022	8:10:00 PM	53.5	71.9	3.8	71.5	3.7
9/2/2022	8:15:00 PM	42.4	68.4	5.2	68.1	5.1
9/2/2022	8:20:00 PM	33.9	56.3	6.1	56	5.9
9/2/2022	8:25:00 PM	25.5	40.9	7.6	38.7	7.3
9/2/2022	8:30:00 PM	16.9	30.2	8.3	30	8.1
9/2/2022	8:35:00 PM	11.5	33.8	5.4	33.1	5.2
9/2/2022	8:40:00 PM	9.3	43.6	3.2	42.4	3
9/2/2022	8:45:00 PM	7.1	50	4	47.6	3.8
9/2/2022	8:50:00 PM	6.5	41.7	3.9	40.8	3.7
9/2/2022	8:55:00 PM	7.8	34.1	2.8	29.6	2.7
9/2/2022	9:00:00 PM	7.8	24.2	5.9	23.4	5.7
9/2/2022	9:05:00 PM	7.7	27	3.4	26.9	3.3
9/2/2022	9:10:00 PM	7.4	334.3	0.8	349.2	0.7
9/2/2022	9:15:00 PM	7.7	17.3	5.4	18.4	5.3
9/2/2022	9:20:00 PM	8.4	29.6	9.6	30	9.4
9/2/2022	9:25:00 PM	10.5	34.6	10.7	33.6	10.4
9/2/2022	9:30:00 PM	15.4	40.8	9.3	38	9
9/2/2022	9:35:00 PM	18.7	53.7	5.9	52.5	5.5
9/2/2022	9:40:00 PM	17.8	53	7.5	51.2	7.2
9/2/2022	9:45:00 PM	16.3	47.7	6.5	45.2	6.2
9/2/2022	9:50:00 PM	15.2	35	9.6	34.6	9.4
9/2/2022	9:55:00 PM	13.8	34.2	10.7	33.3	10.5
9/2/2022	10:00:00 PM	14.1	43.6	6.6	41.6	6.3
9/2/2022	10:05:00 PM	14.8	40.7	6.9	39	6.7
9/2/2022	10:10:00 PM	14.6	36.8	7.8	36.2	7.5
9/2/2022	10:15:00 PM	15.1	29.5	10.3	29	10.1
9/2/2022	10:20:00 PM	15.3	23.9	10.3	23.9	10.1
9/2/2022	10:25:00 PM	14.6	18.4	10.6	18.5	10.5
9/2/2022	10:30:00 PM	13.7	20.1	9.2	20.2	9.1
9/2/2022	10:35:00 PM	12.3	17.4	9.7	17.4	9.5
9/2/2022	10:40:00 PM	13	13.4	9.4	13.5	9.2
9/2/2022	10:45:00 PM	13.7	10.7	8.8	10.9	8.6
9/2/2022	10:50:00 PM	13.3	13.8	6.8	13.8	6.7
9/2/2022	10:55:00 PM	13.1	19.9	7.2	19.9	7.1
9/2/2022	11:00:00 PM	12.3	19.3	6.9	20	6.8
9/2/2022	11:05:00 PM	11	12.4	5.5	13	5.3
9/2/2022	11:10:00 PM	10.7	9.6	4.9	10.7	4.7
9/2/2022	11:15:00 PM	10.6	356	3.4	355.2	3.3
9/2/2022	11:20:00 PM	11.5	0.3	4.1	359.3	4
9/2/2022	11:25:00 PM	13.2	5.4	3.5	5	3.5
9/2/2022	11:30:00 PM	14.4	29.2	3.3	27.1	3.1
9/2/2022	11:35:00 PM	14.8	54.9	3.1	54.2	3
9/2/2022	11:40:00 PM	15.1	86.9	3.1	85.5	2.9
9/2/2022	11:45:00 PM	17.1	66.9	1.5	67.8	1.4
9/2/2022	11:50:00 PM	16.3	60.2	1.5	63.1	1.4
9/2/2022	11:55:00 PM	14.2	84.7	1.3	101.2	0.8

Site: Zuni Hills						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
	Average	167.6	86	4.9	70.5	0.8
	Max	2803.2	357.8	17.5	359.3	17.2
	Max Hour	188001	11915.14347	8.902728901	11995.71213	8.795114208
	Min	6.5	0.3	0.1	0.3	0
	Count	288	288	288	288	288
	Total	48290.9	47330.1	1434.2	48078.3	1360

Site: Dysart						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	12:00:00 AM	799.8	148.7	8.1	148.4	7.9
9/2/2022	12:05:00 AM	1878.1	152.8	8.4	152.5	8.2
9/2/2022	12:10:00 AM	2642.1	150.1	8	149.7	7.8
9/2/2022	12:15:00 AM	3198.5	150.5	6.4	150.5	6.3
9/2/2022	12:20:00 AM	3617.6	140.2	6.6	140.4	6.4
9/2/2022	12:25:00 AM	3889.3	154.8	5.8	155.7	5.7
9/2/2022	12:30:00 AM	3996.9	177.2	6.4	177.2	6.1
9/2/2022	12:35:00 AM	3892	194.6	5.4	193.3	5.3
9/2/2022	12:40:00 AM	3517.9	189.3	6.3	188.9	6.1
9/2/2022	12:45:00 AM	2963	182.5	6	183.1	5.8
9/2/2022	12:50:00 AM	2405.5	178.7	5.3	182.2	5.1
9/2/2022	12:55:00 AM	1947.8	193.4	4.4	195.5	4
9/2/2022	1:00:00 AM	1635.8	200.8	4.2	202.8	3.9
9/2/2022	1:05:00 AM	1387.7	183.3	5.9	184.6	5.8
9/2/2022	1:10:00 AM	1146.3	179.9	5.5	179.7	5.3
9/2/2022	1:15:00 AM	929	171.9	6.6	172.6	6.4
9/2/2022	1:20:00 AM	744.3	180.5	8	180.6	7.8
9/2/2022	1:25:00 AM	586.5	174.8	7.5	175.3	7.3
9/2/2022	1:30:00 AM	463.3	188.8	7.1	188.8	7
9/2/2022	1:35:00 AM	372	193.5	6.1	193	6
9/2/2022	1:40:00 AM	293.4	192.7	5.3	192.8	5.2
9/2/2022	1:45:00 AM	233.6	205	5.1	205.6	5
9/2/2022	1:50:00 AM	201.1	200.3	4.4	200	4.3
9/2/2022	1:55:00 AM	171.8	186.9	4.1	188.6	3.9
9/2/2022	2:00:00 AM	146.6	192.8	4.9	193.3	4.8
9/2/2022	2:05:00 AM	136.4	188.1	5	188	4.9
9/2/2022	2:10:00 AM	124.2	144.8	4.9	142.5	4.6
9/2/2022	2:15:00 AM	111.8	130.5	4.6	130.5	4.6
9/2/2022	2:20:00 AM	112.6	114.1	4.5	114.8	4.3
9/2/2022	2:25:00 AM	111.2	113	4.2	113.3	4.1
9/2/2022	2:30:00 AM	103.8	115.4	3.2	115.6	3.2
9/2/2022	2:35:00 AM	105.5	102	2.6	103.3	2.5
9/2/2022	2:40:00 AM	108.3	80.9	2.5	80.7	2.3
9/2/2022	2:45:00 AM	105.5	60.2	3.7	60	3.6
9/2/2022	2:50:00 AM	113.4	63.8	3.4	63.3	3.3
9/2/2022	2:55:00 AM	124.6	63.8	4.3	63.8	4.2
9/2/2022	3:00:00 AM	126.3	63.1	3.6	63.2	3.6
9/2/2022	3:05:00 AM	124.6	60.4	2.6	60.5	2.5
9/2/2022	3:10:00 AM	130.6	62.8	1.7	61.5	1.6
9/2/2022	3:15:00 AM	128.2	63.1	2.3	63.9	2.2
9/2/2022	3:20:00 AM	119.3	69.5	2.1	69	2.1
9/2/2022	3:25:00 AM	116.9	121.6	1.8	126	1.5
9/2/2022	3:30:00 AM	114.4	162.7	2.7	162.6	2.6
9/2/2022	3:35:00 AM	105	135.3	1.6	140	1.5
9/2/2022	3:40:00 AM	95.6	50	0.3	63.7	0.3
9/2/2022	3:45:00 AM	91.8	21.1	0.4	11.2	0.3
9/2/2022	3:50:00 AM	79.8	40.5	0.7	33.9	0.6
9/2/2022	3:55:00 AM	67.5	30.9	0.3	29.5	0.3

Site: Dysart						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	4:00:00 AM	67.3	345.3	0.6	344.2	0.6
9/2/2022	4:05:00 AM	67.4	328.1	1.4	328.7	1.4
9/2/2022	4:10:00 AM	66.9	357	1.3	0.6	1.1
9/2/2022	4:15:00 AM	72.9	3.1	2.5	2.6	2.4
9/2/2022	4:20:00 AM	76.3	17.5	1.3	18.5	1.2
9/2/2022	4:25:00 AM	70.9	11.5	1.3	10	1.2
9/2/2022	4:30:00 AM	69.1	326.2	1.7	320.8	1.6
9/2/2022	4:35:00 AM	76.1	294.2	1.4	293.7	1.4
9/2/2022	4:40:00 AM	76.4	307.2	1.1	307	1.1
9/2/2022	4:45:00 AM	77.7	309.7	2.5	310	2.5
9/2/2022	4:50:00 AM	86.8	311.9	2.9	311.8	2.8
9/2/2022	4:55:00 AM	90	307.4	2.7	307.9	2.7
9/2/2022	5:00:00 AM	92.5	235	1.3	232.7	0.9
9/2/2022	5:05:00 AM	101.9	165.8	3.3	165.8	3.2
9/2/2022	5:10:00 AM	100.4	205	1	192.1	0.9
9/2/2022	5:15:00 AM	95.5	261.9	1.9	261.8	1.9
9/2/2022	5:20:00 AM	100.3	275.7	2.8	275.9	2.7
9/2/2022	5:25:00 AM	100.4	275.5	1.9	275.6	1.9
9/2/2022	5:30:00 AM	98	254.9	1.2	262.1	1.1
9/2/2022	5:35:00 AM	102.1	228	1.4	227.9	1.4
9/2/2022	5:40:00 AM	108.6	232.9	0.9	233.6	0.9
9/2/2022	5:45:00 AM	106.5	266.7	0.9	265.6	0.8
9/2/2022	5:50:00 AM	106.1	278.9	1.8	278.8	1.8
9/2/2022	5:55:00 AM	113.5	302.7	0.8	301.6	0.7
9/2/2022	6:00:00 AM	113.4	327.4	2.1	327.9	2.1
9/2/2022	6:05:00 AM	116.3	325.9	2.5	326	2.5
9/2/2022	6:10:00 AM	130.2	328.2	3	328.3	3
9/2/2022	6:15:00 AM	133.8	314.6	3.2	314.6	3.1
9/2/2022	6:20:00 AM	138.4	302.5	2.7	304	2.7
9/2/2022	6:25:00 AM	147.5	310.4	3.3	310.1	3.3
9/2/2022	6:30:00 AM	159.7	310.9	2.6	310.4	2.5
9/2/2022	6:35:00 AM	162.8	325.4	2.2	325.4	2.1
9/2/2022	6:40:00 AM	160.9	334.3	2	338.1	1.9
9/2/2022	6:45:00 AM	166.4	335.7	1.5	333.5	1.4
9/2/2022	6:50:00 AM	160.3	322	1.3	323.2	1.2
9/2/2022	6:55:00 AM	145.3	330.1	2.2	331.1	2.2
9/2/2022	7:00:00 AM	138.1	324.2	2.1	325.3	2
9/2/2022	7:05:00 AM	129	303.4	1.9	304	1.8
9/2/2022	7:10:00 AM	117.8	313.1	1.7	316.5	1.6
9/2/2022	7:15:00 AM	119.5	310.3	1.9	311.3	1.8
9/2/2022	7:20:00 AM	118	297.8	2.4	296.1	2.3
9/2/2022	7:25:00 AM	110.5	302.7	3.6	302.8	3.6
9/2/2022	7:30:00 AM	112.6	301.8	4.9	301.4	4.8
9/2/2022	7:35:00 AM	114.3	304.8	4.4	304.2	4.3
9/2/2022	7:40:00 AM	107.9	301.8	4.6	301.2	4.5
9/2/2022	7:45:00 AM	108.2	296.7	5.4	297	5.4
9/2/2022	7:50:00 AM	105.8	298.5	5.4	298.6	5.3
9/2/2022	7:55:00 AM	95.2	318	5	318.4	5

Site: Dysart						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	8:00:00 AM	88.1	321.9	5.4	321.8	5.3
9/2/2022	8:05:00 AM	92.9	309	4.9	309.1	4.8
9/2/2022	8:10:00 AM	87.7	339.5	3.7	335.5	3.5
9/2/2022	8:15:00 AM	86.3	346.1	3.7	344.3	3.4
9/2/2022	8:20:00 AM	87.7	330.4	4.1	332.9	3.8
9/2/2022	8:25:00 AM	85.7	358.2	2.5	342.1	2.3
9/2/2022	8:30:00 AM	93.2	335.1	2.4	337.4	2.1
9/2/2022	8:35:00 AM	95.9	1.8	2.8	9.5	2.4
9/2/2022	8:40:00 AM	88.2	350.1	2.3	348.6	2.2
9/2/2022	8:45:00 AM	86.7	270.1	1.4	268.5	1.2
9/2/2022	8:50:00 AM	88.8	19.2	1	27.1	0.8
9/2/2022	8:55:00 AM	80.5	91.5	1.3	37	0.7
9/2/2022	9:00:00 AM	77.4	19.4	2.1	19.3	1.8
9/2/2022	9:05:00 AM	80.2	12.9	2.2	12.5	2
9/2/2022	9:10:00 AM	73.8	355.8	1.8	4.1	1.6
9/2/2022	9:15:00 AM	74.7	132.8	2	162.5	1.8
9/2/2022	9:20:00 AM	77.5	171	4.6	173	4.5
9/2/2022	9:25:00 AM	71.9	179.5	2.9	177.6	2.8
9/2/2022	9:30:00 AM	72.4	122.6	1.9	131.4	1.7
9/2/2022	9:35:00 AM	66.9	267.4	1.5	193.1	0.5
9/2/2022	9:40:00 AM	57.6	205.8	2.7	188.7	2.4
9/2/2022	9:45:00 AM	61.4	125.7	3.4	129	3.2
9/2/2022	9:50:00 AM	59.2	195.7	2.5	174.3	1.8
9/2/2022	9:55:00 AM	53.9	185.6	2.3	171	1.8
9/2/2022	10:00:00 AM	61.6	211.1	3.6	198.7	3.1
9/2/2022	10:05:00 AM	65.7	136.1	5.3	132	5.2
9/2/2022	10:10:00 AM	72.5	115.1	3.3	110	3
9/2/2022	10:15:00 AM	74.1	93.9	4.5	88.2	3.8
9/2/2022	10:20:00 AM	64.1	98.6	2.8	86.1	2.3
9/2/2022	10:25:00 AM	62.4	131.2	3.5	122.2	2.9
9/2/2022	10:30:00 AM	61	106.6	4.5	108.6	4.2
9/2/2022	10:35:00 AM	52.9	110.2	4.2	104.5	3.3
9/2/2022	10:40:00 AM	56.8	150.7	6.3	143.6	5.5
9/2/2022	10:45:00 AM	60	157.8	4.6	159.8	4.2
9/2/2022	10:50:00 AM	57.3	126.8	5.1	132.5	4.7
9/2/2022	10:55:00 AM	62.7	116.4	4.2	118.9	3.9
9/2/2022	11:00:00 AM	56.3	98	3.7	99.2	3.2
9/2/2022	11:05:00 AM	51.5	181	3.8	183.5	2.7
9/2/2022	11:10:00 AM	57.2	171.4	4.7	174.8	4.2
9/2/2022	11:15:00 AM	54.8	171.3	5.4	172.1	5.1
9/2/2022	11:20:00 AM	57	140.1	3.6	137.5	3.1
9/2/2022	11:25:00 AM	58.1	148.7	2.3	170.6	2
9/2/2022	11:30:00 AM	51.3	214.1	2.8	190.9	1.8
9/2/2022	11:35:00 AM	53.2	172.3	5.3	166.7	4.9
9/2/2022	11:40:00 AM	57.8	217.1	4.6	208.9	4
9/2/2022	11:45:00 AM	52.9	164	3.3	152.9	2.6
9/2/2022	11:50:00 AM	57.5	210.7	4.2	206.1	3.8
9/2/2022	11:55:00 AM	58.5	201.2	3.3	224.6	2.8

Site: Dysart						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	12:00:00 PM	54.9	270.7	2.1	259.2	1.5
9/2/2022	12:05:00 PM	61.2	312.8	3.2	316.9	2.5
9/2/2022	12:10:00 PM	58.1	167.6	2.1	166.7	1.6
9/2/2022	12:15:00 PM	52.6	158.2	4.8	160.7	3.7
9/2/2022	12:20:00 PM	57.8	144.7	4.2	145.5	4
9/2/2022	12:25:00 PM	54.8	147.7	5.2	147.2	4.8
9/2/2022	12:30:00 PM	56.1	195.6	4.4	189.2	3.8
9/2/2022	12:35:00 PM	57.1	264.3	2.1	253.8	1.7
9/2/2022	12:40:00 PM	48.3	250.2	3.8	245.2	3.1
9/2/2022	12:45:00 PM	53.1	239.4	5.1	243.1	4.5
9/2/2022	12:50:00 PM	53.9	268.5	4.5	271.2	4.3
9/2/2022	12:55:00 PM	47.3	301.6	6.2	300.4	5.9
9/2/2022	1:00:00 PM	55.8	273.4	3.7	286.1	3.3
9/2/2022	1:05:00 PM	58.5	280.5	2.3	287.8	1.7
9/2/2022	1:10:00 PM	51.9	295.8	3.1	303.7	2.4
9/2/2022	1:15:00 PM	56.6	283.6	5.4	283.3	5.2
9/2/2022	1:20:00 PM	54.2	299	4.7	299.1	4.6
9/2/2022	1:25:00 PM	47.4	307.4	4.8	309.4	4.2
9/2/2022	1:30:00 PM	53.2	335.7	4.1	337.9	3.9
9/2/2022	1:35:00 PM	54.8	316.4	3.2	318.4	3
9/2/2022	1:40:00 PM	50.8	255.6	4.1	254.6	3.8
9/2/2022	1:45:00 PM	57.8	248	4.4	249.9	3.9
9/2/2022	1:50:00 PM	53.7	293.7	4.1	278.6	3.4
9/2/2022	1:55:00 PM	50.8	329.2	5.2	328.9	5
9/2/2022	2:00:00 PM	56.1	285.5	5.4	285.8	4.8
9/2/2022	2:05:00 PM	50.3	290.3	3	279.3	2.6
9/2/2022	2:10:00 PM	47.4	262.4	3.2	263.4	2.7
9/2/2022	2:15:00 PM	49.6	299	5.9	295.3	5.4
9/2/2022	2:20:00 PM	42.4	312.1	3.1	317.1	2.8
9/2/2022	2:25:00 PM	42.2	36.9	3	34.9	2.7
9/2/2022	2:30:00 PM	46.1	351.3	4.5	340.3	3.2
9/2/2022	2:35:00 PM	39.1	348.4	6.4	347.7	6.2
9/2/2022	2:40:00 PM	35.7	298.5	3.3	310.6	2.3
9/2/2022	2:45:00 PM	46.4	165.1	4.9	161.6	4.6
9/2/2022	2:50:00 PM	44.9	202.4	5.8	200.3	4.9
9/2/2022	2:55:00 PM	42.2	283	5.8	279.8	5.5
9/2/2022	3:00:00 PM	46.7	305.2	4.7	299.2	4.2
9/2/2022	3:05:00 PM	40	319.9	3.2	311.3	2.6
9/2/2022	3:10:00 PM	36.1	310.9	2.7	314.6	2.4
9/2/2022	3:15:00 PM	42.2	248.1	4.4	243.7	3.8
9/2/2022	3:20:00 PM	37.7	214.4	3.1	206.4	1.8
9/2/2022	3:25:00 PM	36.7	162.8	4.4	165.1	4.1
9/2/2022	3:30:00 PM	47.1	182.4	7	181.7	6.7
9/2/2022	3:35:00 PM	44.9	245.9	3.7	246.2	3.3
9/2/2022	3:40:00 PM	44.4	180	5.6	179.7	5.3
9/2/2022	3:45:00 PM	49	181.7	4.7	187.7	4.4
9/2/2022	3:50:00 PM	42.2	171.2	4.5	175.2	4
9/2/2022	3:55:00 PM	43.7	163.1	5.5	161.1	5.1

Site: Dysart						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	4:00:00 PM	51.1	157.4	6.1	156.9	5.9
9/2/2022	4:05:00 PM	45.7	174.6	7.5	176.3	7
9/2/2022	4:10:00 PM	50	152.2	5.4	150.5	5.2
9/2/2022	4:15:00 PM	58.1	149.2	6.3	148.6	6
9/2/2022	4:20:00 PM	53.9	171	5.2	171.8	4.9
9/2/2022	4:25:00 PM	57.4	207.6	5.1	208.6	4.6
9/2/2022	4:30:00 PM	56.6	183.5	7.5	183.2	7.2
9/2/2022	4:35:00 PM	48.7	168.1	8.1	170	7.9
9/2/2022	4:40:00 PM	54.2	184.5	7.7	184.9	7.5
9/2/2022	4:45:00 PM	51.3	156	5.7	152.6	5.5
9/2/2022	4:50:00 PM	44.4	146.8	6.3	143.4	6.1
9/2/2022	4:55:00 PM	47.3	154.7	6.3	150.4	5.8
9/2/2022	5:00:00 PM	40.5	149.2	6.1	149.8	5.8
9/2/2022	5:05:00 PM	37	163.5	3.2	157	2.8
9/2/2022	5:10:00 PM	42.1	115.8	4	114.1	3.8
9/2/2022	5:15:00 PM	36.4	114.7	3.8	116.8	3.6
9/2/2022	5:20:00 PM	33.5	57.8	1.3	80.9	0.9
9/2/2022	5:25:00 PM	35.5	176	4.6	176	4.4
9/2/2022	5:30:00 PM	29.5	173.3	5.7	172.5	5.6
9/2/2022	5:35:00 PM	32.2	129.4	4.3	131.5	3.9
9/2/2022	5:40:00 PM	35.6	93.9	2.8	94.4	2.7
9/2/2022	5:45:00 PM	27.9	84.3	2.8	82.7	2.7
9/2/2022	5:50:00 PM	33.2	61.1	3.9	58.5	3.7
9/2/2022	5:55:00 PM	36.2	45.3	2.2	30	1.3
9/2/2022	6:00:00 PM	27.8	289.9	2	293.7	1.8
9/2/2022	6:05:00 PM	31.6	6.7	3.1	30.5	2.8
9/2/2022	6:10:00 PM	34.7	9.1	3.1	8.2	3
9/2/2022	6:15:00 PM	28.7	312.6	2.8	307.8	2.5
9/2/2022	6:20:00 PM	34	332.2	6.5	332.9	6.4
9/2/2022	6:25:00 PM	35.8	358	7.6	357.5	7.3
9/2/2022	6:30:00 PM	33.3	2.6	6.8	3.3	6.5
9/2/2022	6:35:00 PM	44.5	354.9	9.3	354.7	9
9/2/2022	6:40:00 PM	53.8	352.3	11.4	352.3	11.1
9/2/2022	6:45:00 PM	66.5	354.1	12.1	353.5	11.8
9/2/2022	6:50:00 PM	78.8	357.6	11.2	356.5	10.8
9/2/2022	6:55:00 PM	72.1	351.2	10.4	350.7	10.2
9/2/2022	7:00:00 PM	61.5	354.1	8.7	353.9	8.5
9/2/2022	7:05:00 PM	55.3	356.9	8.8	356.9	8.5
9/2/2022	7:10:00 PM	39.5	358.8	8.9	359.2	8.7
9/2/2022	7:15:00 PM	30.4	356.3	7.8	356	7.5
9/2/2022	7:20:00 PM	24.9	5.1	9.6	4.9	9.2
9/2/2022	7:25:00 PM	11.4	348.9	8.2	348	7.9
9/2/2022	7:30:00 PM	8.3	7.3	9.7	7.3	9.4
9/2/2022	7:35:00 PM	12.2	17	12.2	17.2	11.9
9/2/2022	7:40:00 PM	14.7	29.5	12.5	30	12.2
9/2/2022	7:45:00 PM	29.1	10.8	10.5	11.9	10
9/2/2022	7:50:00 PM	54.4	353.1	9.4	353.6	9
9/2/2022	7:55:00 PM	54.2	328.5	9	328.8	8.7

Site: Dysart						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
9/2/2022	8:00:00 PM	49.1	303.4	7.9	303.8	7.8
9/2/2022	8:05:00 PM	45.6	345.1	3.9	340.2	3.4
9/2/2022	8:10:00 PM	35.8	48.7	5.6	51.9	5.4
9/2/2022	8:15:00 PM	32	68.3	5.2	65.2	5.1
9/2/2022	8:20:00 PM	44.2	80.4	3.8	76.8	3.7
9/2/2022	8:25:00 PM	43.4	84.2	2.9	81.9	2.7
9/2/2022	8:30:00 PM	39.9	77.2	3.9	73.6	3.5
9/2/2022	8:35:00 PM	41.4	32.7	2.5	39.9	2.2
9/2/2022	8:40:00 PM	36.7	47.8	4.9	47	4.8
9/2/2022	8:45:00 PM	31.7	46.5	6	45.8	5.9
9/2/2022	8:50:00 PM	32.6	19.7	4.5	21.3	4.4
9/2/2022	8:55:00 PM	25.7	347.4	4.3	347.2	4.2
9/2/2022	9:00:00 PM	19.2	9.1	4.6	10.4	4.5
9/2/2022	9:05:00 PM	20.2	16.6	7.4	16.6	7.3
9/2/2022	9:10:00 PM	13.2	13.1	7.9	13.6	7.8
9/2/2022	9:15:00 PM	5.5	0.9	4.7	2.1	4.5
9/2/2022	9:20:00 PM	11.6	36	2.7	34.4	2.4
9/2/2022	9:25:00 PM	13.4	48.8	2.7	44.5	2.5
9/2/2022	9:30:00 PM	9.4	80.6	2.3	79.6	2.2
9/2/2022	9:35:00 PM	13.8	59.2	4.9	58.9	4.7
9/2/2022	9:40:00 PM	14	31.4	6.4	32.2	6.2
9/2/2022	9:45:00 PM	9.8	32.3	6.7	34.2	6.5
9/2/2022	9:50:00 PM	13.9	48.9	5.8	48.5	5.7
9/2/2022	9:55:00 PM	20.1	60.5	4.9	58.9	4.8
9/2/2022	10:00:00 PM	16.2	53	5.2	51.2	5
9/2/2022	10:05:00 PM	15	25	5.6	26.1	5.4
9/2/2022	10:10:00 PM	19	25.4	6.4	25.9	6.1
9/2/2022	10:15:00 PM	15	29	6.4	29.6	6.2
9/2/2022	10:20:00 PM	10.2	26.1	6.5	26.5	6.3
9/2/2022	10:25:00 PM	14.9	21.5	5.5	20.9	5.4
9/2/2022	10:30:00 PM	17.9	18.4	4.6	18.5	4.5
9/2/2022	10:35:00 PM	13.9	9.4	4.8	10.8	4.6
9/2/2022	10:40:00 PM	20	352.2	4.9	351.8	4.7
9/2/2022	10:45:00 PM	22.8	4.5	5.6	3.5	5.4
9/2/2022	10:50:00 PM	18.7	10	5	11.7	4.8
9/2/2022	10:55:00 PM	19.8	2.9	4.9	2.6	4.8
9/2/2022	11:00:00 PM	21.4	1.7	4.6	1.6	4.5
9/2/2022	11:05:00 PM	17.7	356.5	4.4	356.2	4.3
9/2/2022	11:10:00 PM	22.7	12.5	2.6	13	2.5
9/2/2022	11:15:00 PM	24.6	340	0.9	326.8	0.8
9/2/2022	11:20:00 PM	19.5	305.4	1.7	305.8	1.6
9/2/2022	11:25:00 PM	19.7	293.7	2	291	2
9/2/2022	11:30:00 PM	21.4	259.2	1.4	257.8	1.4
9/2/2022	11:35:00 PM	17	237.4	2.9	236.4	2.8
9/2/2022	11:40:00 PM	18.6	263.3	2.4	263.4	2.3
9/2/2022	11:45:00 PM	18.3	242.3	1.8	247.1	1.6
9/2/2022	11:50:00 PM	12.8	212.3	1.7	202.6	1.6
9/2/2022	11:55:00 PM	16.3	235.2	0.9	236	0.8

Site: Dysart						
Date	Time	PM_{10} ($\mu g/m_3$)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
	Average	206.7	329	4.2	8.5	0.3
	Max	3996.9	358.8	12.5	359.2	12.2
	Max Hour	379001	12424.33415	5.303559693	12404.69484	5.237909287
	Min	5.5	0.9	0.3	0.6	0.3
	Count	288	288	288	288	288
	Total	59543.7	54968.9	1228.1	54018.6	1153.7
	Date Printed:		9/30/2024 11:13			

Site: West 43rd Avenue						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	12:00:00 AM	51.2	255.5	3.1	255.7	3.1
7/21/2023	12:05:00 AM	52.3	258.6	2.2	258.1	2.2
7/21/2023	12:10:00 AM	52.1	287	1.1	285.8	1.1
7/21/2023	12:15:00 AM	51.1	287.6	1.1	287.5	1.1
7/21/2023	12:20:00 AM	50.4	255.8	1.3	256.3	1.2
7/21/2023	12:25:00 AM	45	259.5	1.6	260	1.6
7/21/2023	12:30:00 AM	40.4	252.6	1.5	250.6	1.5
7/21/2023	12:35:00 AM	42.1	301.5	0	305.1	0.6
7/21/2023	12:40:00 AM	41.1	325.8	1.8	326.6	1.8
7/21/2023	12:45:00 AM	40	7.9	2	8.3	1.9
7/21/2023	12:50:00 AM	40.4	11.2	1.7	12.5	1.6
7/21/2023	12:55:00 AM	44.1	334	1.7	334.3	1.7
7/21/2023	1:00:00 AM	47.6	343.3	2.4	343.3	2.4
7/21/2023	1:05:00 AM	48	331.7	2.6	331.3	2.6
7/21/2023	1:10:00 AM	49.2	331	2.9	330.9	2.9
7/21/2023	1:15:00 AM	52	316.5	3	316.7	3
7/21/2023	1:20:00 AM	55	301.3	3.1	301.2	3.1
7/21/2023	1:25:00 AM	56.4	295.1	2.8	295.2	2.8
7/21/2023	1:30:00 AM	57.4	291.5	3	291.4	3
7/21/2023	1:35:00 AM	57.7	281.9	3.5	282.1	3.5
7/21/2023	1:40:00 AM	56.8	282.2	4.3	282.3	4.2
7/21/2023	1:45:00 AM	54.4	278.8	3.7	279	3.7
7/21/2023	1:50:00 AM	50.8	265.1	2.7	266.4	2.7
7/21/2023	1:55:00 AM	45.2	233.1	2.1	233.3	2
7/21/2023	2:00:00 AM	49.9	218.9	1.8	219.1	1.8
7/21/2023	2:05:00 AM	70.6	227.9	2.9	228.8	2.9
7/21/2023	2:10:00 AM	74.3	238.6	3.4	238.7	3.4
7/21/2023	2:15:00 AM	62.1	234.3	3.7	234.3	3.7
7/21/2023	2:20:00 AM	53.2	240	3.1	240.3	3.1
7/21/2023	2:25:00 AM	49.2	240	2.6	240.3	2.5
7/21/2023	2:30:00 AM	56.4	248.5	2.1	248.8	2.1
7/21/2023	2:35:00 AM	70.9	232.4	1.9	233	1.8
7/21/2023	2:40:00 AM	86.3	198	2.1	199.6	2
7/21/2023	2:45:00 AM	85.6	195.2	1.3	194.3	1.3
7/21/2023	2:50:00 AM	79.3	176.6	1	178.2	0.9
7/21/2023	2:55:00 AM	71.7	170	1	171.7	0.9
7/21/2023	3:00:00 AM	64.1	227.6	1.3	228.9	1.3
7/21/2023	3:05:00 AM	56.5	244	2.3	243.5	2.2
7/21/2023	3:10:00 AM	60	249.8	3.3	249.9	3.2
7/21/2023	3:15:00 AM	76.4	260.3	3.7	260.5	3.7
7/21/2023	3:20:00 AM	82.8	262.4	4.2	262.5	4.2
7/21/2023	3:25:00 AM	74.2	260.8	4.3	260.8	4.3
7/21/2023	3:30:00 AM	61.9	262.4	4.4	262.6	4.4
7/21/2023	3:35:00 AM	54.1	256.6	3.7	256.7	3.6
7/21/2023	3:40:00 AM	54.9	242	2.5	242.7	2.5
7/21/2023	3:45:00 AM	57.4	201.3	0	204.3	0.7
7/21/2023	3:50:00 AM	68.9	151.5	0	157.7	0.4
7/21/2023	3:55:00 AM	100.1	202.4	0	192.9	0.4
7/21/2023	4:00:00 AM	106.3	44.1	1.7	43	1.6
7/21/2023	4:05:00 AM	104.1	37.9	2.7	37.6	2.7
7/21/2023	4:10:00 AM	105	50.6	3.1	50.7	3
7/21/2023	4:15:00 AM	107.4	27.2	1.8	33.5	1.7
7/21/2023	4:20:00 AM	102.2	286	2.9	277.4	2.7

Site: West 43rd Avenue						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	4:25:00 AM	98.7	240	6.3	240.1	6.1
7/21/2023	4:30:00 AM	120.5	241.6	13.3	241.5	13.1
7/21/2023	4:35:00 AM	192.6	241.1	11.4	241.3	11.3
7/21/2023	4:40:00 AM	285.3	243.2	9.2	243	9.1
7/21/2023	4:45:00 AM	330.3	243.6	9.2	243.5	9
7/21/2023	4:50:00 AM	343.1	252.5	12.7	252.7	12.5
7/21/2023	4:55:00 AM	359	256.1	14.2	256.3	14
7/21/2023	5:00:00 AM	388	253.2	16.7	253.1	16.5
7/21/2023	5:05:00 AM	439.9	257.4	13.3	257.4	13
7/21/2023	5:10:00 AM	456.6	262.8	12.9	263.2	12.8
7/21/2023	5:15:00 AM	445.8	269.6	14.1	269.8	13.9
7/21/2023	5:20:00 AM	424.9	272.8	13.5	272.8	13.4
7/21/2023	5:25:00 AM	398.4	271.7	14.1	272	13.9
7/21/2023	5:30:00 AM	383.8	269.2	14.9	269.5	14.8
7/21/2023	5:35:00 AM	376.8	267.2	14.5	267.5	14.3
7/21/2023	5:40:00 AM	378.4	268.7	14.4	268.8	14.2
7/21/2023	5:45:00 AM	377.4	268.8	14.3	269.2	14.2
7/21/2023	5:50:00 AM	374.2	269.1	14.9	269.5	14.8
7/21/2023	5:55:00 AM	372.6	268.8	15.7	269	15.6
7/21/2023	6:00:00 AM	373	263.6	15.7	263.9	15.5
7/21/2023	6:05:00 AM	394.8	265.9	16	266.1	15.9
7/21/2023	6:10:00 AM	425.4	263.3	17	263.5	16.8
7/21/2023	6:15:00 AM	476.6	268.2	17.8	268.3	17.6
7/21/2023	6:20:00 AM	509.8	267.1	16	267.6	15.8
7/21/2023	6:25:00 AM	495.2	270.1	14.5	270.3	14.3
7/21/2023	6:30:00 AM	463	270.6	14.4	271	14.3
7/21/2023	6:35:00 AM	425.7	264.2	12.3	264.1	12
7/21/2023	6:40:00 AM	393.9	274.9	12.9	275	12.8
7/21/2023	6:45:00 AM	370.7	267	11.7	267.3	11.5
7/21/2023	6:50:00 AM	353	270.9	13	271	12.9
7/21/2023	6:55:00 AM	336.3	268.2	13.3	268.3	13.1
7/21/2023	7:00:00 AM	320.1	270.7	13	270.8	12.9
7/21/2023	7:05:00 AM	311.2	271.5	13.4	271.8	13.3
7/21/2023	7:10:00 AM	300.8	272.9	14.3	273.3	14.2
7/21/2023	7:15:00 AM	291.7	274.5	14.4	274.7	14.3
7/21/2023	7:20:00 AM	284.7	277.3	12.8	277.5	12.6
7/21/2023	7:25:00 AM	273.5	273.3	14	273.8	13.8
7/21/2023	7:30:00 AM	261.9	273.7	14	273.7	13.8
7/21/2023	7:35:00 AM	252.2	274	15.1	274.4	14.9
7/21/2023	7:40:00 AM	240.2	273.2	13.7	273.7	13.6
7/21/2023	7:45:00 AM	224.5	272.5	13	272.2	12.8
7/21/2023	7:50:00 AM	212.2	279.1	13.2	279	13
7/21/2023	7:55:00 AM	203.8	274.4	13.2	274.3	13.1
7/21/2023	8:00:00 AM	198.8	279.8	12.5	279.6	12.4
7/21/2023	8:05:00 AM	190.1	279.2	12.3	279.6	12.1
7/21/2023	8:10:00 AM	181.7	286.9	11.2	286.2	11.1
7/21/2023	8:15:00 AM	176.5	288.7	14.5	288.8	14.3
7/21/2023	8:20:00 AM	170.2	289.6	12.6	289.5	12.5
7/21/2023	8:25:00 AM	169.7	294.2	14.1	294.4	14
7/21/2023	8:30:00 AM	169.1	292	11.8	291.1	11.6
7/21/2023	8:35:00 AM	167	288.2	13	288.3	12.8
7/21/2023	8:40:00 AM	161.6	288.7	12.9	288.8	12.7
7/21/2023	8:45:00 AM	156.1	279	11.3	279.5	11.1

Site: West 43rd Avenue						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	8:50:00 AM	146.1	276	12.5	276	12.4
7/21/2023	8:55:00 AM	135.5	277.8	12.5	277.8	12.4
7/21/2023	9:00:00 AM	130.9	272	12.5	272.5	12.4
7/21/2023	9:05:00 AM	128	273.3	10.9	273.7	10.8
7/21/2023	9:10:00 AM	125.7	265.6	8.9	266.7	8.6
7/21/2023	9:15:00 AM	120.9	258.8	8.4	258.6	8.2
7/21/2023	9:20:00 AM	118.5	257.3	8.2	257.1	8
7/21/2023	9:25:00 AM	121.6	260.1	6.2	258.9	5.9
7/21/2023	9:30:00 AM	122.4	272.8	8.4	273.6	8.2
7/21/2023	9:35:00 AM	123.9	240.2	7.2	240.4	7.1
7/21/2023	9:40:00 AM	120.1	242.8	8.6	242.9	8.3
7/21/2023	9:45:00 AM	132.3	255.1	8.4	257	7.8
7/21/2023	9:50:00 AM	144.4	270.6	8.2	271.2	8
7/21/2023	9:55:00 AM	141.7	239.4	6.1	239.8	5.7
7/21/2023	10:00:00 AM	132.7	224.2	5.7	233.4	5.3
7/21/2023	10:05:00 AM	141.1	258.4	8.7	258.4	8.5
7/21/2023	10:10:00 AM	148.2	253	5.5	250	5
7/21/2023	10:15:00 AM	146.4	264.6	5.5	264.8	5.3
7/21/2023	10:20:00 AM	142.4	266	5.2	267.5	4.9
7/21/2023	10:25:00 AM	136.5	272.2	5.8	273.3	5.5
7/21/2023	10:30:00 AM	132.4	293.6	5	292.4	4.9
7/21/2023	10:35:00 AM	128.6	274.2	5.4	274.3	5
7/21/2023	10:40:00 AM	125.9	236.4	5.1	233.1	4.7
7/21/2023	10:45:00 AM	126.2	242.3	3.5	254	2.7
7/21/2023	10:50:00 AM	128.1	275.9	6.6	276.6	6.5
7/21/2023	10:55:00 AM	131.5	279	8.6	278.8	8.3
7/21/2023	11:00:00 AM	132.5	263.2	7.2	263.6	7
7/21/2023	11:05:00 AM	130.3	233.7	3.7	243.2	3.2
7/21/2023	11:10:00 AM	127.2	207	2.1	214.6	1.5
7/21/2023	11:15:00 AM	125.4	244.7	3.4	249.2	3
7/21/2023	11:20:00 AM	129.8	213.5	3.9	225.1	2.2
7/21/2023	11:25:00 AM	129.2	273.4	3.3	275.1	0.9
7/21/2023	11:30:00 AM	121.8	203.5	4.2	191	3.3
7/21/2023	11:35:00 AM	126.4	257.4	6.9	254.3	6.3
7/21/2023	11:40:00 AM	131.4	224.7	4.9	220.4	3.9
7/21/2023	11:45:00 AM	133.5	208.1	5.3	203.9	4.4
7/21/2023	11:50:00 AM	133.7	283.7	6.6	283.9	6.4
7/21/2023	11:55:00 AM	129	309.1	4.1	309.2	4
7/21/2023	12:00:00 PM	125.3	339.4	2.4	321	1.8
7/21/2023	12:05:00 PM	120.4	175.5	5.3	175.5	5
7/21/2023	12:10:00 PM	118.5	166.5	4.7	170.7	4.2
7/21/2023	12:15:00 PM	120.8	241.9	2.8	239.2	2.4
7/21/2023	12:20:00 PM	121.2	254.4	5.2	252.6	3.5
7/21/2023	12:25:00 PM	122.6	191.7	5.7	190.9	5.4
7/21/2023	12:30:00 PM	123.4	169.6	4.9	171.6	4.7
7/21/2023	12:35:00 PM	122.1	92	3.7	91.8	3.5
7/21/2023	12:40:00 PM	124.9	176.9	3.7	188.7	3.2
7/21/2023	12:45:00 PM	130.8	241.6	7.3	239.2	7
7/21/2023	12:50:00 PM	131	200.9	2.7	223.5	1.1
7/21/2023	12:55:00 PM	133	264.6	3.5	256.2	2.6
7/21/2023	1:00:00 PM	130.2	257.9	9	258.6	8.8
7/21/2023	1:05:00 PM	121	252.7	6.8	252	6.4
7/21/2023	1:10:00 PM	115.9	268	8.6	268	8.2

Site: West 43rd Avenue						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	1:15:00 PM	116.6	287.2	9.5	286.3	8.9
7/21/2023	1:20:00 PM	115.2	251.1	7	258.1	6.5
7/21/2023	1:25:00 PM	112.5	261.9	7.8	265	7.5
7/21/2023	1:30:00 PM	98.5	258.5	6.2	257.4	6
7/21/2023	1:35:00 PM	90.7	281.2	6.3	281.9	5.9
7/21/2023	1:40:00 PM	85.8	238.6	10	238.7	9.7
7/21/2023	1:45:00 PM	85.7	273	9.5	271.9	9.1
7/21/2023	1:50:00 PM	90.3	261.8	9.8	263	9.5
7/21/2023	1:55:00 PM	88	264.4	10.1	265.6	9.8
7/21/2023	2:00:00 PM	85	271.5	11.8	272.6	11.2
7/21/2023	2:05:00 PM	78.5	265.3	13.8	265.2	13.6
7/21/2023	2:10:00 PM	83.4	261	9.4	263.1	9
7/21/2023	2:15:00 PM	91.6	262.2	9.3	262.5	8.6
7/21/2023	2:20:00 PM	96.9	276	12.6	276.8	12.4
7/21/2023	2:25:00 PM	97.7	255.4	10.6	252.2	9.6
7/21/2023	2:30:00 PM	92.7	263.6	10.8	263.9	10.5
7/21/2023	2:35:00 PM	91.9	263.7	9.3	264.3	9.1
7/21/2023	2:40:00 PM	88	270.7	12	271.5	11.8
7/21/2023	2:45:00 PM	81.5	262.1	10.1	262.5	9.8
7/21/2023	2:50:00 PM	81.4	261.9	10.7	260.8	10.3
7/21/2023	2:55:00 PM	80.8	260.3	11.9	260.3	11.7
7/21/2023	3:00:00 PM	80.5	267	11.5	267.4	11.2
7/21/2023	3:05:00 PM	75.4	268.2	11.2	268	10.9
7/21/2023	3:10:00 PM	78.1	254.6	9.4	254.1	9
7/21/2023	3:15:00 PM	84.1	267.2	13.4	268.3	13
7/21/2023	3:20:00 PM	81.7	259.1	10.4	260.5	10
7/21/2023	3:25:00 PM	78.7	274.9	13.5	274.3	13.2
7/21/2023	3:30:00 PM	70.1	259.1	11.7	259.6	11.3
7/21/2023	3:35:00 PM	68.5	258.3	9.8	257.3	9.3
7/21/2023	3:40:00 PM	60.4	270.9	12.9	270.8	12.4
7/21/2023	3:45:00 PM	52.1	256.4	12.6	256.2	12.4
7/21/2023	3:50:00 PM	53.1	263.8	11.3	265.7	10.9
7/21/2023	3:55:00 PM	51.2	257.2	11.2	257.3	10.7
7/21/2023	4:00:00 PM	49	256.7	13.4	256.8	13
7/21/2023	4:05:00 PM	53.6	243.5	13.6	243.5	13.4
7/21/2023	4:10:00 PM	66.4	254.5	13.3	255.8	12.8
7/21/2023	4:15:00 PM	73.6	261.8	13	262.2	12.7
7/21/2023	4:20:00 PM	74.3	259.8	14.2	260.5	14
7/21/2023	4:25:00 PM	65.7	247.1	13.2	247.5	13
7/21/2023	4:30:00 PM	59	261.2	12.3	261.3	12
7/21/2023	4:35:00 PM	53.8	265.4	12.6	265.6	12.4
7/21/2023	4:40:00 PM	59.1	275.8	15.1	276.3	15
7/21/2023	4:45:00 PM	57.1	262.9	13.4	262.5	13.2
7/21/2023	4:50:00 PM	56.3	266	12.2	265.9	11.9
7/21/2023	4:55:00 PM	55.3	276.2	13.2	276.1	13
7/21/2023	5:00:00 PM	42.5	268.5	12.3	268.5	12.1
7/21/2023	5:05:00 PM	28.6	266.4	12.6	267.4	12.4
7/21/2023	5:10:00 PM	31.9	265.5	13.2	265.6	13
7/21/2023	5:15:00 PM	39.7	255.2	12.3	254.8	12
7/21/2023	5:20:00 PM	47.5	254.3	11.9	254.1	11.8
7/21/2023	5:25:00 PM	55.4	257.4	11.7	257.4	11.5
7/21/2023	5:30:00 PM	58.4	255.8	9.8	256.5	9.6
7/21/2023	5:35:00 PM	56.3	249	10.5	248.7	10.3

Site: West 43rd Avenue						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	5:40:00 PM	55.5	253.2	10	252.4	9.9
7/21/2023	5:45:00 PM	59.8	253	10.9	252.8	10.8
7/21/2023	5:50:00 PM	63.2	258.4	11.5	258.7	11.4
7/21/2023	5:55:00 PM	67.8	251.1	10.9	251.4	10.7
7/21/2023	6:00:00 PM	67.8	250.1	10.9	249.8	10.7
7/21/2023	6:05:00 PM	64.7	258.3	9.7	258.7	9.5
7/21/2023	6:10:00 PM	59.2	254.6	9.7	254.7	9.6
7/21/2023	6:15:00 PM	54.2	254.5	9.1	254.3	9
7/21/2023	6:20:00 PM	49.9	255.1	8.9	254.9	8.8
7/21/2023	6:25:00 PM	46.5	257.3	9.5	257.6	9.3
7/21/2023	6:30:00 PM	44.9	252.6	10.1	251.9	10
7/21/2023	6:35:00 PM	42	254.7	9.6	254.8	9.4
7/21/2023	6:40:00 PM	41.5	253.7	9	253.3	8.8
7/21/2023	6:45:00 PM	41.8	252.2	7.1	252.5	6.9
7/21/2023	6:50:00 PM	43.9	262.5	8	262.6	7.8
7/21/2023	6:55:00 PM	46.6	270.3	7.7	270.7	7.6
7/21/2023	7:00:00 PM	46.5	272.1	7.8	272.3	7.8
7/21/2023	7:05:00 PM	44.5	284.9	8.2	285.4	8
7/21/2023	7:10:00 PM	45.1	308.8	8.4	307.7	8.3
7/21/2023	7:15:00 PM	46.3	332.9	9	333.2	8.9
7/21/2023	7:20:00 PM	48.3	346.2	9.4	346.1	9.1
7/21/2023	7:25:00 PM	56.3	346.5	13	346.9	12.8
7/21/2023	7:30:00 PM	70.9	353.9	9.4	354.8	9.1
7/21/2023	7:35:00 PM	81.8	349.4	10.6	349.3	10.4
7/21/2023	7:40:00 PM	84.4	358.1	7.8	357.8	7.5
7/21/2023	7:45:00 PM	83.4	349.9	6.1	350.6	6
7/21/2023	7:50:00 PM	81.7	350	5.2	350.2	5
7/21/2023	7:55:00 PM	77.9	351.4	4.4	352.4	4.3
7/21/2023	8:00:00 PM	74.5	335.4	4.4	337.2	4.3
7/21/2023	8:05:00 PM	70.4	9	5.2	6.6	4.7
7/21/2023	8:10:00 PM	65.4	358.6	5.1	358.7	4.9
7/21/2023	8:15:00 PM	64.2	0.3	3.5	359.5	3.4
7/21/2023	8:20:00 PM	61.1	4.3	4.5	4.3	4.4
7/21/2023	8:25:00 PM	60.1	5	5.2	4.6	5.1
7/21/2023	8:30:00 PM	60	21.1	7.9	21.3	7.8
7/21/2023	8:35:00 PM	58.7	46.3	13.4	47.1	13.1
7/21/2023	8:40:00 PM	71.4	45.5	15.1	45.2	15
7/21/2023	8:45:00 PM	159.7	44.7	13.6	44.6	13.4
7/21/2023	8:50:00 PM	313.6	53.3	12.6	52.9	12.4
7/21/2023	8:55:00 PM	364.6	73.1	9.1	72.3	9
7/21/2023	9:00:00 PM	364.6	70.3	9.1	70	8.9
7/21/2023	9:05:00 PM	345.4	69.2	10.7	69.5	10.6
7/21/2023	9:10:00 PM	319	61.8	8.3	62.3	8.2
7/21/2023	9:15:00 PM	290.2	65.6	8.3	65.7	8.2
7/21/2023	9:20:00 PM	258.9	70.6	7.8	70.6	7.7
7/21/2023	9:25:00 PM	226.8	72.3	6.1	72.5	5.9
7/21/2023	9:30:00 PM	197.5	86.4	6.3	85.7	6.1
7/21/2023	9:35:00 PM	170.2	86.6	6.5	86.9	6.3
7/21/2023	9:40:00 PM	149.4	81.3	6.3	81.7	6.2
7/21/2023	9:45:00 PM	135.1	83.4	6.2	83.8	6.1
7/21/2023	9:50:00 PM	125.3	69.4	6.6	69.7	6.5
7/21/2023	9:55:00 PM	119.1	62.6	7	62.8	6.9
7/21/2023	10:00:00 PM	116.3	72.3	6.3	72	6.3

Site: West 43rd Avenue						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	10:05:00 PM	113.4	82	6.5	82	6.4
7/21/2023	10:10:00 PM	107.9	106.2	5.4	105.1	5.2
7/21/2023	10:15:00 PM	103.8	123.4	5.3	123.2	5.2
7/21/2023	10:20:00 PM	98.2	116.2	5.8	116.3	5.6
7/21/2023	10:25:00 PM	91.7	134.3	6.4	134.2	6.1
7/21/2023	10:30:00 PM	83.3	148.1	8.6	147.8	8.4
7/21/2023	10:35:00 PM	72.6	145.8	10.1	145.6	10
7/21/2023	10:40:00 PM	64.9	145.1	10.9	144	10.8
7/21/2023	10:45:00 PM	83.2	156.7	21.1	156.2	20.5
7/21/2023	10:50:00 PM	217.6	159.5	18.6	159.6	18.2
7/21/2023	10:55:00 PM	815.1	150.9	15.6	151	15.3
7/21/2023	11:00:00 PM	1711.9	155.6	16.8	155.9	16.4
7/21/2023	11:05:00 PM	2056.4	154	22.3	154	21.8
7/21/2023	11:10:00 PM	2443.5	156.1	21.3	155.5	20.9
7/21/2023	11:15:00 PM	2777.9	158	21.1	158.2	20.6
7/21/2023	11:20:00 PM	2825.8	162.3	21.2	162.3	20.8
7/21/2023	11:25:00 PM	2780.4	162.6	18.5	162.7	18.1
7/21/2023	11:30:00 PM	2463.4	176.9	19.2	176.5	18.7
7/21/2023	11:35:00 PM	2053.4	181.2	15.2	180.3	14.6
7/21/2023	11:40:00 PM	1650.7	180.9	18.4	179.9	17.9
7/21/2023	11:45:00 PM	1360.7	180.7	18.2	180.1	17.7
7/21/2023	11:50:00 PM	1151.2	179.1	18.2	178	17.8
7/21/2023	11:55:00 PM	995.8	182.8	16.9	181.9	16.4
	Average	216.9	261	8.8	259.3	5.4
	Max	2825.8	358.6	22.3	359.5	21.8
	Max Hour	171535.1092	5820.927452	23.87581446	5669.745795	23.59950784
	Min	28.6	0.3	0	4.3	0.4
	Count	288	288	288	288	288
	Total	62481.9	67031.4	2557.8	67459.3	2490.6

Site: Zuni Hills						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	12:00:00 AM	12.8	<	1.4	<	1.3
7/21/2023	12:05:00 AM	32.4	<	0.4	<	0.4
7/21/2023	12:10:00 AM	10.2	<	1.7	<	1.6
7/21/2023	12:15:00 AM	23.7	<	2.1	<	2
7/21/2023	12:20:00 AM	8.9	<	2.1	<	2
7/21/2023	12:25:00 AM	3.4	<	2.4	<	2.3
7/21/2023	12:30:00 AM	12.4	<	2.2	<	2
7/21/2023	12:35:00 AM	11.7	<	2.6	<	2.5
7/21/2023	12:40:00 AM	11.1	<	3.3	<	3.2
7/21/2023	12:45:00 AM	18.5	<	2.4	<	2.4
7/21/2023	12:50:00 AM	12.2	<	3	<	3
7/21/2023	12:55:00 AM	12	<	2.8	<	2.8
7/21/2023	1:00:00 AM	11.4	<	2.4	<	2.3
7/21/2023	1:05:00 AM	11.4	<	1.6	<	1.5
7/21/2023	1:10:00 AM	45.9	<	0	<	0
7/21/2023	1:15:00 AM	24.2	<	0.1	<	0
7/21/2023	1:20:00 AM	15.5	<	1.1	<	1
7/21/2023	1:25:00 AM	19.3	<	0.9	<	0.9
7/21/2023	1:30:00 AM	31.7	<	1	<	1
7/21/2023	1:35:00 AM	58.4	<	0.9	<	0.5
7/21/2023	1:40:00 AM	13.6	<	0.3	<	0.3
7/21/2023	1:45:00 AM	31.4	<	1.2	<	1.2
7/21/2023	1:50:00 AM	25.8	<	0.2	<	0.2
7/21/2023	1:55:00 AM	21.3	<	1.5	<	1.5
7/21/2023	2:00:00 AM	42.1	<	2.1	<	1.8
7/21/2023	2:05:00 AM	34.4	<	2.3	<	2.2
7/21/2023	2:10:00 AM	29.2	<	2.5	<	2.4
7/21/2023	2:15:00 AM	14.1	<	2.7	<	2.7
7/21/2023	2:20:00 AM	9.2	<	3	<	3
7/21/2023	2:25:00 AM	23.3	<	2.8	<	2.8
7/21/2023	2:30:00 AM	20.7	<	4.1	<	4.1
7/21/2023	2:35:00 AM	35.1	<	5.4	<	5.3
7/21/2023	2:40:00 AM	23.5	<	5	<	4.9
7/21/2023	2:45:00 AM	9	<	2.7	<	2.7
7/21/2023	2:50:00 AM	7.4	<	0.7	<	0.7
7/21/2023	2:55:00 AM	17.4	<	0.9	<	0.9
7/21/2023	3:00:00 AM	29.1	<	0.6	<	0.6
7/21/2023	3:05:00 AM	83	<	1.6	<	1.5
7/21/2023	3:10:00 AM	48.4	<	2.7	<	2.6
7/21/2023	3:15:00 AM	-1.2	<	4.2	<	4
7/21/2023	3:20:00 AM	-15.2	<	4.2	<	4.1
7/21/2023	3:25:00 AM	-3.5	<	5.3	<	5.3
7/21/2023	3:30:00 AM	11	<	5.4	<	5.4
7/21/2023	3:35:00 AM	21.7	<	5	<	5
7/21/2023	3:40:00 AM	35.7	<	4.1	<	4.1
7/21/2023	3:45:00 AM	22.6	<	3.8	<	3.8
7/21/2023	3:50:00 AM	28.9	<	2.9	<	2.9
7/21/2023	3:55:00 AM	32.9	<	4.3	<	4.3
7/21/2023	4:00:00 AM	47.1	<	5.9	<	5.8
7/21/2023	4:05:00 AM	48.8	<	4.8	<	4.7
7/21/2023	4:10:00 AM	59.4	<	5.2	<	5.1
7/21/2023	4:15:00 AM	50	<	5	<	4.9
7/21/2023	4:20:00 AM	40.2	<	3.8	<	3.7

Site: Zuni Hills						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	4:25:00 AM	45.8	<	4.5	<	4.3
7/21/2023	4:30:00 AM	45.1	<	6.4	<	6.3
7/21/2023	4:35:00 AM	49.9	<	14	<	13.8
7/21/2023	4:40:00 AM	62.7	<	9.1	<	9
7/21/2023	4:45:00 AM	54	<	6.3	<	6.2
7/21/2023	4:50:00 AM	55.9	<	7.4	<	7.2
7/21/2023	4:55:00 AM	70	<	2.8	<	2.6
7/21/2023	5:00:00 AM	67.7	<	2	<	1.9
7/21/2023	5:05:00 AM	75.8	<	4.4	<	4.3
7/21/2023	5:10:00 AM	84.2	<	1.7	<	1.7
7/21/2023	5:15:00 AM	82.8	<	2	<	1.8
7/21/2023	5:20:00 AM	131.6	<	2.8	<	2.7
7/21/2023	5:25:00 AM	139.5	<	4	<	2.1
7/21/2023	5:30:00 AM	72.5	<	1	<	0.8
7/21/2023	5:35:00 AM	82.7	<	1.3	<	1
7/21/2023	5:40:00 AM	160.6	<	4.6	<	4.4
7/21/2023	5:45:00 AM	265.2	<	6.1	<	5.9
7/21/2023	5:50:00 AM	277.8	<	4.9	<	4.7
7/21/2023	5:55:00 AM	246.6	<	2.8	<	2.6
7/21/2023	6:00:00 AM	238.6	<	2.9	<	2.4
7/21/2023	6:05:00 AM	246.9	<	2.7	<	2.2
7/21/2023	6:10:00 AM	288.3	<	0.5	<	0.4
7/21/2023	6:15:00 AM	280.5	<	1.1	<	1.1
7/21/2023	6:20:00 AM	296	<	2	<	1.9
7/21/2023	6:25:00 AM	307.3	<	2.1	<	2.1
7/21/2023	6:30:00 AM	353.6	<	2.5	<	2.5
7/21/2023	6:35:00 AM	358.1	<	2.9	<	2.8
7/21/2023	6:40:00 AM	324.7	<	3.4	<	3.3
7/21/2023	6:45:00 AM	230.7	<	4.2	<	4.2
7/21/2023	6:50:00 AM	229.8	<	3.8	<	3.6
7/21/2023	6:55:00 AM	246	<	1.2	<	0.5
7/21/2023	7:00:00 AM	316.6	<	1.9	<	0.8
7/21/2023	7:05:00 AM	318.5	<	4.2	<	3.6
7/21/2023	7:10:00 AM	342.4	<	10.3	<	10
7/21/2023	7:15:00 AM	323.8	<	7.9	<	7.7
7/21/2023	7:20:00 AM	306.8	<	11.7	<	11.4
7/21/2023	7:25:00 AM	291.2	<	10.5	<	10.3
7/21/2023	7:30:00 AM	285	<	10	<	9.8
7/21/2023	7:35:00 AM	283.2	<	14.6	<	14.5
7/21/2023	7:40:00 AM	278.4	<	10.8	<	10.7
7/21/2023	7:45:00 AM	274.9	<	12.4	<	12.2
7/21/2023	7:50:00 AM	261.9	<	9.8	<	9.6
7/21/2023	7:55:00 AM	252.5	<	7.9	<	7.4
7/21/2023	8:00:00 AM	261.7	<	4.7	<	4.6
7/21/2023	8:05:00 AM	264.2	<	5.8	<	5.2
7/21/2023	8:10:00 AM	251.2	<	3	<	2.8
7/21/2023	8:15:00 AM	246.8	<	4.6	<	4.3
7/21/2023	8:20:00 AM	272.8	<	7.9	<	7.5
7/21/2023	8:25:00 AM	274.3	<	4.5	<	4.2
7/21/2023	8:30:00 AM	277.4	<	9	<	8.7
7/21/2023	8:35:00 AM	291.7	<	8.1	<	7.8
7/21/2023	8:40:00 AM	293.6	<	7.6	<	7.4
7/21/2023	8:45:00 AM	284.3	<	8.2	<	7.9

Site: Zuni Hills						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	8:50:00 AM	277.9	<	7.1	<	6.9
7/21/2023	8:55:00 AM	270.2	<	7.7	<	7.5
7/21/2023	9:00:00 AM	265.7	<	7.6	<	7.4
7/21/2023	9:05:00 AM	262.6	<	8.5	<	8.4
7/21/2023	9:10:00 AM	256.6	<	7.7	<	7.5
7/21/2023	9:15:00 AM	255.7	<	8.1	<	7.9
7/21/2023	9:20:00 AM	250.3	<	7.8	<	7.5
7/21/2023	9:25:00 AM	250	<	8.6	<	8.4
7/21/2023	9:30:00 AM	259.2	<	7.5	<	7.3
7/21/2023	9:35:00 AM	230.9	<	4.8	<	4.2
7/21/2023	9:40:00 AM	222.7	<	6.8	<	6.5
7/21/2023	9:45:00 AM	213.4	<	6.7	<	6.3
7/21/2023	9:50:00 AM	222.9	<	7.6	<	7.3
7/21/2023	9:55:00 AM	214.3	<	6.4	<	6.2
7/21/2023	10:00:00 AM	195.4	<	7	<	6.2
7/21/2023	10:05:00 AM	214.5	<	7.5	<	7.4
7/21/2023	10:10:00 AM	207	<	8	<	7.7
7/21/2023	10:15:00 AM	183.8	<	5.6	<	5.1
7/21/2023	10:20:00 AM	203.1	<	8.2	<	7.9
7/21/2023	10:25:00 AM	208.8	<	7.5	<	7.3
7/21/2023	10:30:00 AM	196.4	<	8	<	7.3
7/21/2023	10:35:00 AM	194.5	<	6.6	<	6
7/21/2023	10:40:00 AM	186	<	6	<	5.9
7/21/2023	10:45:00 AM	184.7	<	7.4	<	7.1
7/21/2023	10:50:00 AM	202.2	<	7	<	6.9
7/21/2023	10:55:00 AM	179.3	<	6.8	<	6.5
7/21/2023	11:00:00 AM	167.2	<	5.1	<	4.9
7/21/2023	11:05:00 AM	170	<	7.3	<	7
7/21/2023	11:10:00 AM	179.4	<	4.5	<	4.1
7/21/2023	11:15:00 AM	202.9	<	7.9	<	7.6
7/21/2023	11:20:00 AM	186.1	<	7.5	<	7.3
7/21/2023	11:25:00 AM	189.5	<	8.6	<	8.3
7/21/2023	11:30:00 AM	179.2	<	8.6	<	8.4
7/21/2023	11:35:00 AM	183.7	<	7.1	<	6.7
7/21/2023	11:40:00 AM	168.4	<	5.9	<	4.7
7/21/2023	11:45:00 AM	140.8	<	5.6	<	5.4
7/21/2023	11:50:00 AM	134.5	<	5	<	4.3
7/21/2023	11:55:00 AM	163.7	<	5.4	<	4.7
7/21/2023	12:00:00 PM	140.9	<	8.3	<	7.9
7/21/2023	12:05:00 PM	155.2	<	6	<	4.3
7/21/2023	12:10:00 PM	145.3	<	3	<	2.5
7/21/2023	12:15:00 PM	166.5	<	6.1	<	5.3
7/21/2023	12:20:00 PM	155.9	<	8	<	7.7
7/21/2023	12:25:00 PM	141.3	<	8.6	<	8.5
7/21/2023	12:30:00 PM	150.4	<	6.8	<	6.6
7/21/2023	12:35:00 PM	158.3	<	5.3	<	4.4
7/21/2023	12:40:00 PM	166.2	<	4.5	<	4.2
7/21/2023	12:45:00 PM	158.7	<	7.4	<	7.1
7/21/2023	12:50:00 PM	149.7	<	5	<	4.3
7/21/2023	12:55:00 PM	155.6	<	4.2	<	3
7/21/2023	1:00:00 PM	168.5	<	4.8	<	4.6
7/21/2023	1:05:00 PM	149.9	<	5.4	<	5
7/21/2023	1:10:00 PM	140.6	<	3.8	<	3.5

Site: Zuni Hills						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	1:15:00 PM	147.7	<	3.5	<	3.2
7/21/2023	1:20:00 PM	168.1	<	5.3	<	5.2
7/21/2023	1:25:00 PM	144.5	<	7.8	<	6.9
7/21/2023	1:30:00 PM	150.8	<	5	<	4.7
7/21/2023	1:35:00 PM	196.7	<	3.9	<	2.9
7/21/2023	1:40:00 PM	166.5	<	6.8	<	6.4
7/21/2023	1:45:00 PM	144.1	<	6.1	<	5.2
7/21/2023	1:50:00 PM	143.4	<	5.9	<	5.7
7/21/2023	1:55:00 PM	139.6	<	4.9	<	4.1
7/21/2023	2:00:00 PM	125.4	<	8.3	<	7.7
7/21/2023	2:05:00 PM	106.5	<	7.7	<	7.4
7/21/2023	2:10:00 PM	120.9	<	4.5	<	4.3
7/21/2023	2:15:00 PM	124.8	<	9.7	<	9.3
7/21/2023	2:20:00 PM	110.7	<	5.6	<	5.2
7/21/2023	2:25:00 PM	113.7	<	6.6	<	6.4
7/21/2023	2:30:00 PM	107	<	6.9	<	6.7
7/21/2023	2:35:00 PM	117.7	<	9	<	8.2
7/21/2023	2:40:00 PM	113.7	<	10.8	<	10.3
7/21/2023	2:45:00 PM	101.4	<	9	<	7.9
7/21/2023	2:50:00 PM	102.7	<	7	<	6.5
7/21/2023	2:55:00 PM	104	<	8.8	<	8.3
7/21/2023	3:00:00 PM	85.9	<	4.3	<	4.1
7/21/2023	3:05:00 PM	83.8	<	10.6	<	10.2
7/21/2023	3:10:00 PM	75.4	<	6.8	<	6.4
7/21/2023	3:15:00 PM	75	<	4.7	<	4.5
7/21/2023	3:20:00 PM	58.3	<	6.9	<	6.7
7/21/2023	3:25:00 PM	23.3	<	7.8	<	7.5
7/21/2023	3:30:00 PM	-3.8	<	6.4	<	5.8
7/21/2023	3:35:00 PM	14.3	<	7.5	<	6.7
7/21/2023	3:40:00 PM	1.3	<	7.6	<	7.1
7/21/2023	3:45:00 PM	12	<	11.9	<	11.4
7/21/2023	3:50:00 PM	37.6	<	8.3	<	8.1
7/21/2023	3:55:00 PM	23.7	<	11.4	<	11
7/21/2023	4:00:00 PM	30.9	<	8.3	<	8.1
7/21/2023	4:05:00 PM	30.5	<	11.2	<	10.8
7/21/2023	4:10:00 PM	40.3	<	8	<	7.9
7/21/2023	4:15:00 PM	31.1	<	7	<	6.7
7/21/2023	4:20:00 PM	28.7	<	10.1	<	9.6
7/21/2023	4:25:00 PM	37.7	<	7.6	<	7.3
7/21/2023	4:30:00 PM	47.8	<	8.8	<	8.3
7/21/2023	4:35:00 PM	39.1	<	10.8	<	10
7/21/2023	4:40:00 PM	67.9	<	10.2	<	10
7/21/2023	4:45:00 PM	178.1	<	8	<	7.4
7/21/2023	4:50:00 PM	123.8	<	8	<	7.7
7/21/2023	4:55:00 PM	70.4	<	8.5	<	8.2
7/21/2023	5:00:00 PM	50.6	<	8.2	<	7.9
7/21/2023	5:05:00 PM	44.2	<	10.1	<	9.8
7/21/2023	5:10:00 PM	34	<	10	<	9.5
7/21/2023	5:15:00 PM	31.6	<	9	<	8.9
7/21/2023	5:20:00 PM	34.7	<	7.6	<	7.5
7/21/2023	5:25:00 PM	40.6	<	6.8	<	6.6
7/21/2023	5:30:00 PM	51.2	<	8.3	<	8.1
7/21/2023	5:35:00 PM	60.8	<	6.7	<	6.6

Site: Zuni Hills						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	5:40:00 PM	53.6	<	8.3	<	8.2
7/21/2023	5:45:00 PM	43.4	<	6.1	<	6
7/21/2023	5:50:00 PM	36.9	<	6.1	<	5.8
7/21/2023	5:55:00 PM	34.6	<	8.3	<	8
7/21/2023	6:00:00 PM	44.4	<	8.2	<	8.2
7/21/2023	6:05:00 PM	47.1	<	6	<	5.8
7/21/2023	6:10:00 PM	51.1	<	5.8	<	4.9
7/21/2023	6:15:00 PM	65.2	<	16	<	15.8
7/21/2023	6:20:00 PM	139.4	<	17.4	<	16.5
7/21/2023	6:25:00 PM	271	<	16.8	<	16.4
7/21/2023	6:30:00 PM	872.8	<	20.2	<	19.9
7/21/2023	6:35:00 PM	781.3	<	17.1	<	16.8
7/21/2023	6:40:00 PM	550.8	<	18	<	17.1
7/21/2023	6:45:00 PM	487.2	<	18.9	<	18.5
7/21/2023	6:50:00 PM	290	<	18.2	<	17.4
7/21/2023	6:55:00 PM	174.6	<	18.8	<	18.2
7/21/2023	7:00:00 PM	151.6	<	19.1	<	18.8
7/21/2023	7:05:00 PM	116.1	<	16.9	<	16.7
7/21/2023	7:10:00 PM	76.7	<	17.3	<	17
7/21/2023	7:15:00 PM	60.6	<	17	<	16.8
7/21/2023	7:20:00 PM	56.1	<	13.6	<	13.3
7/21/2023	7:25:00 PM	41.4	<	15.3	<	15
7/21/2023	7:30:00 PM	27.6	<	12.6	<	12.4
7/21/2023	7:35:00 PM	18.7	<	13	<	12.8
7/21/2023	7:40:00 PM	15.5	<	12.3	<	12
7/21/2023	7:45:00 PM	16.5	<	11.6	<	11.4
7/21/2023	7:50:00 PM	17.5	<	9.9	<	9.6
7/21/2023	7:55:00 PM	25.8	<	7.2	<	7
7/21/2023	8:00:00 PM	27.5	<	7	<	6.7
7/21/2023	8:05:00 PM	24.7	<	7.4	<	7.2
7/21/2023	8:10:00 PM	15.9	<	6.9	<	6.6
7/21/2023	8:15:00 PM	13.2	<	8.7	<	8.4
7/21/2023	8:20:00 PM	14.8	<	7.5	<	7.1
7/21/2023	8:25:00 PM	13	<	5.6	<	5.5
7/21/2023	8:30:00 PM	15.3	<	7	<	6.7
7/21/2023	8:35:00 PM	9	<	7	<	6.7
7/21/2023	8:40:00 PM	7.7	<	6.6	<	6.5
7/21/2023	8:45:00 PM	13	<	6.3	<	6.2
7/21/2023	8:50:00 PM	13.8	<	5.7	<	5.5
7/21/2023	8:55:00 PM	8.6	<	6.7	<	6.5
7/21/2023	9:00:00 PM	2.5	<	7.1	<	7
7/21/2023	9:05:00 PM	15.1	<	6.1	<	6
7/21/2023	9:10:00 PM	17.9	<	6.3	<	6.2
7/21/2023	9:15:00 PM	20.8	<	6.1	<	6
7/21/2023	9:20:00 PM	30.3	<	5.3	<	5.2
7/21/2023	9:25:00 PM	43	<	4.7	<	4.6
7/21/2023	9:30:00 PM	59.9	<	4.8	<	4.8
7/21/2023	9:35:00 PM	71.7	<	4.6	<	4.6
7/21/2023	9:40:00 PM	87.9	<	4	<	3.9
7/21/2023	9:45:00 PM	65.9	<	3.4	<	3.4
7/21/2023	9:50:00 PM	54	<	2.6	<	2.5
7/21/2023	9:55:00 PM	47.1	<	2.2	<	2.2
7/21/2023	10:00:00 PM	33.7	<	1.9	<	1.8

Site: Zuni Hills						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	10:05:00 PM	29.8	<	2.4	<	2.4
7/21/2023	10:10:00 PM	38.6	<	2.7	<	2.6
7/21/2023	10:15:00 PM	39.6	<	4.3	<	4.3
7/21/2023	10:20:00 PM	30.6	<	5.9	<	5.8
7/21/2023	10:25:00 PM	36.7	<	5.8	<	5.8
7/21/2023	10:30:00 PM	42.6	<	4.2	<	4.1
7/21/2023	10:35:00 PM	43.5	<	2.6	<	2.6
7/21/2023	10:40:00 PM	41.2	<	1.5	<	0.7
7/21/2023	10:45:00 PM	57.3	<	3.5	<	3.5
7/21/2023	10:50:00 PM	46.9	<	4.4	<	4.4
7/21/2023	10:55:00 PM	52.6	<	2.8	<	2.6
7/21/2023	11:00:00 PM	44.1	<	0.8	<	0.7
7/21/2023	11:05:00 PM	43.5	<	3	<	3
7/21/2023	11:10:00 PM	46.4	<	5.4	<	5.4
7/21/2023	11:15:00 PM	51.8	<	3.4	<	1.3
7/21/2023	11:20:00 PM	87.1	<	3.4	<	2.2
7/21/2023	11:25:00 PM	77.5	<	6	<	5.6
7/21/2023	11:30:00 PM	122.5	<	13	<	12.7
7/21/2023	11:35:00 PM	297.2	<	11.7	<	11.3
7/21/2023	11:40:00 PM	483.5	<	11.9	<	11.7
7/21/2023	11:45:00 PM	562.2	<	8	<	7.9
7/21/2023	11:50:00 PM	564.6	<	9.2	<	9
7/21/2023	11:55:00 PM	520.2	<	10.1	<	9.8
	Average	125.5		6.4		6.1
	Max	872.8	0	20.2	0	19.9
	Max Hour					
	Min	-15.2	0	0	0	0
	Count	288	0	288	0	288
	Total					

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	12:00:00 AM	47.8	-	3.9	176.1	2.6
7/21/2023	12:05:00 AM	47.1	-	-	145.7	2.1
7/21/2023	12:10:00 AM	50.6	-	-	133.5	1.4
7/21/2023	12:15:00 AM	51.9	-	-	136.1	1.1
7/21/2023	12:20:00 AM	50	-	-	162.7	1.4
7/21/2023	12:25:00 AM	47.8	-	-	158.1	1.9
7/21/2023	12:30:00 AM	50.7	-	-	161.1	0.6
7/21/2023	12:35:00 AM	73.2	-	-	122.7	2.1
7/21/2023	12:40:00 AM	100.1	-	-	108.4	1.7
7/21/2023	12:45:00 AM	110.1	-	-	120.4	1.5
7/21/2023	12:50:00 AM	108	-	-	148.6	1.5
7/21/2023	12:55:00 AM	102.5	-	-	183.2	1.5
7/21/2023	1:00:00 AM	94.3	-	4.5	192.6	0.5
7/21/2023	1:05:00 AM	86.4	-	-	95.2	0.6
7/21/2023	1:10:00 AM	79	-	-	85.3	2.2
7/21/2023	1:15:00 AM	76.5	-	-	90.9	2
7/21/2023	1:20:00 AM	73.8	-	-	113.4	2.3
7/21/2023	1:25:00 AM	68.6	-	-	117.2	2.6
7/21/2023	1:30:00 AM	64.1	-	-	112.7	3.1
7/21/2023	1:35:00 AM	61.8	-	-	99.9	2.1
7/21/2023	1:40:00 AM	57.5	-	-	113.9	2
7/21/2023	1:45:00 AM	52.7	-	-	141.3	2.7
7/21/2023	1:50:00 AM	49.2	-	-	137	2
7/21/2023	1:55:00 AM	50.4	-	-	137.7	2
7/21/2023	2:00:00 AM	55.1	-	11.3	141.7	2.6
7/21/2023	2:05:00 AM	57.8	-	-	170.4	1.2
7/21/2023	2:10:00 AM	58.2	-	-	208.4	0.6
7/21/2023	2:15:00 AM	59.1	-	-	226.5	0.8
7/21/2023	2:20:00 AM	60.9	-	-	205.5	1.1
7/21/2023	2:25:00 AM	58.4	-	-	169.6	0.8
7/21/2023	2:30:00 AM	55.6	-	-	80.5	2.6
7/21/2023	2:35:00 AM	53.8	-	-	64	7.8
7/21/2023	2:40:00 AM	57.4	-	-	70.5	5
7/21/2023	2:45:00 AM	59.8	-	-	75.6	3.6
7/21/2023	2:50:00 AM	58.9	-	-	72	2.3
7/21/2023	2:55:00 AM	54.5	-	-	69.5	4.2
7/21/2023	3:00:00 AM	48.2	-	6.6	81.7	4.4
7/21/2023	3:05:00 AM	46.3	-	-	92.3	3.3
7/21/2023	3:10:00 AM	47.5	-	-	99.8	3
7/21/2023	3:15:00 AM	48.4	-	-	110.6	3
7/21/2023	3:20:00 AM	48.6	-	-	108.7	3.2
7/21/2023	3:25:00 AM	47.3	-	-	100.7	3.3
7/21/2023	3:30:00 AM	50.2	-	-	112	2.3
7/21/2023	3:35:00 AM	55.6	-	-	120.5	2.8
7/21/2023	3:40:00 AM	59.1	-	-	115.9	3.1
7/21/2023	3:45:00 AM	61.7	-	-	103.4	1.5
7/21/2023	3:50:00 AM	63.7	-	-	129.9	3.4
7/21/2023	3:55:00 AM	77.8	-	-	141.6	1.5

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	4:00:00 AM	89.9	-	9	139	2.5
7/21/2023	4:05:00 AM	90.5	-	-	133.4	3.5
7/21/2023	4:10:00 AM	86.2	-	-	154.3	2.6
7/21/2023	4:15:00 AM	80.7	-	-	155.7	4.1
7/21/2023	4:20:00 AM	78.6	-	-	166.7	4.6
7/21/2023	4:25:00 AM	74.8	-	-	197.5	4
7/21/2023	4:30:00 AM	68.6	-	-	225.7	6.2
7/21/2023	4:35:00 AM	59.5	-	-	217.5	6.2
7/21/2023	4:40:00 AM	52	-	-	223.7	4.9
7/21/2023	4:45:00 AM	52.8	-	-	226.5	4.6
7/21/2023	4:50:00 AM	58.5	-	-	240.6	4.3
7/21/2023	4:55:00 AM	65.5	-	-	251.2	3.7
7/21/2023	5:00:00 AM	70.1	-	6.3	268.4	1.9
7/21/2023	5:05:00 AM	72.6	-	-	10.5	1.5
7/21/2023	5:10:00 AM	77.5	-	-	51.2	4.1
7/21/2023	5:15:00 AM	83	-	-	53.8	3.4
7/21/2023	5:20:00 AM	85.1	-	-	39.8	0.3
7/21/2023	5:25:00 AM	81	-	-	290.4	1.9
7/21/2023	5:30:00 AM	75.6	-	-	289.2	1.2
7/21/2023	5:35:00 AM	75.4	-	-	194.9	1.8
7/21/2023	5:40:00 AM	79.8	-	-	186.3	1.3
7/21/2023	5:45:00 AM	92.1	-	-	24.4	2.8
7/21/2023	5:50:00 AM	100.6	-	-	325.5	1.3
7/21/2023	5:55:00 AM	99.8	-	-	240.2	0.9
7/21/2023	6:00:00 AM	96.3	-	13	243.3	3
7/21/2023	6:05:00 AM	93.9	-	-	271.5	1.3
7/21/2023	6:10:00 AM	91.7	-	-	352.9	0.7
7/21/2023	6:15:00 AM	86.9	-	-	54.7	1.2
7/21/2023	6:20:00 AM	81.7	-	-	57.7	3
7/21/2023	6:25:00 AM	81.4	-	-	50.4	3
7/21/2023	6:30:00 AM	83.7	-	-	52.8	3.4
7/21/2023	6:35:00 AM	86.7	-	-	42.2	3.8
7/21/2023	6:40:00 AM	95.6	-	-	32.7	3.9
7/21/2023	6:45:00 AM	116.2	-	-	14.7	4.5
7/21/2023	6:50:00 AM	158.3	-	-	16.8	6.7
7/21/2023	6:55:00 AM	186.5	-	-	35.9	7.2
7/21/2023	7:00:00 AM	189.3	-	13.1	35.9	5.2
7/21/2023	7:05:00 AM	179.4	-	-	32.8	4.9
7/21/2023	7:10:00 AM	172.5	-	-	28.2	5.7
7/21/2023	7:15:00 AM	172.1	-	-	21	5.2
7/21/2023	7:20:00 AM	172.9	-	-	28.7	7.5
7/21/2023	7:25:00 AM	179.8	-	-	18.6	7.3
7/21/2023	7:30:00 AM	197.7	-	-	10.5	5.7
7/21/2023	7:35:00 AM	216.5	-	-	358.6	6.1
7/21/2023	7:40:00 AM	225.1	-	-	0.4	5.7
7/21/2023	7:45:00 AM	228.7	-	-	11	7.1
7/21/2023	7:50:00 AM	236.6	-	-	357.7	6
7/21/2023	7:55:00 AM	242.9	-	-	0	6

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	8:00:00 AM	243	-	11.4	351.4	4.8
7/21/2023	8:05:00 AM	239.1	-	-	354.4	4.4
7/21/2023	8:10:00 AM	237.5	-	-	347.9	4.3
7/21/2023	8:15:00 AM	235.4	-	-	1.6	4.1
7/21/2023	8:20:00 AM	227.8	-	-	1.1	6
7/21/2023	8:25:00 AM	221.2	-	-	352.2	3.6
7/21/2023	8:30:00 AM	218.5	-	-	2.9	3.3
7/21/2023	8:35:00 AM	212.5	-	-	345.3	2.5
7/21/2023	8:40:00 AM	200.1	-	-	291.4	4
7/21/2023	8:45:00 AM	192.6	-	-	288.7	6.3
7/21/2023	8:50:00 AM	192.1	-	-	305.1	2.7
7/21/2023	8:55:00 AM	185.7	-	-	280.6	5.3
7/21/2023	9:00:00 AM	177.7	-	9.2	280.8	5.4
7/21/2023	9:05:00 AM	175.7	-	-	301.8	4.4
7/21/2023	9:10:00 AM	173.6	-	-	278.8	4.6
7/21/2023	9:15:00 AM	168.1	-	-	346.3	2.7
7/21/2023	9:20:00 AM	163	-	-	318.6	3.7
7/21/2023	9:25:00 AM	163.2	-	-	306.8	2.6
7/21/2023	9:30:00 AM	162.1	-	-	314.6	2.5
7/21/2023	9:35:00 AM	156.1	-	-	320.2	2.6
7/21/2023	9:40:00 AM	152.7	-	-	276.5	3.1
7/21/2023	9:45:00 AM	154.9	-	-	267.6	2.3
7/21/2023	9:50:00 AM	153.5	-	-	348.6	2.9
7/21/2023	9:55:00 AM	147	-	-	351.8	2.3
7/21/2023	10:00:00 AM	146	-	9.4	287.6	3.2
7/21/2023	10:05:00 AM	145.6	-	-	294.8	2.4
7/21/2023	10:10:00 AM	141.5	-	-	231.2	4.2
7/21/2023	10:15:00 AM	138.9	-	-	208.2	3.5
7/21/2023	10:20:00 AM	141.5	-	-	291	2.1
7/21/2023	10:25:00 AM	138.4	-	-	287.4	1.7
7/21/2023	10:30:00 AM	129	-	-	269.6	2.4
7/21/2023	10:35:00 AM	129.7	-	-	281.1	4.7
7/21/2023	10:40:00 AM	135.4	-	-	334.5	1.3
7/21/2023	10:45:00 AM	132.4	-	-	313	1
7/21/2023	10:50:00 AM	124.8	-	-	330.5	1.2
7/21/2023	10:55:00 AM	127.4	-	-	287.5	1.3
7/21/2023	11:00:00 AM	132.7	-	7.4	356	1.9
7/21/2023	11:05:00 AM	128.8	-	-	276.3	2.4
7/21/2023	11:10:00 AM	125.4	-	-	271.8	3.7
7/21/2023	11:15:00 AM	129.2	-	-	237.2	0.9
7/21/2023	11:20:00 AM	127.4	-	-	322.3	2.1
7/21/2023	11:25:00 AM	120.7	-	-	311.8	1.5
7/21/2023	11:30:00 AM	115.5	-	-	347.7	2.8
7/21/2023	11:35:00 AM	113	-	-	339.7	2.8
7/21/2023	11:40:00 AM	112.5	-	-	295.8	1.3
7/21/2023	11:45:00 AM	110.9	-	-	330.5	1.1
7/21/2023	11:50:00 AM	114.8	-	-	234.2	1.9
7/21/2023	11:55:00 AM	116.4	-	-	170.2	2.7

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	12:00:00 PM	114	-	16.4	254.8	4.2
7/21/2023	12:05:00 PM	122.1	-	-	253.7	6
7/21/2023	12:10:00 PM	127.9	-	-	246.1	4.9
7/21/2023	12:15:00 PM	127.6	-	-	35.3	2.2
7/21/2023	12:20:00 PM	119.4	-	-	234.2	3.4
7/21/2023	12:25:00 PM	113.3	-	-	250.9	5.5
7/21/2023	12:30:00 PM	116.1	-	-	283.6	7.6
7/21/2023	12:35:00 PM	119.4	-	-	300.8	3.4
7/21/2023	12:40:00 PM	112	-	-	286.8	3.4
7/21/2023	12:45:00 PM	105.6	-	-	305.3	1.2
7/21/2023	12:50:00 PM	107.9	-	-	209.8	2.5
7/21/2023	12:55:00 PM	114	-	-	255.1	6.2
7/21/2023	1:00:00 PM	110.4	-	15	268.9	2.2
7/21/2023	1:05:00 PM	111.5	-	-	247.9	5
7/21/2023	1:10:00 PM	111.7	-	-	216.2	5.9
7/21/2023	1:15:00 PM	106.1	-	-	271.3	4.8
7/21/2023	1:20:00 PM	104	-	-	294.4	6.9
7/21/2023	1:25:00 PM	109.7	-	-	287.1	4.2
7/21/2023	1:30:00 PM	108.3	-	-	224.4	4.2
7/21/2023	1:35:00 PM	102.1	-	-	243.8	2.8
7/21/2023	1:40:00 PM	98.2	-	-	266	4.9
7/21/2023	1:45:00 PM	102.8	-	-	267.5	9
7/21/2023	1:50:00 PM	104.7	-	-	278.7	7.6
7/21/2023	1:55:00 PM	99.8	-	-	283	2.1
7/21/2023	2:00:00 PM	93.9	-	16	257.9	5.8
7/21/2023	2:05:00 PM	98.6	-	-	275	7.7
7/21/2023	2:10:00 PM	103.5	-	-	270.7	5.5
7/21/2023	2:15:00 PM	103.8	-	-	250.1	9.3
7/21/2023	2:20:00 PM	106.8	-	-	251.4	5.4
7/21/2023	2:25:00 PM	109.4	-	-	210.9	3.8
7/21/2023	2:30:00 PM	107.6	-	-	289.4	3.9
7/21/2023	2:35:00 PM	105.5	-	-	288.6	5
7/21/2023	2:40:00 PM	106.5	-	-	262.5	7.6
7/21/2023	2:45:00 PM	106.1	-	-	281.3	2.6
7/21/2023	2:50:00 PM	102.2	-	-	333	2.4
7/21/2023	2:55:00 PM	100.4	-	-	273.7	4.6
7/21/2023	3:00:00 PM	102.6	-	18.2	298.6	5.3
7/21/2023	3:05:00 PM	100.9	-	-	295.9	2.6
7/21/2023	3:10:00 PM	97.5	-	-	255.7	4.5
7/21/2023	3:15:00 PM	98.3	-	-	237.6	9.1
7/21/2023	3:20:00 PM	100.5	-	-	267.9	7.9
7/21/2023	3:25:00 PM	95.8	-	-	286	6.8
7/21/2023	3:30:00 PM	93.1	-	-	290.3	8.5
7/21/2023	3:35:00 PM	95.2	-	-	270	9.6
7/21/2023	3:40:00 PM	97	-	-	251.4	9.9
7/21/2023	3:45:00 PM	95.6	-	-	259.5	6.2
7/21/2023	3:50:00 PM	93.6	-	-	285	4.3
7/21/2023	3:55:00 PM	96.4	-	-	254.3	6.1

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	4:00:00 PM	93.4	-	17.5	299.8	4.3
7/21/2023	4:05:00 PM	80.5	-	-	290	9.7
7/21/2023	4:10:00 PM	61.8	-	-	282.4	8.5
7/21/2023	4:15:00 PM	53.2	-	-	275.2	7
7/21/2023	4:20:00 PM	47.1	-	-	308.4	4.8
7/21/2023	4:25:00 PM	39.4	-	-	296.7	4.6
7/21/2023	4:30:00 PM	40.8	-	-	287.2	10
7/21/2023	4:35:00 PM	46.8	-	-	292.2	7.8
7/21/2023	4:40:00 PM	47.5	-	-	291.1	6.6
7/21/2023	4:45:00 PM	46.5	-	-	304.9	3.5
7/21/2023	4:50:00 PM	49.2	-	-	302.2	7.4
7/21/2023	4:55:00 PM	50.2	-	-	307.5	6.9
7/21/2023	5:00:00 PM	50.4	-	17.7	288.2	8.7
7/21/2023	5:05:00 PM	40.8	-	-	277.6	9.3
7/21/2023	5:10:00 PM	35.5	-	-	293.8	8.5
7/21/2023	5:15:00 PM	36.5	-	-	304.2	6.1
7/21/2023	5:20:00 PM	33	-	-	301.7	10.2
7/21/2023	5:25:00 PM	31.7	-	-	305.4	6.1
7/21/2023	5:30:00 PM	30.8	-	-	322.5	6.1
7/21/2023	5:35:00 PM	25.7	-	-	306.1	6.1
7/21/2023	5:40:00 PM	20.9	-	-	304.3	5.8
7/21/2023	5:45:00 PM	22.5	-	-	305.3	4.8
7/21/2023	5:50:00 PM	27.4	-	-	303.7	3.8
7/21/2023	5:55:00 PM	31.3	-	-	295	9.7
7/21/2023	6:00:00 PM	32.9	-	13.8	290.8	9.5
7/21/2023	6:05:00 PM	37.1	-	-	290	7.7
7/21/2023	6:10:00 PM	40	-	-	284.7	8.5
7/21/2023	6:15:00 PM	37.7	-	-	297.2	6.9
7/21/2023	6:20:00 PM	36.4	-	-	290.4	8.2
7/21/2023	6:25:00 PM	40.3	-	-	303.2	3.5
7/21/2023	6:30:00 PM	40.6	-	-	305.6	3.3
7/21/2023	6:35:00 PM	35.1	-	-	298.4	5
7/21/2023	6:40:00 PM	34.7	-	-	336	2.3
7/21/2023	6:45:00 PM	40.4	-	-	352.5	3.6
7/21/2023	6:50:00 PM	41.5	-	-	352.2	4.5
7/21/2023	6:55:00 PM	39.3	-	-	350.7	4.4
7/21/2023	7:00:00 PM	37.8	-	6.4	346.5	0.9
7/21/2023	7:05:00 PM	37.7	-	-	12.3	2.9
7/21/2023	7:10:00 PM	39.1	-	-	27.8	2.1
7/21/2023	7:15:00 PM	40.7	-	-	32.3	1.8
7/21/2023	7:20:00 PM	43.6	-	-	37.5	2.1
7/21/2023	7:25:00 PM	47.4	-	-	31.4	2.6
7/21/2023	7:30:00 PM	49.7	-	-	34.7	2.4
7/21/2023	7:35:00 PM	50.4	-	-	53.8	2.5
7/21/2023	7:40:00 PM	52.9	-	-	69.9	2.6
7/21/2023	7:45:00 PM	53.3	-	-	63.4	3.8
7/21/2023	7:50:00 PM	51.5	-	-	65.7	3.7
7/21/2023	7:55:00 PM	51.2	-	-	65.9	3.8

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/21/2023	8:00:00 PM	53	-	14.3	70.3	3.1
7/21/2023	8:05:00 PM	53.1	-	-	77.8	3.9
7/21/2023	8:10:00 PM	51.6	-	-	74.9	4
7/21/2023	8:15:00 PM	52.4	-	-	71.9	4.9
7/21/2023	8:20:00 PM	55.4	-	-	70.8	7.6
7/21/2023	8:25:00 PM	60	-	-	36.2	8.8
7/21/2023	8:30:00 PM	77.4	-	-	53.3	8.6
7/21/2023	8:35:00 PM	104.6	-	-	63.5	6.9
7/21/2023	8:40:00 PM	124.8	-	-	52.6	7.4
7/21/2023	8:45:00 PM	135.9	-	-	67.9	6.5
7/21/2023	8:50:00 PM	132.3	-	-	86.2	4
7/21/2023	8:55:00 PM	123.3	-	-	107	3.5
7/21/2023	9:00:00 PM	113.3	-	14.4	126.8	3.4
7/21/2023	9:05:00 PM	103.9	-	-	113.9	3.7
7/21/2023	9:10:00 PM	96	-	-	97.3	3.9
7/21/2023	9:15:00 PM	91.5	-	-	88.6	3.7
7/21/2023	9:20:00 PM	88.1	-	-	81.7	1.3
7/21/2023	9:25:00 PM	85.1	-	-	185.3	0.6
7/21/2023	9:30:00 PM	81	-	-	72.2	2.9
7/21/2023	9:35:00 PM	82.7	-	-	85.1	5.9
7/21/2023	9:40:00 PM	86.7	-	-	96.1	8.8
7/21/2023	9:45:00 PM	88.2	-	-	105.8	7.7
7/21/2023	9:50:00 PM	87.1	-	-	106.9	8.6
7/21/2023	9:55:00 PM	89.2	-	-	89.1	7.8
7/21/2023	10:00:00 PM	89	-	33.9	73.7	8
7/21/2023	10:05:00 PM	83.2	-	-	89.5	6.8
7/21/2023	10:10:00 PM	72.4	-	-	106.8	8.5
7/21/2023	10:15:00 PM	69.6	-	-	123.7	9.3
7/21/2023	10:20:00 PM	80.3	-	-	146	16.2
7/21/2023	10:25:00 PM	114.8	-	-	157.1	19.1
7/21/2023	10:30:00 PM	279.9	-	-	168.8	16.5
7/21/2023	10:35:00 PM	614.5	-	-	183	14.7
7/21/2023	10:40:00 PM	745.7	-	-	196.9	12.6
7/21/2023	10:45:00 PM	742.2	-	-	188.5	11.1
7/21/2023	10:50:00 PM	693.9	-	-	181.3	11.9
7/21/2023	10:55:00 PM	675.2	-	-	206.1	12.9
7/21/2023	11:00:00 PM	651.9	-	24.1	203	12.6
7/21/2023	11:05:00 PM	575.5	-	-	204.9	13.2
7/21/2023	11:10:00 PM	476	-	-	202.3	13.4
7/21/2023	11:15:00 PM	386.9	-	-	191	8.3
7/21/2023	11:20:00 PM	310.6	-	-	175.8	8.6
7/21/2023	11:25:00 PM	239.5	-	-	174.5	7.8
7/21/2023	11:30:00 PM	183.8	-	-	171.2	11.2
7/21/2023	11:35:00 PM	145.7	-	-	165.4	10.7
7/21/2023	11:40:00 PM	118.7	-	-	170.9	11.3
7/21/2023	11:45:00 PM	99	-	-	182.3	12.3
7/21/2023	11:50:00 PM	89.2	-	-	176.1	12.3
7/21/2023	11:55:00 PM	82.4	-	-	164.4	8.1

Maricopa County Air Quality Department Monitoring Station Data (07-21-2023)

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (hourly, MPH)	Wind Direction (Degree)	Windspeed (MPH)
	Average	114.6586806	#DIV/0!	13.03333333	195.9385417	4.747916667
	Max	745.7	#DIV/0!	33.9	358.6	19.1
	Max Hour	360257.3448	6592.675765	24.36151846	6493.778775	23.67709337
	Min	20.9	0	3.9	0	0.3
	Count	288	288	288	288	288
	Total					

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/26/2023	12:00:00 AM	71.7	142.6	3.4	142.7	3.4
7/26/2023	12:05:00 AM	66.2	145.2	3.2	145.8	3.2
7/26/2023	12:10:00 AM	61.4	161	2.6	160.7	2.6
7/26/2023	12:15:00 AM	56	169.6	3.2	169.8	3.2
7/26/2023	12:20:00 AM	48.8	180.7	2.4	180.6	2.3
7/26/2023	12:25:00 AM	42.1	186.8	2.3	186.5	2.3
7/26/2023	12:30:00 AM	39.2	194.7	3.5	194.8	3.4
7/26/2023	12:35:00 AM	39.5	197.4	2.5	197.2	2.4
7/26/2023	12:40:00 AM	38.4	169.9	1.8	171	1.8
7/26/2023	12:45:00 AM	36.5	129.6	2.1	129.3	2
7/26/2023	12:50:00 AM	36.2	90.5	3.2	89.7	3.2
7/26/2023	12:55:00 AM	38.2	84.8	4.7	84.4	4.6
7/26/2023	1:00:00 AM	39.1	82.5	5.3	82.4	5.2
7/26/2023	1:05:00 AM	37.5	116.8	2.7	118	2.6
7/26/2023	1:10:00 AM	34.9	141.8	2.3	142.6	2.3
7/26/2023	1:15:00 AM	35.5	110.6	1.6	109.1	1.5
7/26/2023	1:20:00 AM	37.9	149.1	1.4	148.7	1.3
7/26/2023	1:25:00 AM	37.4	139.5	1.7	138.8	1.7
7/26/2023	1:30:00 AM	35.7	120.1	2.8	120.1	2.8
7/26/2023	1:35:00 AM	36.2	138.4	3.8	138.6	3.8
7/26/2023	1:40:00 AM	39.6	91.3	2.8	89.3	2.7
7/26/2023	1:45:00 AM	41.5	128.3	3.9	130.3	3.8
7/26/2023	1:50:00 AM	40	133.6	4.4	133.5	4.4
7/26/2023	1:55:00 AM	38.5	158.7	3.1	158	3.1
7/26/2023	2:00:00 AM	39.9	176.1	3.3	175.4	3.3
7/26/2023	2:05:00 AM	42.4	171.9	2.7	172.2	2.7
7/26/2023	2:10:00 AM	42	156.9	1.4	158.6	1.4
7/26/2023	2:15:00 AM	39.5	139	1.1	139.2	1.1
7/26/2023	2:20:00 AM	38.9	138.7	1.8	138.4	1.8
7/26/2023	2:25:00 AM	41.1	152.7	2	153.6	1.9
7/26/2023	2:30:00 AM	41.9	163.6	2.8	163.9	2.8
7/26/2023	2:35:00 AM	40.1	156.5	2	157.5	2
7/26/2023	2:40:00 AM	38	168.9	1.5	172.7	1.3
7/26/2023	2:45:00 AM	38.3	216.1	2.4	216.5	2.4
7/26/2023	2:50:00 AM	39	215.2	2.6	215.3	2.6
7/26/2023	2:55:00 AM	37.7	200.8	1.9	209.4	1.9
7/26/2023	3:00:00 AM	35.5	138.7	1.3	138.4	1.2
7/26/2023	3:05:00 AM	35.4	154.2	1.7	154.3	1.6
7/26/2023	3:10:00 AM	36.9	180.6	1.3	177.8	1.3
7/26/2023	3:15:00 AM	36.8	203.4	0	198.2	0.3
7/26/2023	3:20:00 AM	34.9	185.5	1	191.2	1
7/26/2023	3:25:00 AM	33.1	185.1	0	214.1	0.4
7/26/2023	3:30:00 AM	34.5	47.3	1.3	38.5	1.2
7/26/2023	3:35:00 AM	36.6	32	3.6	32.6	3.6
7/26/2023	3:40:00 AM	36.7	38.7	4.2	38.5	4.2
7/26/2023	3:45:00 AM	37.2	47.4	2.8	47.4	2.7
7/26/2023	3:50:00 AM	41.6	63.3	2.8	64	2.8
7/26/2023	3:55:00 AM	47.8	80.5	2.1	79.8	2
7/26/2023	4:00:00 AM	51.9	87.6	1.3	87.7	1.2
7/26/2023	4:05:00 AM	53.2	34.3	1.6	31.4	1.5
7/26/2023	4:10:00 AM	53.8	35.9	2.7	36.1	2.7
7/26/2023	4:15:00 AM	55.2	55.4	3.3	55.8	3.3
7/26/2023	4:20:00 AM	59.6	65.9	3.6	64.6	3.6

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/26/2023	4:25:00 AM	62.5	80.1	2.8	81.4	2.7
7/26/2023	4:30:00 AM	60.4	82.8	4.3	83.9	4.3
7/26/2023	4:35:00 AM	57	91.6	5.1	91.3	5
7/26/2023	4:40:00 AM	55.5	84.3	5	83.8	4.9
7/26/2023	4:45:00 AM	54.6	86.9	4.7	86.4	4.6
7/26/2023	4:50:00 AM	54.5	107.1	5	107.8	4.9
7/26/2023	4:55:00 AM	52.5	113.9	6.5	113.3	6.4
7/26/2023	5:00:00 AM	49.3	111	7.5	111	7.3
7/26/2023	5:05:00 AM	54.1	107.7	6.6	107.6	6.6
7/26/2023	5:10:00 AM	66.2	108.4	6.1	108.5	6
7/26/2023	5:15:00 AM	79.6	106.2	4.2	107.1	4.2
7/26/2023	5:20:00 AM	86.5	124.1	3.1	123.8	3
7/26/2023	5:25:00 AM	98	119	3.4	118.9	3.3
7/26/2023	5:30:00 AM	106.7	96.5	2.1	97.7	2
7/26/2023	5:35:00 AM	114.7	75.6	2.6	75.8	2.5
7/26/2023	5:40:00 AM	116.7	66.6	2.1	66.4	2.1
7/26/2023	5:45:00 AM	113.6	60.9	4	60.9	4
7/26/2023	5:50:00 AM	113.7	63.7	4.5	63.6	4.5
7/26/2023	5:55:00 AM	111.4	68	4.8	68.8	4.7
7/26/2023	6:00:00 AM	109.1	71.6	4	71.4	3.9
7/26/2023	6:05:00 AM	128.5	82.1	4.9	82.4	4.8
7/26/2023	6:10:00 AM	134.5	84.6	4.4	84.5	4.3
7/26/2023	6:15:00 AM	130.3	92.5	4.8	93	4.7
7/26/2023	6:20:00 AM	126.3	94.5	5.7	95	5.6
7/26/2023	6:25:00 AM	131.2	93.7	6.1	94	6
7/26/2023	6:30:00 AM	140.9	97.3	5.8	97.8	5.7
7/26/2023	6:35:00 AM	141.1	96.3	8.2	96.5	8.1
7/26/2023	6:40:00 AM	143.5	104	7.5	104.2	7.4
7/26/2023	6:45:00 AM	150.8	105.3	7.5	105.4	7.4
7/26/2023	6:50:00 AM	154.8	113.3	6.8	113.3	6.7
7/26/2023	6:55:00 AM	149.5	112.8	6.3	112.5	6.2
7/26/2023	7:00:00 AM	140.2	109.6	6	109.8	5.9
7/26/2023	7:05:00 AM	134.5	113.7	6.2	113.5	6.1
7/26/2023	7:10:00 AM	141.9	109.9	7	109.7	6.9
7/26/2023	7:15:00 AM	177	109.4	7.3	109.4	7.2
7/26/2023	7:20:00 AM	193	115.3	7.2	115.4	7.1
7/26/2023	7:25:00 AM	183.4	120.4	7.6	120.5	7.5
7/26/2023	7:30:00 AM	170.7	120.5	7.9	120.7	7.9
7/26/2023	7:35:00 AM	154.7	117.7	7.1	118.9	7
7/26/2023	7:40:00 AM	133.9	122.7	4.5	122.8	4.4
7/26/2023	7:45:00 AM	115.3	125	4.3	126.1	4.1
7/26/2023	7:50:00 AM	104.9	116.7	5.4	116.9	5.1
7/26/2023	7:55:00 AM	97.8	139.5	5.2	138.9	5.1
7/26/2023	8:00:00 AM	88.3	128.7	4.5	128.4	4.4
7/26/2023	8:05:00 AM	80.6	118.7	3.4	118	3.2
7/26/2023	8:10:00 AM	80.1	140.7	2.6	140.8	2.4
7/26/2023	8:15:00 AM	79.6	151.4	3.6	151.2	3.5
7/26/2023	8:20:00 AM	74.4	185.9	3.2	184.9	3.1
7/26/2023	8:25:00 AM	69.8	163.3	2.3	161	2.2
7/26/2023	8:30:00 AM	74	146.7	2.8	147.3	2.6
7/26/2023	8:35:00 AM	75.4	139	2.7	139.3	2.7
7/26/2023	8:40:00 AM	73.4	177.7	2.7	182.5	2.4
7/26/2023	8:45:00 AM	70.7	199.6	2.6	202.4	2.4

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/26/2023	8:50:00 AM	73.4	220.8	1.6	216.1	1.4
7/26/2023	8:55:00 AM	74.4	210.2	3.6	210.1	3.3
7/26/2023	9:00:00 AM	70.3	191.9	2.6	190.8	2.5
7/26/2023	9:05:00 AM	68.9	228.3	4.6	227.7	4.4
7/26/2023	9:10:00 AM	74.3	232.9	4.1	234.7	4
7/26/2023	9:15:00 AM	73.2	217.4	3.2	221.6	2.8
7/26/2023	9:20:00 AM	65	231.4	5.6	230.8	5.4
7/26/2023	9:25:00 AM	60.7	231.6	6.2	231.1	6.1
7/26/2023	9:30:00 AM	61.1	233.8	6.5	233.7	6.3
7/26/2023	9:35:00 AM	57.2	224.1	6.4	225.9	6.1
7/26/2023	9:40:00 AM	51.1	228	6.7	228.8	6.6
7/26/2023	9:45:00 AM	50.6	228.7	6.6	229.9	6.4
7/26/2023	9:50:00 AM	51.5	186.2	4.1	189.4	3.8
7/26/2023	9:55:00 AM	46.5	181.7	4.1	174.2	3.7
7/26/2023	10:00:00 AM	44.1	212.4	6	214	5.5
7/26/2023	10:05:00 AM	47.3	231.1	7.9	230.3	7.7
7/26/2023	10:10:00 AM	47.9	235.5	5.7	234.5	5.6
7/26/2023	10:15:00 AM	45.5	225	4.2	224.4	4
7/26/2023	10:20:00 AM	47.7	200.5	5.7	203.3	5.5
7/26/2023	10:25:00 AM	55.6	157.2	3.2	162.8	2.8
7/26/2023	10:30:00 AM	57.8	202.7	5.5	205.2	5.2
7/26/2023	10:35:00 AM	56.7	213.3	4.1	215.7	3.6
7/26/2023	10:40:00 AM	61	216.4	4.6	216.3	4
7/26/2023	10:45:00 AM	65.9	210.1	5.5	209.8	5.3
7/26/2023	10:50:00 AM	64.3	180.1	5.7	182.9	5
7/26/2023	10:55:00 AM	62.1	200.1	4.8	196	4.3
7/26/2023	11:00:00 AM	65.3	181.3	4.2	176	3.3
7/26/2023	11:05:00 AM	65.4	132.7	3.2	131.7	2.9
7/26/2023	11:10:00 AM	59.4	231.9	7.7	234.6	7.5
7/26/2023	11:15:00 AM	56.8	242.8	4.8	242.9	4.5
7/26/2023	11:20:00 AM	59.7	192.3	4.1	225.3	3.5
7/26/2023	11:25:00 AM	59.5	200.7	2.8	228.8	2.5
7/26/2023	11:30:00 AM	56.3	233.7	1.6	242.1	1.1
7/26/2023	11:35:00 AM	56.6	252.9	5.7	250.6	5.4
7/26/2023	11:40:00 AM	61.6	229	5.2	229	5
7/26/2023	11:45:00 AM	56.9	240.2	5.4	238.1	5.2
7/26/2023	11:50:00 AM	51.1	239.8	7.6	237.6	6.9
7/26/2023	11:55:00 AM	54.3	216.3	6.1	216.8	6
7/26/2023	12:00:00 PM	54.2	250.4	7.5	249.8	7
7/26/2023	12:05:00 PM	49.1	290	8.7	290.3	8.6
7/26/2023	12:10:00 PM	47	308.5	4.5	306.4	4.3
7/26/2023	12:15:00 PM	47.1	241.5	7.3	236.5	6
7/26/2023	12:20:00 PM	45.2	256.6	4.8	249.6	2.7
7/26/2023	12:25:00 PM	40.6	277.3	5.2	277	4.8
7/26/2023	12:30:00 PM	44	250.2	6.7	252.4	6.1
7/26/2023	12:35:00 PM	49.1	270.6	7.2	274.7	6.9
7/26/2023	12:40:00 PM	46.6	233.5	6.8	234.1	6.6
7/26/2023	12:45:00 PM	43.5	244.1	6.8	241.2	6.3
7/26/2023	12:50:00 PM	46.2	287.9	5.6	287.9	5.3
7/26/2023	12:55:00 PM	46.3	297.8	4.1	296.8	3.7
7/26/2023	1:00:00 PM	40.3	301.3	4.5	297.7	3.4
7/26/2023	1:05:00 PM	40.9	287.7	4.5	281.4	4
7/26/2023	1:10:00 PM	44.7	302.2	4.2	300.9	3.6

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/26/2023	1:15:00 PM	42.2	294.3	7	283.4	6.6
7/26/2023	1:20:00 PM	39.4	282.8	7.6	277.3	7.1
7/26/2023	1:25:00 PM	44.4	252.5	6.4	257.7	5.7
7/26/2023	1:30:00 PM	47.4	286.1	6.8	283.6	6.6
7/26/2023	1:35:00 PM	44.4	285.2	9.2	286.6	8.8
7/26/2023	1:40:00 PM	44.4	300.6	6.3	299.1	6.1
7/26/2023	1:45:00 PM	48.6	256.6	7.9	255.2	7.6
7/26/2023	1:50:00 PM	47	258.5	6.9	258.2	6.6
7/26/2023	1:55:00 PM	42.1	300.2	7.3	291.5	6.9
7/26/2023	2:00:00 PM	42.8	315.8	7.7	304.2	6.8
7/26/2023	2:05:00 PM	47.3	286.3	8.8	285	8.2
7/26/2023	2:10:00 PM	46.7	308.7	8.7	304.1	8.4
7/26/2023	2:15:00 PM	45.2	294.3	9.1	293.8	8.9
7/26/2023	2:20:00 PM	45.9	286.5	8.9	285	8.5
7/26/2023	2:25:00 PM	45.8	283	10.1	284.1	9.9
7/26/2023	2:30:00 PM	41.7	283.9	7	283.6	6.8
7/26/2023	2:35:00 PM	41	279.9	8.3	282.8	7.9
7/26/2023	2:40:00 PM	44.1	304.7	6.6	300	6.4
7/26/2023	2:45:00 PM	42.7	291.7	5.8	288.4	5.4
7/26/2023	2:50:00 PM	38.8	289.4	10.2	290.8	10
7/26/2023	2:55:00 PM	42.1	282.2	7.8	278.6	7.6
7/26/2023	3:00:00 PM	44.8	275.2	10.6	276.5	10
7/26/2023	3:05:00 PM	41.7	280.6	10.8	281.2	10.3
7/26/2023	3:10:00 PM	40.4	287.5	11.4	287.8	11.2
7/26/2023	3:15:00 PM	48.7	257.9	9.2	262.4	8.8
7/26/2023	3:20:00 PM	64.4	265.6	11.1	266	10.4
7/26/2023	3:25:00 PM	64	269.5	10.2	269.2	9.9
7/26/2023	3:30:00 PM	61.3	276.2	10.7	275.4	10.5
7/26/2023	3:35:00 PM	58.8	278.2	7.8	278	7.6
7/26/2023	3:40:00 PM	52.4	259.5	7.4	257.4	7.1
7/26/2023	3:45:00 PM	44.9	279.4	9.2	282.2	8.7
7/26/2023	3:50:00 PM	44	285.1	12.5	283.3	12.3
7/26/2023	3:55:00 PM	44.6	289.3	8.8	287.1	8.5
7/26/2023	4:00:00 PM	40.6	305.2	8.8	300.2	8.4
7/26/2023	4:05:00 PM	38.8	281.4	9.3	283.4	9
7/26/2023	4:10:00 PM	39.9	283.6	11	283.2	10.5
7/26/2023	4:15:00 PM	39.8	304	7.3	296.3	6.9
7/26/2023	4:20:00 PM	34.7	281.1	10.2	280.6	9.9
7/26/2023	4:25:00 PM	33.6	274.3	9	275.4	8.5
7/26/2023	4:30:00 PM	34.9	273.8	9.3	274.5	8.8
7/26/2023	4:35:00 PM	32.6	273.1	8.9	274.7	8.4
7/26/2023	4:40:00 PM	29.2	292.7	11.1	291.5	10.8
7/26/2023	4:45:00 PM	31.5	317.8	4.6	304.7	4
7/26/2023	4:50:00 PM	32.1	315.1	6.9	301.3	6.4
7/26/2023	4:55:00 PM	27.3	289.4	8.3	288.6	8
7/26/2023	5:00:00 PM	24.6	300.8	8.9	299.3	8.7
7/26/2023	5:05:00 PM	26.7	273.3	9.3	274.5	9
7/26/2023	5:10:00 PM	27.8	290.4	8.1	290.7	8
7/26/2023	5:15:00 PM	25	276	7.5	278.9	7
7/26/2023	5:20:00 PM	24.9	265.2	7.2	265.4	6.9
7/26/2023	5:25:00 PM	28	293.8	7.4	292.3	7.2
7/26/2023	5:30:00 PM	27.5	308.3	7.9	302.6	7.6
7/26/2023	5:35:00 PM	24.7	305.5	5.4	302.8	5.2

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/26/2023	5:40:00 PM	26.1	293.2	6.1	289.5	5.9
7/26/2023	5:45:00 PM	28.6	293.5	6.9	290.9	6.7
7/26/2023	5:50:00 PM	26.2	287.4	7	285.6	6.8
7/26/2023	5:55:00 PM	24	282.9	9.8	282.8	9.6
7/26/2023	6:00:00 PM	25.8	294	8.9	294.1	8.8
7/26/2023	6:05:00 PM	26.9	292.3	8.4	292.5	8.3
7/26/2023	6:10:00 PM	24.4	288.1	8	288.4	7.9
7/26/2023	6:15:00 PM	23.9	302.6	6	301.7	5.7
7/26/2023	6:20:00 PM	26.4	295.6	8.6	295.7	8.5
7/26/2023	6:25:00 PM	26.6	290.6	7.1	290.8	7
7/26/2023	6:30:00 PM	24.1	285	6.5	285.6	6.4
7/26/2023	6:35:00 PM	25.1	289.2	8.3	288.2	8.2
7/26/2023	6:40:00 PM	28.4	281.1	6.6	281.3	6.4
7/26/2023	6:45:00 PM	27.8	284.3	6.9	284.8	6.8
7/26/2023	6:50:00 PM	25.1	280	7.1	279.6	7
7/26/2023	6:55:00 PM	25.5	277.6	7.3	277.4	7.3
7/26/2023	7:00:00 PM	28.6	282.9	7.2	283.1	7
7/26/2023	7:05:00 PM	27.3	276	5.7	275.9	5.6
7/26/2023	7:10:00 PM	25.2	271.8	6.3	271.5	6.3
7/26/2023	7:15:00 PM	26.5	274.1	5.9	274	5.8
7/26/2023	7:20:00 PM	28.5	277.7	5.6	278.3	5.5
7/26/2023	7:25:00 PM	27	279.6	5.7	279.3	5.6
7/26/2023	7:30:00 PM	24.9	280.6	6.2	280.3	6.1
7/26/2023	7:35:00 PM	27.4	277.6	5	277.6	4.9
7/26/2023	7:40:00 PM	29.7	275	5.1	274.8	5
7/26/2023	7:45:00 PM	28	273.5	5.8	273.6	5.7
7/26/2023	7:50:00 PM	25.5	272.5	5.3	272.3	5.3
7/26/2023	7:55:00 PM	27.2	265.2	5.4	266.1	5.3
7/26/2023	8:00:00 PM	31.2	255.2	6.3	255.3	6.3
7/26/2023	8:05:00 PM	32.1	260.3	6.9	260.4	6.7
7/26/2023	8:10:00 PM	32	261.4	5.7	261	5.6
7/26/2023	8:15:00 PM	35.8	265.6	3.8	265.9	3.7
7/26/2023	8:20:00 PM	39.4	262.7	3.9	262.6	3.9
7/26/2023	8:25:00 PM	38.1	257	4	258.1	3.9
7/26/2023	8:30:00 PM	36	228.6	3.7	230.6	3.3
7/26/2023	8:35:00 PM	40.2	240.1	4	240.1	3.9
7/26/2023	8:40:00 PM	46	242.6	4.9	242	4.8
7/26/2023	8:45:00 PM	44.1	245.2	5.2	245.9	5.1
7/26/2023	8:50:00 PM	40.2	247.5	4.6	248	4.5
7/26/2023	8:55:00 PM	40.8	238.9	5.2	238.9	5.1
7/26/2023	9:00:00 PM	42.4	230.9	5.5	231	5.4
7/26/2023	9:05:00 PM	40.7	205.1	3.7	205.2	3.7
7/26/2023	9:10:00 PM	39.8	198.4	5.4	198.6	5.3
7/26/2023	9:15:00 PM	43	182.2	3.9	183.4	3.7
7/26/2023	9:20:00 PM	48.1	163.3	8.7	164.4	8.4
7/26/2023	9:25:00 PM	54.5	172.2	16.8	171	16
7/26/2023	9:30:00 PM	93.9	175.3	16.4	176.1	15.8
7/26/2023	9:35:00 PM	293.3	141	16.3	140.5	15.9
7/26/2023	9:40:00 PM	1169.5	141.8	23.8	141.5	23
7/26/2023	9:45:00 PM	2894.2	127.6	31.1	128.1	30.5
7/26/2023	9:50:00 PM	4555	130	29.1	130	28.8
7/26/2023	9:55:00 PM	5125	130.4	29.5	129.9	29.2
7/26/2023	10:00:00 PM	4617.3	126.8	27.1	126.7	26.7

Site: Higley						
Date	Time	PM_{10} (µg/m_3)	Sustained Wind Direction (Degree)	Sustained Windspeed (MPH)	Wind Direction (Degree)	Windspeed (MPH)
7/26/2023	10:05:00 PM	3766.2	118.3	27.8	118.4	27.4
7/26/2023	10:10:00 PM	2893.5	118.5	26.4	118.4	25.9
7/26/2023	10:15:00 PM	2135.7	129.7	21.2	130.2	20.7
7/26/2023	10:20:00 PM	1550	139.1	19.3	139.2	19
7/26/2023	10:25:00 PM	1107.5	150.5	10.5	147.4	9.9
7/26/2023	10:30:00 PM	786.5	154.6	9.3	156	8.7
7/26/2023	10:35:00 PM	555.4	124.6	16.2	124.3	15.8
7/26/2023	10:40:00 PM	388.7	119.7	19.1	119.6	18.7
7/26/2023	10:45:00 PM	274	123.8	14.6	122.9	14.2
7/26/2023	10:50:00 PM	194.5	119	5.5	122.7	0.6
7/26/2023	10:55:00 PM	142.3	4.2	6.4	1.9	5.9
7/26/2023	11:00:00 PM	115.8	12.6	13.1	12.2	11.9
7/26/2023	11:05:00 PM	106.6	24.1	14.5	24.5	14.1
7/26/2023	11:10:00 PM	99	44.6	9.9	41.4	9.4
7/26/2023	11:15:00 PM	77.3	334.1	3.2	324.4	1.1
7/26/2023	11:20:00 PM	68.8	63.6	5.3	95	3.2
7/26/2023	11:25:00 PM	50.8	135.8	13.5	136.7	13
7/26/2023	11:30:00 PM	33.1	121.6	18.6	122.2	18.4
7/26/2023	11:35:00 PM	24.1	108.5	13.6	109	13.4
7/26/2023	11:40:00 PM	22.1	116.5	12.1	116.5	11.9
7/26/2023	11:45:00 PM	17.4	100.3	15.3	100.6	15
7/26/2023	11:50:00 PM	10.6	87.7	20.1	87.5	19.3
7/26/2023	11:55:00 PM	20.4	68.6	20.4	68.8	20.1
	Average	165.3	207	6.6	205.2	1.4
	Max	5125	334.1	31.1	324.4	30.5
	Max Hour	360257.3448	6592.675765	24.36151846	6493.778775	23.67709337
	Min	10.6	4.2	0	1.9	0.3
	Count	288	288	288	288	288
	Total	47622.7	55860.8	1919.5	55872.7	1844.3

Site: Higley				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	12:00:00 AM	50	218.5	1.1
7/14/2024	12:05:00 AM	45.8	203.2	0.4
7/14/2024	12:10:00 AM	43.3	197.8	2.3
7/14/2024	12:15:00 AM	51	187.2	2.9
7/14/2024	12:20:00 AM	51.9	196.7	2.8
7/14/2024	12:25:00 AM	44.8	204.5	3.4
7/14/2024	12:30:00 AM	52.1	216.6	3.5
7/14/2024	12:35:00 AM	58.8	215.3	3.9
7/14/2024	12:40:00 AM	52.2	219.6	4.8
7/14/2024	12:45:00 AM	53.8	202.2	4.1
7/14/2024	12:50:00 AM	59	192.7	4.3
7/14/2024	12:55:00 AM	60	194.3	4.4
7/14/2024	1:00:00 AM	71.5	193.1	3.2
7/14/2024	1:05:00 AM	77.9	185	2
7/14/2024	1:10:00 AM	73.6	161.6	1.6
7/14/2024	1:15:00 AM	73.7	158	2.6
7/14/2024	1:20:00 AM	79.1	161.9	2.6
7/14/2024	1:25:00 AM	72.4	159.8	3.6
7/14/2024	1:30:00 AM	65.9	170.9	3.3
7/14/2024	1:35:00 AM	64.7	188.2	2.9
7/14/2024	1:40:00 AM	61	194.5	3.3
7/14/2024	1:45:00 AM	52	196.5	2.9
7/14/2024	1:50:00 AM	53.9	170.7	3.3
7/14/2024	1:55:00 AM	57.9	168.6	3.7
7/14/2024	2:00:00 AM	52	158.7	4.3
7/14/2024	2:05:00 AM	59	167.1	4.1
7/14/2024	2:10:00 AM	65.8	180.3	3.7
7/14/2024	2:15:00 AM	63.2	195.1	5
7/14/2024	2:20:00 AM	64.8	193.8	5.9
7/14/2024	2:25:00 AM	65.7	187.2	6.1
7/14/2024	2:30:00 AM	56.2	187.1	7
7/14/2024	2:35:00 AM	49	193.3	8.7
7/14/2024	2:40:00 AM	46.1	204.1	8.8
7/14/2024	2:45:00 AM	38.6	203	8.4
7/14/2024	2:50:00 AM	42.3	209.5	10.9
7/14/2024	2:55:00 AM	49.4	215.2	11.3
7/14/2024	3:00:00 AM	46.7	226.5	11.6
7/14/2024	3:05:00 AM	62.2	226.5	10.9
7/14/2024	3:10:00 AM	68.9	219.3	9.5
7/14/2024	3:15:00 AM	59.8	222.9	8
7/14/2024	3:20:00 AM	55.8	214.6	7.5
7/14/2024	3:25:00 AM	54	191.6	6
7/14/2024	3:30:00 AM	45.4	199.8	7.3

Site: Higley				
Date	Time	PM_{10} ($\mu g/m_3$)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	3:35:00 AM	58.8	198.2	6.2
7/14/2024	3:40:00 AM	73.6	202.4	6
7/14/2024	3:45:00 AM	84.2	200.3	5.2
7/14/2024	3:50:00 AM	91.9	199.2	5.8
7/14/2024	3:55:00 AM	97.5	197.3	5.2
7/14/2024	4:00:00 AM	100.2	200.3	4.5
7/14/2024	4:05:00 AM	95.7	200.5	5.6
7/14/2024	4:10:00 AM	98.2	203.8	5.4
7/14/2024	4:15:00 AM	95.6	219.3	4.9
7/14/2024	4:20:00 AM	85.6	208.4	4.8
7/14/2024	4:25:00 AM	83.9	187.6	3.6
7/14/2024	4:30:00 AM	81.3	198.4	3.5
7/14/2024	4:35:00 AM	67	177.1	3.1
7/14/2024	4:40:00 AM	64.7	202.2	4
7/14/2024	4:45:00 AM	63.6	203.8	4.2
7/14/2024	4:50:00 AM	56.3	199.1	3.8
7/14/2024	4:55:00 AM	48.2	196.8	4.3
7/14/2024	5:00:00 AM	44.8	195.1	5.7
7/14/2024	5:05:00 AM	43.2	197.1	4.4
7/14/2024	5:10:00 AM	35.3	193.7	3.4
7/14/2024	5:15:00 AM	36.3	209.4	4
7/14/2024	5:20:00 AM	40.3	209.6	3.8
7/14/2024	5:25:00 AM	30.9	283.9	2.1
7/14/2024	5:30:00 AM	35.6	282.7	2
7/14/2024	5:35:00 AM	39.5	235.4	3.7
7/14/2024	5:40:00 AM	35.4	263.7	1.7
7/14/2024	5:45:00 AM	30.2	345.7	1.1
7/14/2024	5:50:00 AM	32	357.8	1.4
7/14/2024	5:55:00 AM	33.9	171.4	0.7
7/14/2024	6:00:00 AM	25.4	164.1	4.9
7/14/2024	6:05:00 AM	39	169.7	4.9
7/14/2024	6:10:00 AM	48.4	209	3.3
7/14/2024	6:15:00 AM	31.9	210.8	2.9
7/14/2024	6:20:00 AM	29.1	218.7	2.9
7/14/2024	6:25:00 AM	35	211.8	2.5
7/14/2024	6:30:00 AM	31.4	197.6	2
7/14/2024	6:35:00 AM	33.3	224.3	2.7
7/14/2024	6:40:00 AM	40.1	225.5	4.4
7/14/2024	6:45:00 AM	35.4	207.7	2.9
7/14/2024	6:50:00 AM	29.8	203.5	2.7
7/14/2024	6:55:00 AM	36.2	200.5	1.5
7/14/2024	7:00:00 AM	39.3	202.1	1.9
7/14/2024	7:05:00 AM	32.5	199.2	2

Site: Higley				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	7:10:00 AM	37.7	216.5	1.3
7/14/2024	7:15:00 AM	43.7	142.1	1
7/14/2024	7:20:00 AM	38.7	181.5	0.7
7/14/2024	7:25:00 AM	47.8	124.9	1.2
7/14/2024	7:30:00 AM	52.1	55.2	1.1
7/14/2024	7:35:00 AM	48.3	18.2	1.9
7/14/2024	7:40:00 AM	52	29.2	2.7
7/14/2024	7:45:00 AM	62.6	350.6	4.1
7/14/2024	7:50:00 AM	44.6	333.7	2
7/14/2024	7:55:00 AM	35.8	20.5	1.3
7/14/2024	8:00:00 AM	36.7	5.9	2.2
7/14/2024	8:05:00 AM	33.5	9.6	1.2
7/14/2024	8:10:00 AM	31	14.2	2.1
7/14/2024	8:15:00 AM	40.6	64	2.7
7/14/2024	8:20:00 AM	48.7	64.2	4.4
7/14/2024	8:25:00 AM	33.8	70.8	3.6
7/14/2024	8:30:00 AM	33.1	112.3	0.4
7/14/2024	8:35:00 AM	40.5	55.4	5
7/14/2024	8:40:00 AM	35.8	37.3	1.2
7/14/2024	8:45:00 AM	36.1	28.9	1.6
7/14/2024	8:50:00 AM	45.6	53.8	1
7/14/2024	8:55:00 AM	46.5	329.8	1
7/14/2024	9:00:00 AM	37	351.1	1.3
7/14/2024	9:05:00 AM	43.3	97.1	2.9
7/14/2024	9:10:00 AM	45.1	139.2	2.8
7/14/2024	9:15:00 AM	37.7	254.5	1
7/14/2024	9:20:00 AM	39.2	122.3	1.8
7/14/2024	9:25:00 AM	48.3	83.4	2.3
7/14/2024	9:30:00 AM	38.5	110.5	4.5
7/14/2024	9:35:00 AM	25.6	144.3	3
7/14/2024	9:40:00 AM	41.4	188	5.5
7/14/2024	9:45:00 AM	39.7	195.8	1.9
7/14/2024	9:50:00 AM	32.6	209.9	2.7
7/14/2024	9:55:00 AM	29.2	197.6	5.5
7/14/2024	10:00:00 AM	37	224.4	9.3
7/14/2024	10:05:00 AM	26.1	249.6	6.3
7/14/2024	10:10:00 AM	37.4	233.1	1.7
7/14/2024	10:15:00 AM	44	205.8	3.5
7/14/2024	10:20:00 AM	31.7	194.3	2.2
7/14/2024	10:25:00 AM	25	232.2	8
7/14/2024	10:30:00 AM	36	197.8	6.2
7/14/2024	10:35:00 AM	32.9	180.7	2.9
7/14/2024	10:40:00 AM	17.1	211.8	5.6

Site: Higley				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	10:45:00 AM	27	212.5	2.2
7/14/2024	10:50:00 AM	27.8	234.9	4.4
7/14/2024	10:55:00 AM	16.6	220.7	8.3
7/14/2024	11:00:00 AM	26.6	226	5.3
7/14/2024	11:05:00 AM	32	198.6	2.3
7/14/2024	11:10:00 AM	24.6	184.3	4.2
7/14/2024	11:15:00 AM	28.1	253.3	4.7
7/14/2024	11:20:00 AM	46.6	169.3	1.8
7/14/2024	11:25:00 AM	37.1	350.1	1
7/14/2024	11:30:00 AM	24.3	230.7	5.4
7/14/2024	11:35:00 AM	37.9	228.2	6.5
7/14/2024	11:40:00 AM	32.6	195.3	5.1
7/14/2024	11:45:00 AM	22.7	139.8	1.6
7/14/2024	11:50:00 AM	34.9	190.1	3.3
7/14/2024	11:55:00 AM	34.9	239.7	7.3
7/14/2024	12:00:00 PM	25.8	233.7	6.7
7/14/2024	12:05:00 PM	35.2	199.7	7.4
7/14/2024	12:10:00 PM	38.6	171.3	4.1
7/14/2024	12:15:00 PM	24.2	264.6	6.2
7/14/2024	12:20:00 PM	25	247.3	6
7/14/2024	12:25:00 PM	42.6	234.9	5.6
7/14/2024	12:30:00 PM	31	218.7	2.1
7/14/2024	12:35:00 PM	25.2	234.3	4.6
7/14/2024	12:40:00 PM	38.2	231.4	4.4
7/14/2024	12:45:00 PM	36.9	298.9	4
7/14/2024	12:50:00 PM	27.4	292.9	10.7
7/14/2024	12:55:00 PM	41.4	265.5	5.4
7/14/2024	1:00:00 PM	44.7	301.4	5.8
7/14/2024	1:05:00 PM	29.9	317.3	3.8
7/14/2024	1:10:00 PM	31.5	291.2	4.2
7/14/2024	1:15:00 PM	41.3	332.5	2.6
7/14/2024	1:20:00 PM	31.7	251.8	4.1
7/14/2024	1:25:00 PM	30.5	278.3	8.2
7/14/2024	1:30:00 PM	45.9	282.2	9.5
7/14/2024	1:35:00 PM	40.5	282.5	5.4
7/14/2024	1:40:00 PM	21.1	280.3	4.9
7/14/2024	1:45:00 PM	30.6	198.9	2.5
7/14/2024	1:50:00 PM	37.6	242.4	2.7
7/14/2024	1:55:00 PM	23.3	292.8	6.4
7/14/2024	2:00:00 PM	29.9	306.9	3.9
7/14/2024	2:05:00 PM	39.7	334.8	2.6
7/14/2024	2:10:00 PM	33.4	325.9	2.1
7/14/2024	2:15:00 PM	27.2	283.4	7

Site: Higley				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	2:20:00 PM	36	278.5	2.7
7/14/2024	2:25:00 PM	30.1	219	7.9
7/14/2024	2:30:00 PM	19.7	220.6	7
7/14/2024	2:35:00 PM	35	255.3	7.7
7/14/2024	2:40:00 PM	35.6	283.4	9.2
7/14/2024	2:45:00 PM	19.8	262.8	5.9
7/14/2024	2:50:00 PM	31.5	276.5	7.4
7/14/2024	2:55:00 PM	36.6	299.9	4
7/14/2024	3:00:00 PM	26.4	224.1	6.2
7/14/2024	3:05:00 PM	25.4	214.1	6.2
7/14/2024	3:10:00 PM	32.3	228.4	4
7/14/2024	3:15:00 PM	21.2	285.5	6.1
7/14/2024	3:20:00 PM	19.8	291.5	5.8
7/14/2024	3:25:00 PM	30.6	268	7.4
7/14/2024	3:30:00 PM	22.7	266.6	3.2
7/14/2024	3:35:00 PM	17.8	244.2	7.6
7/14/2024	3:40:00 PM	34.7	241.4	10.4
7/14/2024	3:45:00 PM	35.3	243.9	9.4
7/14/2024	3:50:00 PM	23.8	280	7
7/14/2024	3:55:00 PM	34.1	263.3	8.7
7/14/2024	4:00:00 PM	36.6	244.1	8
7/14/2024	4:05:00 PM	28.3	268.6	8.7
7/14/2024	4:10:00 PM	31.3	267.6	9.7
7/14/2024	4:15:00 PM	35.7	277.9	7.7
7/14/2024	4:20:00 PM	26.1	280	6.5
7/14/2024	4:25:00 PM	23.8	298.8	3.4
7/14/2024	4:30:00 PM	34	290.5	7.8
7/14/2024	4:35:00 PM	36.6	281.7	10
7/14/2024	4:40:00 PM	29.3	268.5	5.2
7/14/2024	4:45:00 PM	31.9	274	7.8
7/14/2024	4:50:00 PM	36.5	277.5	10.1
7/14/2024	4:55:00 PM	28.3	256.3	9.7
7/14/2024	5:00:00 PM	30.9	282.4	8.6
7/14/2024	5:05:00 PM	36.3	269.7	5.6
7/14/2024	5:10:00 PM	33.2	259.6	5.7
7/14/2024	5:15:00 PM	41.5	290.6	7.4
7/14/2024	5:20:00 PM	45.6	284.3	9.1
7/14/2024	5:25:00 PM	38.9	282.7	7.2
7/14/2024	5:30:00 PM	27.2	249	7.6
7/14/2024	5:35:00 PM	32.5	244.5	9.5
7/14/2024	5:40:00 PM	34.9	249.8	9.4
7/14/2024	5:45:00 PM	28.3	270	9
7/14/2024	5:50:00 PM	33.7	272.9	9

Site: Higley				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	5:55:00 PM	37.4	287.7	7.1
7/14/2024	6:00:00 PM	26.5	258.9	10.1
7/14/2024	6:05:00 PM	23	270.4	9.8
7/14/2024	6:10:00 PM	29.8	271.5	11.7
7/14/2024	6:15:00 PM	30.1	256.8	8.7
7/14/2024	6:20:00 PM	28.2	275.5	8.1
7/14/2024	6:25:00 PM	30	241.6	9.8
7/14/2024	6:30:00 PM	28.5	252.8	7.4
7/14/2024	6:35:00 PM	28.3	244.7	8.1
7/14/2024	6:40:00 PM	28.6	267.4	8.8
7/14/2024	6:45:00 PM	31.2	247.5	8.8
7/14/2024	6:50:00 PM	28.8	238	7.6
7/14/2024	6:55:00 PM	27.3	251.4	8.2
7/14/2024	7:00:00 PM	31.6	251.2	7.2
7/14/2024	7:05:00 PM	40.2	253.2	6.5
7/14/2024	7:10:00 PM	33.7	256.3	7.2
7/14/2024	7:15:00 PM	37.7	251	7.2
7/14/2024	7:20:00 PM	31.4	248.2	6.2
7/14/2024	7:25:00 PM	26.3	241.5	7.5
7/14/2024	7:30:00 PM	32.6	237.8	6.5
7/14/2024	7:35:00 PM	31.9	238	7.7
7/14/2024	7:40:00 PM	26.4	246.3	8.2
7/14/2024	7:45:00 PM	32.6	232.7	7.6
7/14/2024	7:50:00 PM	38.4	240.4	6.2
7/14/2024	7:55:00 PM	35.6	235.9	10
7/14/2024	8:00:00 PM	44.7	226.3	6.4
7/14/2024	8:05:00 PM	45.2	215.6	8
7/14/2024	8:10:00 PM	34.1	221	8.1
7/14/2024	8:15:00 PM	37.4	207.2	11.9
7/14/2024	8:20:00 PM	104.9	197.9	15.8
7/14/2024	8:25:00 PM	1699.3	204.8	12.3
7/14/2024	8:30:00 PM	3244.8	196.1	13.9
7/14/2024	8:35:00 PM	3102.1	197.4	17.8
7/14/2024	8:40:00 PM	2864	200.6	13.9
7/14/2024	8:45:00 PM	2402.5	202	21.7
7/14/2024	8:50:00 PM	1972.5	208.4	19.8
7/14/2024	8:55:00 PM	1529.6	208.6	22.2
7/14/2024	9:00:00 PM	1611.2	205.4	19.2
7/14/2024	9:05:00 PM	1221.4	209	16
7/14/2024	9:10:00 PM	821.9	212.6	20.4
7/14/2024	9:15:00 PM	656.1	213.4	18
7/14/2024	9:20:00 PM	678.8	217.7	18.9
7/14/2024	9:25:00 PM	579.9	218.9	17.7

Site: Higley				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	9:30:00 PM	407.4	220.3	16.7
7/14/2024	9:35:00 PM	270.5	219.4	15.3
7/14/2024	9:40:00 PM	173.3	219.9	15.3
7/14/2024	9:45:00 PM	138.3	232.3	14.4
7/14/2024	9:50:00 PM	138.5	231.1	13.1
7/14/2024	9:55:00 PM	128.3	245.6	10.2
7/14/2024	10:00:00 PM	116.3	245.6	11
7/14/2024	10:05:00 PM	105.6	257	9.5
7/14/2024	10:10:00 PM	95	262	8.5
7/14/2024	10:15:00 PM	91.2	273.1	6.9
7/14/2024	10:20:00 PM	95.4	277.5	7.8
7/14/2024	10:25:00 PM	106.4	295.4	6.2
7/14/2024	10:30:00 PM	128.7	342.6	6.4
7/14/2024	10:35:00 PM	297.8	352	12.3
7/14/2024	10:40:00 PM	558.2	338.8	5.1
7/14/2024	10:45:00 PM	620.4	349.6	11
7/14/2024	10:50:00 PM	571.8	340.5	3.6
7/14/2024	10:55:00 PM	453	333.9	2.3
7/14/2024	11:00:00 PM	375.3	342.2	3.9
7/14/2024	11:05:00 PM	364.1	325.3	3.1
7/14/2024	11:10:00 PM	378.2	312.8	4.6
7/14/2024	11:15:00 PM	359.8	337.6	4.7
7/14/2024	11:20:00 PM	327.8	348	8
7/14/2024	11:25:00 PM	304.5	350	7.5
7/14/2024	11:30:00 PM	282.1	347.5	10.1
7/14/2024	11:35:00 PM	280.7	355.3	10.9
7/14/2024	11:40:00 PM	299	352.1	10.4
7/14/2024	11:45:00 PM	306.6	352.5	10.1
7/14/2024	11:50:00 PM	286.4	312.3	2.8
7/14/2024	11:55:00 PM	299.8	203.4	7.9
	Average	142.0569444	225.9451389	6.127430556
	Max	3244.8	357.8	22.2
	Min	16.6	5.9	0.4

Site: Durango Complex				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	12:00:00 AM	39.6	267.8	9.7
7/14/2024	12:05:00 AM	38.9	259.2	8.6
7/14/2024	12:10:00 AM	37.8	255.3	10
7/14/2024	12:15:00 AM	35.7	255.5	8.3
7/14/2024	12:20:00 AM	33.7	253.9	9.4
7/14/2024	12:25:00 AM	32.4	255.6	9.5
7/14/2024	12:30:00 AM	31.4	259.3	10.1
7/14/2024	12:35:00 AM	30.7	263.4	8.6
7/14/2024	12:40:00 AM	30.7	267.5	9.6
7/14/2024	12:45:00 AM	31.3	267.7	7.8
7/14/2024	12:50:00 AM	30.9	266.7	8.2
7/14/2024	12:55:00 AM	30.1	262.8	6.9
7/14/2024	1:00:00 AM	29.3	268.2	9.1
7/14/2024	1:05:00 AM	28.7	267.1	9.3
7/14/2024	1:10:00 AM	28.6	267.1	9.2
7/14/2024	1:15:00 AM	28.8	271.9	10.9
7/14/2024	1:20:00 AM	28.8	271.6	10.5
7/14/2024	1:25:00 AM	28.7	271.5	11.9
7/14/2024	1:30:00 AM	28.5	274.7	10.7
7/14/2024	1:35:00 AM	28.2	278.4	8.8
7/14/2024	1:40:00 AM	27.6	291.2	9.4
7/14/2024	1:45:00 AM	25.9	290.3	8.9
7/14/2024	1:50:00 AM	25.3	285.4	11.1
7/14/2024	1:55:00 AM	25.6	284.5	10.9
7/14/2024	2:00:00 AM	26.2	283.8	12.3
7/14/2024	2:05:00 AM	26.9	280.1	13.5
7/14/2024	2:10:00 AM	27.4	275.5	13.1
7/14/2024	2:15:00 AM	28	275.5	14.4
7/14/2024	2:20:00 AM	29	274.2	14.7
7/14/2024	2:25:00 AM	31.3	269.8	16.8
7/14/2024	2:30:00 AM	35.1	263.5	11.1
7/14/2024	2:35:00 AM	39.4	262.6	12.7
7/14/2024	2:40:00 AM	43.4	258	13.8
7/14/2024	2:45:00 AM	47.8	262.8	12.7
7/14/2024	2:50:00 AM	54.2	258.2	16.4
7/14/2024	2:55:00 AM	62.7	263.8	15.5
7/14/2024	3:00:00 AM	71	264	12.9
7/14/2024	3:05:00 AM	77.9	268.6	11.6
7/14/2024	3:10:00 AM	84.1	270.1	9.9
7/14/2024	3:15:00 AM	89.7	271.9	13.8
7/14/2024	3:20:00 AM	92.3	271	12.9
7/14/2024	3:25:00 AM	93.1	273	12
7/14/2024	3:30:00 AM	92.3	276.9	12
7/14/2024	3:35:00 AM	90.3	277	12.6

Site: Durango Complex				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	3:40:00 AM	88.5	273	11.2
7/14/2024	3:45:00 AM	85.6	272.8	10.4
7/14/2024	3:50:00 AM	79.5	271.8	12.9
7/14/2024	3:55:00 AM	70.6	270.2	11
7/14/2024	4:00:00 AM	61.8	269.6	13.3
7/14/2024	4:05:00 AM	54.6	272.4	13.4
7/14/2024	4:10:00 AM	48.6	272.8	14.2
7/14/2024	4:15:00 AM	42.4	270.7	12.9
7/14/2024	4:20:00 AM	38.4	281.3	10.9
7/14/2024	4:25:00 AM	35.7	279	9.9
7/14/2024	4:30:00 AM	33.9	288.8	8.2
7/14/2024	4:35:00 AM	33	286	7.1
7/14/2024	4:40:00 AM	33.7	290.7	9.2
7/14/2024	4:45:00 AM	37.9	291.3	9.6
7/14/2024	4:50:00 AM	41.4	293.3	10.7
7/14/2024	4:55:00 AM	45.1	293.7	10.2
7/14/2024	5:00:00 AM	47.7	294.8	10.4
7/14/2024	5:05:00 AM	49.4	292.1	8.6
7/14/2024	5:10:00 AM	50.1	283.6	9.6
7/14/2024	5:15:00 AM	50.7	295.4	11.6
7/14/2024	5:20:00 AM	51	290.2	10.9
7/14/2024	5:25:00 AM	50.8	298.8	11.4
7/14/2024	5:30:00 AM	50.2	305	10.2
7/14/2024	5:35:00 AM	49	295.6	10.8
7/14/2024	5:40:00 AM	46.5	301.9	10.2
7/14/2024	5:45:00 AM	41.5	306.5	7.6
7/14/2024	5:50:00 AM	37.4	310.5	7.5
7/14/2024	5:55:00 AM	33.8	314.8	7.1
7/14/2024	6:00:00 AM	31.2	308.2	10.3
7/14/2024	6:05:00 AM	29.7	312.5	10.9
7/14/2024	6:10:00 AM	29.1	304.7	11.2
7/14/2024	6:15:00 AM	28.4	308.4	9
7/14/2024	6:20:00 AM	27.8	303.8	10.3
7/14/2024	6:25:00 AM	27.1	298.3	9.5
7/14/2024	6:30:00 AM	26.4	300	9
7/14/2024	6:35:00 AM	25.9	303.1	9.1
7/14/2024	6:40:00 AM	25.6	294.5	8.9
7/14/2024	6:45:00 AM	25.3	305.6	6.7
7/14/2024	6:50:00 AM	24.9	299.7	9
7/14/2024	6:55:00 AM	24.6	298.3	9.9
7/14/2024	7:00:00 AM	24.2	302.7	7.9
7/14/2024	7:05:00 AM	23.7	296.3	8.1
7/14/2024	7:10:00 AM	23.1	294.2	7.3
7/14/2024	7:15:00 AM	22.7	281.6	5.4

Site: Durango Complex				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	7:20:00 AM	23	282.1	7.9
7/14/2024	7:25:00 AM	23.3	280.8	8.5
7/14/2024	7:30:00 AM	23.5	283.6	7.1
7/14/2024	7:35:00 AM	23.7	289.5	8.1
7/14/2024	7:40:00 AM	23.7	291.9	8.3
7/14/2024	7:45:00 AM	23.3	282.5	8
7/14/2024	7:50:00 AM	23	284	8.5
7/14/2024	7:55:00 AM	22.8	273.5	7.9
7/14/2024	8:00:00 AM	22.6	273.2	7.3
7/14/2024	8:05:00 AM	22.2	282.5	7.3
7/14/2024	8:10:00 AM	21.9	270.3	5.7
7/14/2024	8:15:00 AM	21.5	279.2	6.2
7/14/2024	8:20:00 AM	21.1	277.2	6.5
7/14/2024	8:25:00 AM	21	282.5	7.2
7/14/2024	8:30:00 AM	20.9	274.4	7.6
7/14/2024	8:35:00 AM	20.6	282.4	7.5
7/14/2024	8:40:00 AM	20.2	256.7	5.6
7/14/2024	8:45:00 AM	19.4	302.3	7
7/14/2024	8:50:00 AM	18.6	266.2	6.2
7/14/2024	8:55:00 AM	18	297	7.8
7/14/2024	9:00:00 AM	17.5	285.6	6.3
7/14/2024	9:05:00 AM	17.2	254	6
7/14/2024	9:10:00 AM	17.4	257.5	5.4
7/14/2024	9:15:00 AM	17.5	274.1	4.7
7/14/2024	9:20:00 AM	17.6	278	7.1
7/14/2024	9:25:00 AM	17.6	268.6	6.5
7/14/2024	9:30:00 AM	17.9	275.9	3.7
7/14/2024	9:35:00 AM	18.4	320.9	4.3
7/14/2024	9:40:00 AM	19.1	264	3.9
7/14/2024	9:45:00 AM	19.8	266.7	5.9
7/14/2024	9:50:00 AM	20.5	228.1	2.3
7/14/2024	9:55:00 AM	21.6	301.4	5.1
7/14/2024	10:00:00 AM	22.8	264	3.9
7/14/2024	10:05:00 AM	23.9	294.8	2.4
7/14/2024	10:10:00 AM	24.8	295	6.9
7/14/2024	10:15:00 AM	25.3	305.9	7.6
7/14/2024	10:20:00 AM	25.6	293.5	9.4
7/14/2024	10:25:00 AM	25.5	291.7	7.9
7/14/2024	10:30:00 AM	25.1	304	6.8
7/14/2024	10:35:00 AM	24.6	283.5	5.9
7/14/2024	10:40:00 AM	24.2	286.6	11.5
7/14/2024	10:45:00 AM	23.7	295.6	11.7
7/14/2024	10:50:00 AM	23.2	280.7	10
7/14/2024	10:55:00 AM	22.4	272	8.4

Site: Durango Complex				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	11:00:00 AM	21.3	262.5	3.7
7/14/2024	11:05:00 AM	19.7	257.8	6.6
7/14/2024	11:10:00 AM	18.3	302.3	13.2
7/14/2024	11:15:00 AM	17.5	293.9	10.4
7/14/2024	11:20:00 AM	17.1	267.8	7.6
7/14/2024	11:25:00 AM	16.7	276.4	8.7
7/14/2024	11:30:00 AM	16.7	286.3	9.5
7/14/2024	11:35:00 AM	17.2	270.9	6.8
7/14/2024	11:40:00 AM	17.8	282.7	9.2
7/14/2024	11:45:00 AM	17.9	273.6	10.1
7/14/2024	11:50:00 AM	17.9	278.8	7.9
7/14/2024	11:55:00 AM	18.2	248.3	5.9
7/14/2024	12:00:00 PM	18.7	270.3	8.9
7/14/2024	12:05:00 PM	19.4	277.2	7.7
7/14/2024	12:10:00 PM	19.8	284.2	6.8
7/14/2024	12:15:00 PM	19.9	268.8	7.8
7/14/2024	12:20:00 PM	20.1	316.5	5.4
7/14/2024	12:25:00 PM	20.4	291.5	5.3
7/14/2024	12:30:00 PM	20.4	255.4	6
7/14/2024	12:35:00 PM	19.7	308	10.4
7/14/2024	12:40:00 PM	18.8	290.2	5.9
7/14/2024	12:45:00 PM	18.8	269.9	7.8
7/14/2024	12:50:00 PM	19.2	299	11.3
7/14/2024	12:55:00 PM	19.5	292.7	6.7
7/14/2024	1:00:00 PM	19.9	261.3	7
7/14/2024	1:05:00 PM	20.4	297.2	11.9
7/14/2024	1:10:00 PM	21.3	273.4	9.2
7/14/2024	1:15:00 PM	21.6	281.5	7.6
7/14/2024	1:20:00 PM	21.3	259	9.1
7/14/2024	1:25:00 PM	21.1	296.4	9
7/14/2024	1:30:00 PM	21.2	293.7	8.4
7/14/2024	1:35:00 PM	21.7	295.3	9.9
7/14/2024	1:40:00 PM	22.2	279.8	7.9
7/14/2024	1:45:00 PM	22	284.5	6.6
7/14/2024	1:50:00 PM	21.4	270.8	7.1
7/14/2024	1:55:00 PM	21	257.4	8.6
7/14/2024	2:00:00 PM	20.8	268.4	7.3
7/14/2024	2:05:00 PM	20.7	239.7	5.2
7/14/2024	2:10:00 PM	20.7	307.6	8.8
7/14/2024	2:15:00 PM	21	292	10.1
7/14/2024	2:20:00 PM	21.6	264.4	5.2
7/14/2024	2:25:00 PM	21.9	274.1	7.9
7/14/2024	2:30:00 PM	22.1	257	6.2
7/14/2024	2:35:00 PM	22.1	256.8	7.6

Site: Durango Complex				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	2:40:00 PM	22.2	291	7.5
7/14/2024	2:45:00 PM	22.4	280.4	10.4
7/14/2024	2:50:00 PM	23.1	275.6	10
7/14/2024	2:55:00 PM	24	242.8	8.6
7/14/2024	3:00:00 PM	24.7	249.2	7.3
7/14/2024	3:05:00 PM	24.8	263.5	10.4
7/14/2024	3:10:00 PM	24.5	263.5	7.4
7/14/2024	3:15:00 PM	23.8	265.1	9.5
7/14/2024	3:20:00 PM	23.4	281.9	9.5
7/14/2024	3:25:00 PM	23.8	280.8	10.2
7/14/2024	3:30:00 PM	24.2	265.8	11.1
7/14/2024	3:35:00 PM	24.4	274.3	8.2
7/14/2024	3:40:00 PM	24.2	268.4	9.2
7/14/2024	3:45:00 PM	24	268.2	9.2
7/14/2024	3:50:00 PM	23.5	276.7	10.3
7/14/2024	3:55:00 PM	22.9	289.4	11.8
7/14/2024	4:00:00 PM	22.2	273.9	9.7
7/14/2024	4:05:00 PM	21.6	276.5	9
7/14/2024	4:10:00 PM	20.8	291.6	12.3
7/14/2024	4:15:00 PM	21	291.3	10.6
7/14/2024	4:20:00 PM	21.4	280.6	8.8
7/14/2024	4:25:00 PM	21.6	287.6	9.9
7/14/2024	4:30:00 PM	21.6	296.6	11.1
7/14/2024	4:35:00 PM	21.6	265.7	9.5
7/14/2024	4:40:00 PM	21.7	266.1	10.6
7/14/2024	4:45:00 PM	21.9	264.1	12.6
7/14/2024	4:50:00 PM	22.1	286.1	11.6
7/14/2024	4:55:00 PM	22.5	281.3	11.6
7/14/2024	5:00:00 PM	23.1	286.7	12.6
7/14/2024	5:05:00 PM	24.2	269.6	11.5
7/14/2024	5:10:00 PM	25.5	272.9	11.1
7/14/2024	5:15:00 PM	25.6	277.4	11
7/14/2024	5:20:00 PM	25.1	263.2	10.6
7/14/2024	5:25:00 PM	24.7	264.8	11.7
7/14/2024	5:30:00 PM	24.4	271.1	11.7
7/14/2024	5:35:00 PM	24.6	264.1	12.5
7/14/2024	5:40:00 PM	25.6	286.2	11.3
7/14/2024	5:45:00 PM	27.2	270.2	10
7/14/2024	5:50:00 PM	27.3	268.7	9.4
7/14/2024	5:55:00 PM	26.7	276.8	12.4
7/14/2024	6:00:00 PM	25.7	265	11.5
7/14/2024	6:05:00 PM	24.7	273.3	11.2
7/14/2024	6:10:00 PM	24.2	268.7	12.8
7/14/2024	6:15:00 PM	24.9	270.6	12.7

Site: Durango Complex				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	6:20:00 PM	25.5	275.8	13.2
7/14/2024	6:25:00 PM	25.4	269.6	11.7
7/14/2024	6:30:00 PM	25	267.8	8.7
7/14/2024	6:35:00 PM	24.2	265	9.8
7/14/2024	6:40:00 PM	23.1	280	11.2
7/14/2024	6:45:00 PM	21.5	269.6	9.1
7/14/2024	6:50:00 PM	21	267.6	9.9
7/14/2024	6:55:00 PM	21.3	259.7	9.1
7/14/2024	7:00:00 PM	22.2	273.7	10.4
7/14/2024	7:05:00 PM	23.1	264.7	8.9
7/14/2024	7:10:00 PM	23.6	256.1	9
7/14/2024	7:15:00 PM	22.9	256.1	7.1
7/14/2024	7:20:00 PM	21.9	240.7	6.8
7/14/2024	7:25:00 PM	21.1	240	7.3
7/14/2024	7:30:00 PM	20.5	241.8	6.8
7/14/2024	7:35:00 PM	20	244.2	6.3
7/14/2024	7:40:00 PM	19.6	241.7	6.7
7/14/2024	7:45:00 PM	19	243.2	8.1
7/14/2024	7:50:00 PM	18.5	241	7.9
7/14/2024	7:55:00 PM	17.6	245.7	8.5
7/14/2024	8:00:00 PM	16.5	246	8.9
7/14/2024	8:05:00 PM	15	249.5	11.9
7/14/2024	8:10:00 PM	13.9	244.7	12.5
7/14/2024	8:15:00 PM	15.6	239.8	11.4
7/14/2024	8:20:00 PM	19.2	242.5	10.8
7/14/2024	8:25:00 PM	22.3	235.8	11.4
7/14/2024	8:30:00 PM	25	227	13.2
7/14/2024	8:35:00 PM	27.3	229.4	14
7/14/2024	8:40:00 PM	29.8	238.3	11.5
7/14/2024	8:45:00 PM	32.6	229.9	12.2
7/14/2024	8:50:00 PM	34.3	204.7	15.2
7/14/2024	8:55:00 PM	35.6	187.9	15.7
7/14/2024	9:00:00 PM	118.1	189.3	13.2
7/14/2024	9:05:00 PM	323.2	178.1	13
7/14/2024	9:10:00 PM	652	166.5	14.1
7/14/2024	9:15:00 PM	969	164.3	12.5
7/14/2024	9:20:00 PM	1148.2	170.8	12.7
7/14/2024	9:25:00 PM	1297.4	184.8	13.3
7/14/2024	9:30:00 PM	1416.6	192.5	10.8
7/14/2024	9:35:00 PM	1510.5	203.2	8.8
7/14/2024	9:40:00 PM	1608	197.7	6.4
7/14/2024	9:45:00 PM	1717	168.4	5.9
7/14/2024	9:50:00 PM	1793.6	191.3	4.7
7/14/2024	9:55:00 PM	1869.7	212.4	3.3

Site: Durango Complex				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	10:00:00 PM	1867.6	267.8	1.5
7/14/2024	10:05:00 PM	1743.2	1.4	1.8
7/14/2024	10:10:00 PM	1500	41.1	1.4
7/14/2024	10:15:00 PM	1286	358.1	4.2
7/14/2024	10:20:00 PM	1186	3.8	5.8
7/14/2024	10:25:00 PM	1114.2	14.7	3.4
7/14/2024	10:30:00 PM	1070.2	12	3.6
7/14/2024	10:35:00 PM	1045.5	38.6	2.1
7/14/2024	10:40:00 PM	1018	51.7	1.9
7/14/2024	10:45:00 PM	986.1	47.8	1.9
7/14/2024	10:50:00 PM	961	49.6	1.2
7/14/2024	10:55:00 PM	938.8	57.5	1.2
7/14/2024	11:00:00 PM	913.2	216.3	1.2
7/14/2024	11:05:00 PM	881.4	194	7
7/14/2024	11:10:00 PM	843	184	6.5
7/14/2024	11:15:00 PM	787	207.6	6
7/14/2024	11:20:00 PM	736.6	198	12.4
7/14/2024	11:25:00 PM	678.4	207.3	6.5
7/14/2024	11:30:00 PM	611.2	231.1	7.7
7/14/2024	11:35:00 PM	539.2	242.4	7
7/14/2024	11:40:00 PM	472	279.3	8.2
7/14/2024	11:45:00 PM	396	300.7	8.5
7/14/2024	11:50:00 PM	342.4	310.6	7.2
7/14/2024	11:55:00 PM	295.5	326.6	4.2
	Average	152.4847222	261.6413194	9.00625
	Max	1869.7	358.1	16.8
	Max Hour	64260.54842	4934.090461	11.61828966
	Min	16.6	5.9	0.4

Site: West Chandler				
Date	Time	PM_{10} ($\mu g/m_3$)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	12:00:00 AM	43.8	253	4.3
7/14/2024	12:05:00 AM	42.9	247	5.3
7/14/2024	12:10:00 AM	41.7	240.5	5.4
7/14/2024	12:15:00 AM	43.2	243.3	4
7/14/2024	12:20:00 AM	40.3	241	4.1
7/14/2024	12:25:00 AM	37.8	242.8	5.7
7/14/2024	12:30:00 AM	37	252.1	6
7/14/2024	12:35:00 AM	37.1	254.2	5.9
7/14/2024	12:40:00 AM	37.4	243.9	6.7
7/14/2024	12:45:00 AM	39.7	199.8	4.8
7/14/2024	12:50:00 AM	41.5	219.1	4
7/14/2024	12:55:00 AM	40.2	216	3.6
7/14/2024	1:00:00 AM	39.4	215.1	2.9
7/14/2024	1:05:00 AM	37	205.8	3.3
7/14/2024	1:10:00 AM	36.1	215.5	3.8
7/14/2024	1:15:00 AM	33.5	218.7	3.3
7/14/2024	1:20:00 AM	36	212	2.9
7/14/2024	1:25:00 AM	38.1	198.7	2.4
7/14/2024	1:30:00 AM	40.3	187.8	2.6
7/14/2024	1:35:00 AM	39.8	190.9	1.6
7/14/2024	1:40:00 AM	40.5	190.9	1.9
7/14/2024	1:45:00 AM	39.7	188.1	2.8
7/14/2024	1:50:00 AM	41.3	171.7	2.3
7/14/2024	1:55:00 AM	40.4	182.8	3.4
7/14/2024	2:00:00 AM	38	168	2.2
7/14/2024	2:05:00 AM	38.6	169.1	2.2
7/14/2024	2:10:00 AM	39.5	166.5	2.4
7/14/2024	2:15:00 AM	38.7	165.4	2.3
7/14/2024	2:20:00 AM	41.4	161	1.8
7/14/2024	2:25:00 AM	46.7	181.6	2.5
7/14/2024	2:30:00 AM	54.7	169.8	2.3
7/14/2024	2:35:00 AM	70.1	177.2	3.9
7/14/2024	2:40:00 AM	80.3	187.3	6.7
7/14/2024	2:45:00 AM	71.7	189.2	8
7/14/2024	2:50:00 AM	87.6	198.1	7.6
7/14/2024	2:55:00 AM	105.8	205.9	5.6
7/14/2024	3:00:00 AM	96.2	213.3	5.8
7/14/2024	3:05:00 AM	73.5	207.3	6.4
7/14/2024	3:10:00 AM	66.1	208.3	5
7/14/2024	3:15:00 AM	81	204.8	4.7
7/14/2024	3:20:00 AM	114	207.4	5
7/14/2024	3:25:00 AM	134.5	194.1	6.3
7/14/2024	3:30:00 AM	137	198.9	6.5

Site: West Chandler				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	3:35:00 AM	116.2	197.5	4.5
7/14/2024	3:40:00 AM	87.4	201.5	4
7/14/2024	3:45:00 AM	68.4	194.8	3.3
7/14/2024	3:50:00 AM	64.5	197.8	4.9
7/14/2024	3:55:00 AM	74.7	204	3
7/14/2024	4:00:00 AM	75.5	217.9	3
7/14/2024	4:05:00 AM	68.5	204.5	2.8
7/14/2024	4:10:00 AM	67.2	232.9	2.3
7/14/2024	4:15:00 AM	69.4	252.9	0.9
7/14/2024	4:20:00 AM	67.9	163.6	1.8
7/14/2024	4:25:00 AM	62	158.9	1.2
7/14/2024	4:30:00 AM	54.7	41.5	1.5
7/14/2024	4:35:00 AM	53.1	62.6	3.1
7/14/2024	4:40:00 AM	47.4	68.8	3.7
7/14/2024	4:45:00 AM	44.9	163.4	2.5
7/14/2024	4:50:00 AM	42	172.8	4
7/14/2024	4:55:00 AM	37.7	166.7	3.3
7/14/2024	5:00:00 AM	35.2	142.6	3.2
7/14/2024	5:05:00 AM	36.8	58.6	4.3
7/14/2024	5:10:00 AM	42.1	73.2	5.5
7/14/2024	5:15:00 AM	41.8	109.4	4.1
7/14/2024	5:20:00 AM	37	98.8	3.6
7/14/2024	5:25:00 AM	33.1	93.8	3.8
7/14/2024	5:30:00 AM	37.1	81.5	4.5
7/14/2024	5:35:00 AM	40.3	60.4	4.4
7/14/2024	5:40:00 AM	38	82.1	3.7
7/14/2024	5:45:00 AM	34.8	88.7	3.5
7/14/2024	5:50:00 AM	35	60.6	3.5
7/14/2024	5:55:00 AM	35.9	49.9	4.2
7/14/2024	6:00:00 AM	37.2	75.5	2.7
7/14/2024	6:05:00 AM	35.6	46.3	3.1
7/14/2024	6:10:00 AM	34.5	49.6	4.3
7/14/2024	6:15:00 AM	60.4	20.2	4
7/14/2024	6:20:00 AM	78.7	22.9	3.6
7/14/2024	6:25:00 AM	73.2	356.2	3.8
7/14/2024	6:30:00 AM	62.8	12	3.1
7/14/2024	6:35:00 AM	54.1	358.9	3.6
7/14/2024	6:40:00 AM	48.6	7.5	3.2
7/14/2024	6:45:00 AM	44.6	22.6	2.7
7/14/2024	6:50:00 AM	41.4	21.2	3.5
7/14/2024	6:55:00 AM	37	341.1	4.3
7/14/2024	7:00:00 AM	33.9	339.4	4.7
7/14/2024	7:05:00 AM	31.2	340.1	5.3
7/14/2024	7:10:00 AM	36.3	334.4	4.4

Site: West Chandler				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	7:15:00 AM	38.9	1.4	3.2
7/14/2024	7:20:00 AM	35.8	335.3	2.6
7/14/2024	7:25:00 AM	35.6	355.6	3.2
7/14/2024	7:30:00 AM	36.2	13.6	4.1
7/14/2024	7:35:00 AM	34.7	6.4	4.2
7/14/2024	7:40:00 AM	30.6	7.4	2.8
7/14/2024	7:45:00 AM	34.2	1	3.5
7/14/2024	7:50:00 AM	29.4	347	3.7
7/14/2024	7:55:00 AM	27.8	355.6	4.1
7/14/2024	8:00:00 AM	32.1	27.4	4.2
7/14/2024	8:05:00 AM	37.5	24.7	4.1
7/14/2024	8:10:00 AM	36.7	359.2	2.2
7/14/2024	8:15:00 AM	36	30.9	3.8
7/14/2024	8:20:00 AM	35.2	29.2	4.5
7/14/2024	8:25:00 AM	29.7	27.9	2.7
7/14/2024	8:30:00 AM	26.2	10.1	1.1
7/14/2024	8:35:00 AM	28	53.6	4.2
7/14/2024	8:40:00 AM	28.1	68.3	3.3
7/14/2024	8:45:00 AM	28.6	77.2	5.7
7/14/2024	8:50:00 AM	31.6	67.9	3.7
7/14/2024	8:55:00 AM	28.2	98.3	2.7
7/14/2024	9:00:00 AM	24.4	65.8	2.1
7/14/2024	9:05:00 AM	22.9	36.3	1
7/14/2024	9:10:00 AM	22.1	129.7	4.8
7/14/2024	9:15:00 AM	22.3	126.3	2.6
7/14/2024	9:20:00 AM	26.5	66.5	1.8
7/14/2024	9:25:00 AM	22	344.9	1.3
7/14/2024	9:30:00 AM	27.9	192.9	2.7
7/14/2024	9:35:00 AM	27.4	162.8	4.1
7/14/2024	9:40:00 AM	25.6	239	3.3
7/14/2024	9:45:00 AM	32.4	89.3	3.3
7/14/2024	9:50:00 AM	29.9	101.7	2.1
7/14/2024	9:55:00 AM	20.1	197.8	4.3
7/14/2024	10:00:00 AM	19.4	193	4.1
7/14/2024	10:05:00 AM	23.2	188.4	2.7
7/14/2024	10:10:00 AM	26	233.7	4.1
7/14/2024	10:15:00 AM	24.8	215.5	2.7
7/14/2024	10:20:00 AM	23.8	182.2	1.8
7/14/2024	10:25:00 AM	22.2	163.8	2.2
7/14/2024	10:30:00 AM	24.2	185.4	2.7
7/14/2024	10:35:00 AM	28	263.9	5.1
7/14/2024	10:40:00 AM	31.5	274.8	4.2
7/14/2024	10:45:00 AM	25.8	216.9	2.7
7/14/2024	10:50:00 AM	31.4	278	3.5

Site: West Chandler				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	10:55:00 AM	33.3	294.5	4.9
7/14/2024	11:00:00 AM	30.2	246.3	4.5
7/14/2024	11:05:00 AM	30.7	269.5	3.7
7/14/2024	11:10:00 AM	35.9	243.3	6.2
7/14/2024	11:15:00 AM	35.5	261.1	2.4
7/14/2024	11:20:00 AM	33	279.8	1.7
7/14/2024	11:25:00 AM	32.4	101.1	0.3
7/14/2024	11:30:00 AM	31.2	82.2	2
7/14/2024	11:35:00 AM	30.1	287.3	1.5
7/14/2024	11:40:00 AM	28.8	252.9	3.6
7/14/2024	11:45:00 AM	27.3	269.8	3.3
7/14/2024	11:50:00 AM	28.3	300.2	1.1
7/14/2024	11:55:00 AM	28.4	7.3	2.4
7/14/2024	12:00:00 PM	34.3	12.2	2.2
7/14/2024	12:05:00 PM	24.2	109.1	3.6
7/14/2024	12:10:00 PM	28.5	55.4	0.9
7/14/2024	12:15:00 PM	34.9	289.5	3.8
7/14/2024	12:20:00 PM	32.3	256.1	3.7
7/14/2024	12:25:00 PM	35	248.9	5.1
7/14/2024	12:30:00 PM	37.4	347.7	2.2
7/14/2024	12:35:00 PM	38.2	337.9	4.6
7/14/2024	12:40:00 PM	37.5	318.6	3.4
7/14/2024	12:45:00 PM	33.5	31.3	3.7
7/14/2024	12:50:00 PM	33.5	12.7	5.3
7/14/2024	12:55:00 PM	31.5	30.8	4.2
7/14/2024	1:00:00 PM	32.1	5.2	2.1
7/14/2024	1:05:00 PM	29.5	44.4	4.2
7/14/2024	1:10:00 PM	28.8	32.2	5
7/14/2024	1:15:00 PM	34.9	326.7	3.6
7/14/2024	1:20:00 PM	36.7	318	4.8
7/14/2024	1:25:00 PM	31.5	326.7	6.1
7/14/2024	1:30:00 PM	31.3	16	3.7
7/14/2024	1:35:00 PM	27.4	37.7	4.2
7/14/2024	1:40:00 PM	29.2	330	3.6
7/14/2024	1:45:00 PM	21.9	244.2	4
7/14/2024	1:50:00 PM	17.6	238.5	6.6
7/14/2024	1:55:00 PM	17.1	245.1	8
7/14/2024	2:00:00 PM	21.2	251.7	6.4
7/14/2024	2:05:00 PM	22	305.8	2.9
7/14/2024	2:10:00 PM	22.6	264.3	6.5
7/14/2024	2:15:00 PM	20.7	295.5	4.8
7/14/2024	2:20:00 PM	21	333.9	5.8
7/14/2024	2:25:00 PM	24.4	276.2	3.2
7/14/2024	2:30:00 PM	22.4	296.3	5.1

Site: West Chandler				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	2:35:00 PM	24.3	287.9	1.4
7/14/2024	2:40:00 PM	22.1	219.2	5.7
7/14/2024	2:45:00 PM	25.8	225.1	8.6
7/14/2024	2:50:00 PM	31.4	259.5	7.7
7/14/2024	2:55:00 PM	31.9	286	1.7
7/14/2024	3:00:00 PM	25.5	265.6	5.2
7/14/2024	3:05:00 PM	23.2	243.3	4.6
7/14/2024	3:10:00 PM	21.1	235.2	2.4
7/14/2024	3:15:00 PM	22.5	291.2	3.3
7/14/2024	3:20:00 PM	28.2	265.6	5.4
7/14/2024	3:25:00 PM	28.7	278.2	4.6
7/14/2024	3:30:00 PM	26.4	271.2	5.3
7/14/2024	3:35:00 PM	27.7	282	7.5
7/14/2024	3:40:00 PM	34.7	272.1	3.6
7/14/2024	3:45:00 PM	32.5	249.7	5.9
7/14/2024	3:50:00 PM	45.9	259.1	6.1
7/14/2024	3:55:00 PM	39.1	262.7	6.5
7/14/2024	4:00:00 PM	32.6	249.7	5.2
7/14/2024	4:05:00 PM	32.8	284.2	5.2
7/14/2024	4:10:00 PM	30.1	282.8	5.1
7/14/2024	4:15:00 PM	25.7	225.8	5.2
7/14/2024	4:20:00 PM	27.5	243.5	7.7
7/14/2024	4:25:00 PM	29.8	234.4	7
7/14/2024	4:30:00 PM	26.6	215.3	6
7/14/2024	4:35:00 PM	30.2	277.6	6.5
7/14/2024	4:40:00 PM	30	282.6	6.1
7/14/2024	4:45:00 PM	29	272.6	6.2
7/14/2024	4:50:00 PM	32.9	256.2	6.2
7/14/2024	4:55:00 PM	34.2	255.2	6.2
7/14/2024	5:00:00 PM	29.7	233.7	7.3
7/14/2024	5:05:00 PM	23.3	247.7	8.3
7/14/2024	5:10:00 PM	26.1	246.3	7.8
7/14/2024	5:15:00 PM	24.9	238.6	4
7/14/2024	5:20:00 PM	32.3	274	7.1
7/14/2024	5:25:00 PM	30.2	242.5	6.8
7/14/2024	5:30:00 PM	27.7	241.7	6.5
7/14/2024	5:35:00 PM	29.4	249.1	9.4
7/14/2024	5:40:00 PM	27	243.7	8
7/14/2024	5:45:00 PM	31.9	233.5	5.8
7/14/2024	5:50:00 PM	29.7	232.2	8.2
7/14/2024	5:55:00 PM	31.3	243.3	7.9
7/14/2024	6:00:00 PM	29.5	247.9	8.4
7/14/2024	6:05:00 PM	28.4	250.8	9.1
7/14/2024	6:10:00 PM	35.2	258.8	6.2

Site: West Chandler				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	6:15:00 PM	32.8	255.8	7.9
7/14/2024	6:20:00 PM	28.1	245.8	6.9
7/14/2024	6:25:00 PM	30.9	230.1	6.1
7/14/2024	6:30:00 PM	33.4	246	6.6
7/14/2024	6:35:00 PM	32.9	246.8	5.5
7/14/2024	6:40:00 PM	38.7	251.4	6
7/14/2024	6:45:00 PM	28.9	259.6	7.4
7/14/2024	6:50:00 PM	27.5	241.8	7.5
7/14/2024	6:55:00 PM	27.7	249.7	5.9
7/14/2024	7:00:00 PM	33.8	263	5.6
7/14/2024	7:05:00 PM	23.4	244.9	5.4
7/14/2024	7:10:00 PM	26.1	256.7	7.5
7/14/2024	7:15:00 PM	37.6	262.7	7.2
7/14/2024	7:20:00 PM	34.3	265.5	6.6
7/14/2024	7:25:00 PM	33.8	254.7	6.2
7/14/2024	7:30:00 PM	21.5	251.8	6.7
7/14/2024	7:35:00 PM	21.1	242.2	6.6
7/14/2024	7:40:00 PM	26.4	241	6.8
7/14/2024	7:45:00 PM	27.7	228.5	5.4
7/14/2024	7:50:00 PM	30.1	222.3	5.6
7/14/2024	7:55:00 PM	28.9	223.4	4.4
7/14/2024	8:00:00 PM	27	223.6	6.4
7/14/2024	8:05:00 PM	25.4	217.1	6.5
7/14/2024	8:10:00 PM	26	203.9	5.3
7/14/2024	8:15:00 PM	30.1	196.6	7.2
7/14/2024	8:20:00 PM	29.9	200.4	9.9
7/14/2024	8:25:00 PM	94.8	190.6	14.4
7/14/2024	8:30:00 PM	1702.6	187.2	14.8
7/14/2024	8:35:00 PM	3826.5	186.6	16.4
7/14/2024	8:40:00 PM	4264.8	186.6	13.6
7/14/2024	8:45:00 PM	3454.6	184.9	14.5
7/14/2024	8:50:00 PM	3235.7	186.1	10.7
7/14/2024	8:55:00 PM	3141.4	187.6	14.7
7/14/2024	9:00:00 PM	4130.5	188.8	14.8
7/14/2024	9:05:00 PM	5165.6	189.1	17.8
7/14/2024	9:10:00 PM	4360.9	188.5	13.6
7/14/2024	9:15:00 PM	3149.1	187.4	11.8
7/14/2024	9:20:00 PM	2127.5	194.2	11.3
7/14/2024	9:25:00 PM	1433.5	210	9
7/14/2024	9:30:00 PM	1086.3	221.9	13.8
7/14/2024	9:35:00 PM	821.8	220.7	10.8
7/14/2024	9:40:00 PM	527.2	219.1	9
7/14/2024	9:45:00 PM	320.2	224.6	8.4
7/14/2024	9:50:00 PM	258.5	224.7	6.3

Site: West Chandler				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	9:55:00 PM	294.9	221.7	6.9
7/14/2024	10:00:00 PM	292.9	231.9	7.1
7/14/2024	10:05:00 PM	234.3	246.7	9.1
7/14/2024	10:10:00 PM	158.6	245.8	6.1
7/14/2024	10:15:00 PM	104.2	250.5	5.2
7/14/2024	10:20:00 PM	83.6	241.2	4.4
7/14/2024	10:25:00 PM	76.5	266.3	2.8
7/14/2024	10:30:00 PM	77.5	313.8	6.5
7/14/2024	10:35:00 PM	100	336.9	8.5
7/14/2024	10:40:00 PM	128.5	352	8.1
7/14/2024	10:45:00 PM	159.9	295.8	4.9
7/14/2024	10:50:00 PM	211.2	256.6	8.9
7/14/2024	10:55:00 PM	220.2	256.5	14
7/14/2024	11:00:00 PM	157.7	276.8	11.2
7/14/2024	11:05:00 PM	152	296.8	14
7/14/2024	11:10:00 PM	121.5	308.7	11.8
7/14/2024	11:15:00 PM	64.8	334.3	11.5
7/14/2024	11:20:00 PM	20.5	301.6	5.4
7/14/2024	11:25:00 PM	34.8	327.6	4.6
7/14/2024	11:30:00 PM	6.8	351.9	5.2
7/14/2024	11:35:00 PM	12.6	327.6	0.7
7/14/2024	11:40:00 PM	1.5	2.4	3.8
7/14/2024	11:45:00 PM	19.3	15.9	5.3
7/14/2024	11:50:00 PM	70.7	351.6	2.7
7/14/2024	11:55:00 PM	106	288	0.8
	Average	191.8274306	202.6184028	5.144097222
	Max	5165.6	359.2	17.8
	Max Hour	64260.54842	4934.090461	11.61828966
	Min	16.6	5.9	0.4

Site: South Scottsdale				
Date	Time	PM_{10} ($\mu g/m_3$)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	12:00:00 AM	46	263.1	9.4
7/14/2024	12:05:00 AM	44.5	263.8	11.4
7/14/2024	12:10:00 AM	44.3	266.3	8.9
7/14/2024	12:15:00 AM	45.4	266.7	10
7/14/2024	12:20:00 AM	43.6	274.4	11.3
7/14/2024	12:25:00 AM	42.4	272.6	8.4
7/14/2024	12:30:00 AM	40.8	271.5	9
7/14/2024	12:35:00 AM	40.4	274.2	11.4
7/14/2024	12:40:00 AM	40.5	276.3	10.6
7/14/2024	12:45:00 AM	39.7	272.5	12.1
7/14/2024	12:50:00 AM	40.9	275.7	12.4
7/14/2024	12:55:00 AM	41.9	273.2	11.7
7/14/2024	1:00:00 AM	42.1	275.9	10.7
7/14/2024	1:05:00 AM	41.4	275.9	7.4
7/14/2024	1:10:00 AM	40.9	274.5	7.5
7/14/2024	1:15:00 AM	38.4	278.4	8.9
7/14/2024	1:20:00 AM	38.4	275.3	8
7/14/2024	1:25:00 AM	39.3	275.9	9.2
7/14/2024	1:30:00 AM	38.4	275.9	7.4
7/14/2024	1:35:00 AM	35.6	274.6	8.3
7/14/2024	1:40:00 AM	34	270	7.5
7/14/2024	1:45:00 AM	33.2	272.2	9
7/14/2024	1:50:00 AM	33.6	272.4	9.1
7/14/2024	1:55:00 AM	32.1	267.1	9.1
7/14/2024	2:00:00 AM	31.6	262.3	8.7
7/14/2024	2:05:00 AM	31.4	265.2	9.7
7/14/2024	2:10:00 AM	31.9	266.2	8.6
7/14/2024	2:15:00 AM	28	262.3	10.7
7/14/2024	2:20:00 AM	26.8	265.3	10.2
7/14/2024	2:25:00 AM	28.5	261.8	9.8
7/14/2024	2:30:00 AM	28	261.5	9.8
7/14/2024	2:35:00 AM	27.9	266.5	9.8
7/14/2024	2:40:00 AM	28.1	259.8	11.9
7/14/2024	2:45:00 AM	30.7	258.8	10
7/14/2024	2:50:00 AM	34.4	257.3	11.4
7/14/2024	2:55:00 AM	41.8	259.7	9.7
7/14/2024	3:00:00 AM	48.1	251.1	11.1
7/14/2024	3:05:00 AM	51.2	256.9	11.6
7/14/2024	3:10:00 AM	53.2	253.2	10.2
7/14/2024	3:15:00 AM	55.8	258.8	9.7
7/14/2024	3:20:00 AM	62	262.8	11.1
7/14/2024	3:25:00 AM	75.1	263.4	9.3
7/14/2024	3:30:00 AM	90.9	264.9	9.9

Site: South Scottsdale				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	3:35:00 AM	94.7	270.7	10.2
7/14/2024	3:40:00 AM	108.7	273.3	9.9
7/14/2024	3:45:00 AM	113.9	266.7	10.7
7/14/2024	3:50:00 AM	100.4	270.7	10.5
7/14/2024	3:55:00 AM	87.4	270.7	10
7/14/2024	4:00:00 AM	76.1	272.5	10.6
7/14/2024	4:05:00 AM	68.8	269.1	12.2
7/14/2024	4:10:00 AM	60.5	266.8	11.9
7/14/2024	4:15:00 AM	50.8	269.8	10.2
7/14/2024	4:20:00 AM	47	272	11.6
7/14/2024	4:25:00 AM	43	274.1	8.7
7/14/2024	4:30:00 AM	42.6	275.4	9.7
7/14/2024	4:35:00 AM	45.2	288.6	7
7/14/2024	4:40:00 AM	49.2	295	6.2
7/14/2024	4:45:00 AM	51.6	297.5	5.1
7/14/2024	4:50:00 AM	49.7	312.1	5.6
7/14/2024	4:55:00 AM	52.3	306.9	6.9
7/14/2024	5:00:00 AM	52.7	315.7	4.3
7/14/2024	5:05:00 AM	59.1	313.1	4.7
7/14/2024	5:10:00 AM	67.5	306	5.8
7/14/2024	5:15:00 AM	73.4	295	5.9
7/14/2024	5:20:00 AM	70.2	297.7	5.8
7/14/2024	5:25:00 AM	61.3	304.8	4.5
7/14/2024	5:30:00 AM	57.6	308.6	4.5
7/14/2024	5:35:00 AM	52.5	305.5	7.1
7/14/2024	5:40:00 AM	50.6	297.8	6.5
7/14/2024	5:45:00 AM	39.2	279.8	6.7
7/14/2024	5:50:00 AM	29.6	285.8	5.2
7/14/2024	5:55:00 AM	29.8	278.5	4.1
7/14/2024	6:00:00 AM	31.9	299.9	4.2
7/14/2024	6:05:00 AM	32.9	306	4.4
7/14/2024	6:10:00 AM	33.6	307.5	5.4
7/14/2024	6:15:00 AM	33.5	304.4	5.4
7/14/2024	6:20:00 AM	33.5	315.3	6
7/14/2024	6:25:00 AM	35.2	309.3	5.3
7/14/2024	6:30:00 AM	35.6	286.9	6
7/14/2024	6:35:00 AM	34.1	293	6.3
7/14/2024	6:40:00 AM	34	301.3	4.9
7/14/2024	6:45:00 AM	33.9	302.3	4.9
7/14/2024	6:50:00 AM	33.3	300.3	4.1
7/14/2024	6:55:00 AM	33.3	308	4.3
7/14/2024	7:00:00 AM	35.6	300.1	3.8
7/14/2024	7:05:00 AM	33.4	302.1	4.1
7/14/2024	7:10:00 AM	32.9	300.4	6.8

Site: South Scottsdale				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	7:15:00 AM	29.6	296	5.2
7/14/2024	7:20:00 AM	28	296.1	5.7
7/14/2024	7:25:00 AM	30	300.1	6.3
7/14/2024	7:30:00 AM	28.1	300.9	6.9
7/14/2024	7:35:00 AM	26.4	292.4	6.7
7/14/2024	7:40:00 AM	27.6	291.5	4.9
7/14/2024	7:45:00 AM	27.3	278.1	4.2
7/14/2024	7:50:00 AM	27.4	254.3	5.4
7/14/2024	7:55:00 AM	26.9	296	4.1
7/14/2024	8:00:00 AM	28.1	295.9	4.7
7/14/2024	8:05:00 AM	29.5	308.9	2.9
7/14/2024	8:10:00 AM	28.2	310.7	4.4
7/14/2024	8:15:00 AM	28.6	287.9	3.7
7/14/2024	8:20:00 AM	24.7	261.2	4.7
7/14/2024	8:25:00 AM	24.4	264.8	3.7
7/14/2024	8:30:00 AM	25.4	290.9	4.1
7/14/2024	8:35:00 AM	24.2	257.3	4.2
7/14/2024	8:40:00 AM	24.8	223.1	3.7
7/14/2024	8:45:00 AM	26	309.3	4.4
7/14/2024	8:50:00 AM	25.7	255.7	5
7/14/2024	8:55:00 AM	27.8	235.4	4.8
7/14/2024	9:00:00 AM	29	223.9	5.2
7/14/2024	9:05:00 AM	29.8	249.4	4.5
7/14/2024	9:10:00 AM	29.7	298.4	4.1
7/14/2024	9:15:00 AM	30.7	279.2	5.2
7/14/2024	9:20:00 AM	28.3	245.1	4.7
7/14/2024	9:25:00 AM	27.1	237.5	0.9
7/14/2024	9:30:00 AM	26	223.5	5.3
7/14/2024	9:35:00 AM	26.7	199.6	1.9
7/14/2024	9:40:00 AM	26.9	248.5	6.3
7/14/2024	9:45:00 AM	19	246.5	5.7
7/14/2024	9:50:00 AM	19.6	221	3.8
7/14/2024	9:55:00 AM	26.8	262.4	1.7
7/14/2024	10:00:00 AM	27.8	275.5	3.3
7/14/2024	10:05:00 AM	25.3	221.4	4.7
7/14/2024	10:10:00 AM	23	259.4	5
7/14/2024	10:15:00 AM	21.9	218.8	7.6
7/14/2024	10:20:00 AM	29.7	254.9	6.1
7/14/2024	10:25:00 AM	28.4	178.3	3.4
7/14/2024	10:30:00 AM	33.1	185.7	5.1
7/14/2024	10:35:00 AM	22.5	230.7	5.6
7/14/2024	10:40:00 AM	14.6	240.4	6.8
7/14/2024	10:45:00 AM	17.4	274.2	5.2
7/14/2024	10:50:00 AM	22.3	245.1	5.7

Site: South Scottsdale				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	10:55:00 AM	23	310.2	5.1
7/14/2024	11:00:00 AM	22.7	251.9	6.5
7/14/2024	11:05:00 AM	16.4	248.9	6.1
7/14/2024	11:10:00 AM	17.4	249.2	8.5
7/14/2024	11:15:00 AM	19	228.6	5.8
7/14/2024	11:20:00 AM	24.2	244.6	7.5
7/14/2024	11:25:00 AM	28.1	218.7	2.2
7/14/2024	11:30:00 AM	29.8	262.2	8.3
7/14/2024	11:35:00 AM	25.8	294.1	8.7
7/14/2024	11:40:00 AM	21.1	301.9	8.5
7/14/2024	11:45:00 AM	24.8	286.1	8.9
7/14/2024	11:50:00 AM	25.7	298.3	3.9
7/14/2024	11:55:00 AM	23.2	282.8	8.1
7/14/2024	12:00:00 PM	22.6	291.2	6.8
7/14/2024	12:05:00 PM	21.5	311.5	10.7
7/14/2024	12:10:00 PM	22.2	286.4	4.9
7/14/2024	12:15:00 PM	28.3	253.4	6.5
7/14/2024	12:20:00 PM	24.9	252.2	9.7
7/14/2024	12:25:00 PM	21.5	283.9	5.7
7/14/2024	12:30:00 PM	21.6	222.7	6.3
7/14/2024	12:35:00 PM	11.8	236.8	5.3
7/14/2024	12:40:00 PM	29.4	283.5	7
7/14/2024	12:45:00 PM	35.7	300.7	5.7
7/14/2024	12:50:00 PM	35	284.3	8.8
7/14/2024	12:55:00 PM	30.8	269.6	6.5
7/14/2024	1:00:00 PM	27	273.8	11.6
7/14/2024	1:05:00 PM	24.6	274.6	5.5
7/14/2024	1:10:00 PM	24.2	251.9	7.4
7/14/2024	1:15:00 PM	22.2	258.5	5.9
7/14/2024	1:20:00 PM	27.1	249.6	7.1
7/14/2024	1:25:00 PM	28.4	288.8	7.8
7/14/2024	1:30:00 PM	28.6	265.3	10.4
7/14/2024	1:35:00 PM	28.3	281.2	6.5
7/14/2024	1:40:00 PM	28.1	280.6	10.7
7/14/2024	1:45:00 PM	26.5	295.9	7.2
7/14/2024	1:50:00 PM	27.2	260	5.9
7/14/2024	1:55:00 PM	28.1	268.9	10.1
7/14/2024	2:00:00 PM	29.3	253	5.2
7/14/2024	2:05:00 PM	29.1	237.5	7.4
7/14/2024	2:10:00 PM	29.5	265.1	5.2
7/14/2024	2:15:00 PM	31.7	239.1	5.3
7/14/2024	2:20:00 PM	33.9	263.1	6.5
7/14/2024	2:25:00 PM	30.7	295.6	7
7/14/2024	2:30:00 PM	31.2	286.9	6.2

Site: South Scottsdale				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	2:35:00 PM	30.7	257.3	10.9
7/14/2024	2:40:00 PM	29	237.8	8.3
7/14/2024	2:45:00 PM	30.6	264.1	11.2
7/14/2024	2:50:00 PM	31	284	10.4
7/14/2024	2:55:00 PM	28.6	277.4	7.4
7/14/2024	3:00:00 PM	31.7	276.2	10.4
7/14/2024	3:05:00 PM	33.9	275.5	8.7
7/14/2024	3:10:00 PM	31.8	295	5.4
7/14/2024	3:15:00 PM	32	259.6	7.9
7/14/2024	3:20:00 PM	31.2	260.9	6.5
7/14/2024	3:25:00 PM	30.8	257.6	8.4
7/14/2024	3:30:00 PM	32.8	259	8.4
7/14/2024	3:35:00 PM	30.7	266.5	9.1
7/14/2024	3:40:00 PM	34.5	249.1	10
7/14/2024	3:45:00 PM	39	268.6	7
7/14/2024	3:50:00 PM	35.1	278.8	7.2
7/14/2024	3:55:00 PM	30.8	270.1	11.6
7/14/2024	4:00:00 PM	30.4	249.2	8.1
7/14/2024	4:05:00 PM	29	251.1	10.3
7/14/2024	4:10:00 PM	27.4	256.6	11
7/14/2024	4:15:00 PM	25.7	239.2	9.1
7/14/2024	4:20:00 PM	28.8	269.3	11.2
7/14/2024	4:25:00 PM	29.7	261.7	9.7
7/14/2024	4:30:00 PM	30.1	256.7	7.6
7/14/2024	4:35:00 PM	31.9	252	10.3
7/14/2024	4:40:00 PM	32.5	258.8	9.6
7/14/2024	4:45:00 PM	32.5	241.7	11.2
7/14/2024	4:50:00 PM	31.2	254.8	7.3
7/14/2024	4:55:00 PM	29.2	266.6	8
7/14/2024	5:00:00 PM	27.4	297.7	9.5
7/14/2024	5:05:00 PM	25.9	271.1	7.6
7/14/2024	5:10:00 PM	27	268.1	9.5
7/14/2024	5:15:00 PM	28.8	268.9	9
7/14/2024	5:20:00 PM	29.1	251.6	9.1
7/14/2024	5:25:00 PM	30.6	262.2	8.6
7/14/2024	5:30:00 PM	32.2	244.4	9
7/14/2024	5:35:00 PM	33.5	250.3	8.7
7/14/2024	5:40:00 PM	36.7	263.8	9.4
7/14/2024	5:45:00 PM	37	269.7	9.4
7/14/2024	5:50:00 PM	35.8	260.8	11
7/14/2024	5:55:00 PM	35	266.6	11.5
7/14/2024	6:00:00 PM	34.3	269.6	9.5
7/14/2024	6:05:00 PM	34	253.5	7.6
7/14/2024	6:10:00 PM	35	264.5	10.6

Site: South Scottsdale				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	6:15:00 PM	36.6	246.9	9
7/14/2024	6:20:00 PM	34.6	255.6	8.4
7/14/2024	6:25:00 PM	34.4	255.1	9.5
7/14/2024	6:30:00 PM	34.6	259.5	11.5
7/14/2024	6:35:00 PM	33.5	262.4	9.1
7/14/2024	6:40:00 PM	33.6	267.2	9.4
7/14/2024	6:45:00 PM	32.1	244.2	8.9
7/14/2024	6:50:00 PM	30.8	251.1	9.4
7/14/2024	6:55:00 PM	29.9	254.7	7.3
7/14/2024	7:00:00 PM	28.8	252.6	6.4
7/14/2024	7:05:00 PM	31.4	251.8	6.5
7/14/2024	7:10:00 PM	32.1	233.5	7.8
7/14/2024	7:15:00 PM	34.7	236.5	8.1
7/14/2024	7:20:00 PM	34.5	245.4	7.8
7/14/2024	7:25:00 PM	33.3	255.9	6.6
7/14/2024	7:30:00 PM	30.6	253.6	6.6
7/14/2024	7:35:00 PM	32.4	258.4	5.9
7/14/2024	7:40:00 PM	36.8	248.5	7.6
7/14/2024	7:45:00 PM	37.9	237.9	8.6
7/14/2024	7:50:00 PM	37.8	237.3	7.1
7/14/2024	7:55:00 PM	35.6	247.9	9
7/14/2024	8:00:00 PM	32.8	241.1	9.9
7/14/2024	8:05:00 PM	31.4	237.8	7.8
7/14/2024	8:10:00 PM	32.5	233.3	8.9
7/14/2024	8:15:00 PM	30.1	226.9	9.9
7/14/2024	8:20:00 PM	30.7	224.9	8.7
7/14/2024	8:25:00 PM	32.8	224.3	8.5
7/14/2024	8:30:00 PM	33.3	229	10.6
7/14/2024	8:35:00 PM	34.7	232.9	13.2
7/14/2024	8:40:00 PM	54.8	236.2	15.9
7/14/2024	8:45:00 PM	71.1	224.2	18.8
7/14/2024	8:50:00 PM	225.1	196	22.9
7/14/2024	8:55:00 PM	2262.8	200.3	21
7/14/2024	9:00:00 PM	3321.5	188.5	17.8
7/14/2024	9:05:00 PM	3379.7	193.7	15
7/14/2024	9:10:00 PM	3345.2	207.7	19
7/14/2024	9:15:00 PM	3060.1	197.8	19.7
7/14/2024	9:20:00 PM	2638.8	205.3	17
7/14/2024	9:25:00 PM	2358.1	194.9	13.5
7/14/2024	9:30:00 PM	1986.1	195.6	10.7
7/14/2024	9:35:00 PM	1690	194.3	11.2
7/14/2024	9:40:00 PM	1505.5	203.7	10.4
7/14/2024	9:45:00 PM	1324	211.1	11.7
7/14/2024	9:50:00 PM	1125.1	213.2	8.1

Site: South Scottsdale				
Date	Time	PM_{10} (µg/m_3)	Wind Direction (Degree)	Windspeed (MPH)
7/14/2024	9:55:00 PM	912.8	219.9	8
7/14/2024	10:00:00 PM	742.6	267.3	5.7
7/14/2024	10:05:00 PM	636.2	355.5	8.9
7/14/2024	10:10:00 PM	647.8	0.4	10.8
7/14/2024	10:15:00 PM	650.6	350.3	8.6
7/14/2024	10:20:00 PM	583.4	354.5	8.4
7/14/2024	10:25:00 PM	516.5	352	10.7
7/14/2024	10:30:00 PM	441.6	348.3	7.1
7/14/2024	10:35:00 PM	390.2	347.3	11.4
7/14/2024	10:40:00 PM	335.2	7.6	9.1
7/14/2024	10:45:00 PM	281.6	4.9	7.9
7/14/2024	10:50:00 PM	227.4	6.1	8.7
7/14/2024	10:55:00 PM	164.1	16.2	6.3
7/14/2024	11:00:00 PM	115.7	20.1	5.2
7/14/2024	11:05:00 PM	104.6	3.9	4.7
7/14/2024	11:10:00 PM	109.7	349.3	5.6
7/14/2024	11:15:00 PM	99.2	339.5	4.5
7/14/2024	11:20:00 PM	106.4	324.7	4.2
7/14/2024	11:25:00 PM	139.6	291	4.7
7/14/2024	11:30:00 PM	158.1	303.2	4.5
7/14/2024	11:35:00 PM	203.4	307.6	6.1
7/14/2024	11:40:00 PM	321.4	318.2	6.2
7/14/2024	11:45:00 PM	419.3	325.4	6.3
7/14/2024	11:50:00 PM	488.3	338.8	7.5
7/14/2024	11:55:00 PM	564.6	350.2	7.9
	Average	161.1430556	261.3579861	7.986805556
	Max	3379.7	355.5	22.9
	Max Hour	64260.54842	4934.090461	11.61828966
	Min	16.6	5.9	0.4

Appendix B: NOAA Phoenix Sky Harbor Airport Station Data

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather Condition
9/2/2022	11:55 pm	WNW	9			10	
9/2/2022	11:51 pm	WNW	10			10	
9/2/2022	11:50 pm	W	10			10	
9/2/2022	11:45 pm	W	10			10	
9/2/2022	11:40 pm	WNW	5			10	
9/2/2022	11:35 pm	N	0			10	
9/2/2022	11:30 pm	N	0			10	
9/2/2022	11:25 pm	N	0			10	
9/2/2022	11:20 pm	N	0			10	
9/2/2022	11:15 pm	N	0			10	
9/2/2022	11:10 pm	SE	5			10	
9/2/2022	11:05 pm	SE	6			10	
9/2/2022	11:00 pm	SE	8			10	
9/2/2022	10:55 pm	SE	8			10	
9/2/2022	10:51 pm	ESE	7			10	
9/2/2022	10:50 pm	ESE	7			10	
9/2/2022	10:45 pm	SE	7			10	
9/2/2022	10:40 pm	SE	6			10	
9/2/2022	10:35 pm	ESE	7			10	
9/2/2022	10:30 pm	SSE	8			10	
9/2/2022	10:25 pm	SE	8			10	
9/2/2022	10:20 pm	ESE	8			10	
9/2/2022	10:15 pm	E	9			10	
9/2/2022	10:10 pm	E	7			10	
9/2/2022	10:05 pm	E	7			10	
9/2/2022	10:00 pm	E	8			10	
9/2/2022	9:55 pm	E	8			10	
9/2/2022	9:51 pm	E	8			10	
9/2/2022	9:50 pm	E	8			10	
9/2/2022	9:45 pm	ESE	7			10	
9/2/2022	9:40 pm	E	7			10	
9/2/2022	9:35 pm	E	8			10	
9/2/2022	9:30 pm	E	10			10	
9/2/2022	9:25 pm	E	7			10	
9/2/2022	9:20 pm	E	6			10	
9/2/2022	9:15 pm	ESE	7			10	
9/2/2022	9:10 pm	ENE	5			10	
9/2/2022	9:05 pm	NNE	8			10	
9/2/2022	9:00 pm	NE	6			10	
9/2/2022	8:55 pm	E	5			10	
9/2/2022	8:51 pm	E	7			10	
9/2/2022	8:50 pm	E	7			10	
9/2/2022	8:45 pm	E	9			10	
9/2/2022	8:40 pm	NE	7			10	
9/2/2022	8:35 pm	N	7			10	
9/2/2022	8:30 pm	NW	12			10	
9/2/2022	8:25 pm	NNW	13			10	
9/2/2022	8:20 pm	NW	10			10	
9/2/2022	8:15 pm	NW	8			10	
9/2/2022	8:10 pm	NW	9			10	
9/2/2022	8:05 pm	NNW	9			10	
9/2/2022	8:00 pm	NNW	7			10	
9/2/2022	7:55 pm	N	0			10	
9/2/2022	7:51 pm	N	0			10	
9/2/2022	7:50 pm	N	0			10	
9/2/2022	7:45 pm	N	0			10	
9/2/2022	7:40 pm	NNE	3			10	
9/2/2022	7:35 pm	ENE	3			10	
9/2/2022	7:30 pm	ESE	6			10	
9/2/2022	7:29 pm	SE	6			10	
9/2/2022	7:25 pm	ESE	9			10	
9/2/2022	7:20 pm	E	9			10	
9/2/2022	7:15 pm	NE	10			10	

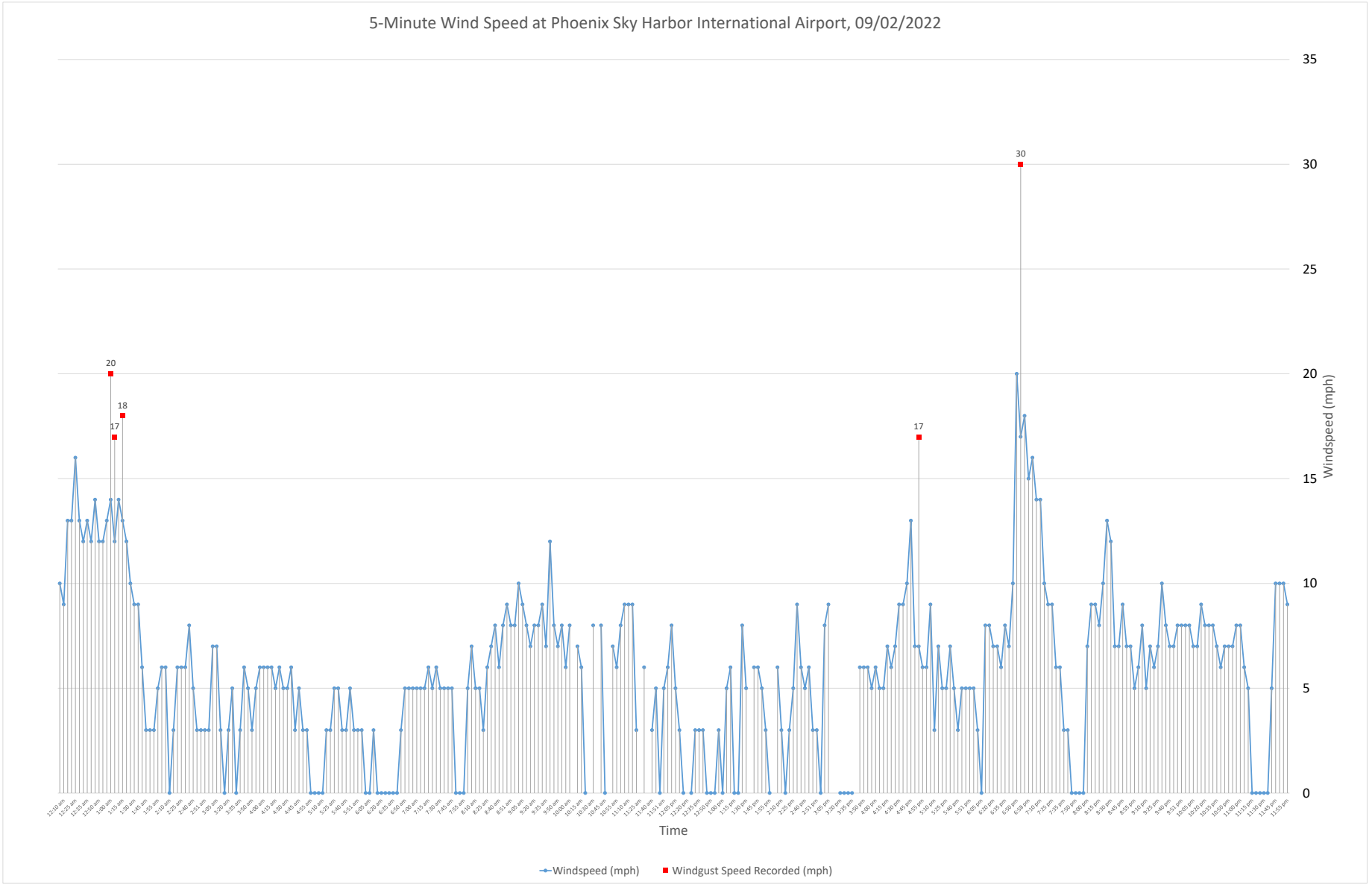
Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather Condition
9/2/2022	7:10 pm	ENE	14			10	
9/2/2022	7:05 pm	ENE	14			10	
9/2/2022	7:00 pm	E	16			10	
9/2/2022	6:58 pm	ENE	15			10	Thunder
9/2/2022	6:55 pm	NE	18			10	
9/2/2022	6:51 pm	ENE	17	G	30	10	
9/2/2022	6:50 pm	ENE	20			10	
9/2/2022	6:45 pm	ENE	10			10	
9/2/2022	6:40 pm	ESE	7			10	
9/2/2022	6:35 pm	E	8			10	
9/2/2022	6:30 pm	E	6			10	
9/2/2022	6:25 pm	ENE	7			10	
9/2/2022	6:20 pm	E	7			10	
9/2/2022	6:15 pm	ENE	8			10	
9/2/2022	6:10 pm	ENE	8			10	
9/2/2022	6:05 pm	N	0			10	
9/2/2022	6:00 pm	SW	3			10	
9/2/2022	5:55 pm	S	5			10	
9/2/2022	5:51 pm	SSW	5			10	
9/2/2022	5:50 pm	S	5			10	
9/2/2022	5:45 pm	SSE	5			10	
9/2/2022	5:40 pm	E	3			10	
9/2/2022	5:35 pm	E	5			10	
9/2/2022	5:30 pm	E	7			10	
9/2/2022	5:25 pm	ENE	5			10	
9/2/2022	5:20 pm	S	5			10	
9/2/2022	5:15 pm	SSE	7			10	
9/2/2022	5:10 pm	S	3			10	
9/2/2022	5:05 pm	SSE	9			10	
9/2/2022	5:00 pm	S	6			10	
9/2/2022	4:55 pm	SSE	6			10	
9/2/2022	4:51 pm	ENE	7	G	17	10	
9/2/2022	4:50 pm	ESE	7			10	
9/2/2022	4:45 pm	SSE	13			10	
9/2/2022	4:40 pm	SSE	10			10	
9/2/2022	4:35 pm	SE	9			10	
9/2/2022	4:30 pm	SSE	9			10	
9/2/2022	4:25 pm	S	7			10	
9/2/2022	4:20 pm	SE	6			10	
9/2/2022	4:15 pm	SE	7			10	
9/2/2022	4:10 pm	E	5			10	
9/2/2022	4:05 pm	NNW	5			10	
9/2/2022	4:00 pm	WSW	6			10	
9/2/2022	3:55 pm	W	5			10	
9/2/2022	3:51 pm	WSW	6			10	
9/2/2022	3:50 pm	SW	6			10	
9/2/2022	3:45 pm	SSW	6			10	
9/2/2022	3:40 pm					10	
9/2/2022	3:35 pm	N	0			10	
9/2/2022	3:30 pm	N	0			10	
9/2/2022	3:25 pm	N	0			10	
9/2/2022	3:20 pm	N	0			10	
9/2/2022	3:15 pm					10	
9/2/2022	3:10 pm					10	
9/2/2022	3:05 pm	SW	9			10	
9/2/2022	3:00 pm	SSW	8			10	
9/2/2022	2:55 pm	N	0			10	
9/2/2022	2:51 pm	SE	3			10	
9/2/2022	2:50 pm	SE	3			10	
9/2/2022	2:45 pm	SE	6			10	
9/2/2022	2:40 pm	S	5			10	
9/2/2022	2:35 pm	SW	6			10	
9/2/2022	2:30 pm	S	9			10	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather Condition
9/2/2022	2:25 pm	S	5			10	
9/2/2022	2:20 pm	SE	3			10	
9/2/2022	2:15 pm	N	0			10	
9/2/2022	2:10 pm	SW	3			10	
9/2/2022	2:05 pm	S	6			10	
9/2/2022	2:00 pm					10	
9/2/2022	1:55 pm	N	0			10	
9/2/2022	1:51 pm		3			10	
9/2/2022	1:50 pm	SW	5			10	
9/2/2022	1:45 pm	SW	6			10	
9/2/2022	1:40 pm	SW	6			10	
9/2/2022	1:35 pm					10	
9/2/2022	1:30 pm	SW	5			10	
9/2/2022	1:25 pm	SSW	8			10	
9/2/2022	1:20 pm	N	0			10	
9/2/2022	1:15 pm	N	0			10	
9/2/2022	1:10 pm	NNW	6			10	
9/2/2022	1:05 pm	WNW	5			10	
9/2/2022	1:00 pm	N	0			10	
9/2/2022	12:55 pm	S	3			10	
9/2/2022	12:51 pm	N	0			10	
9/2/2022	12:50 pm	N	0			10	
9/2/2022	12:45 pm	N	0			10	
9/2/2022	12:40 pm	SSW	3			10	
9/2/2022	12:35 pm	SSW	3			10	
9/2/2022	12:30 pm	SW	3			10	
9/2/2022	12:25 pm	N	0			10	
9/2/2022	12:20 pm					10	
9/2/2022	12:15 pm	N	0			10	
9/2/2022	12:10 pm	SE	3			10	
9/2/2022	12:05 pm	ESE	5			10	
9/2/2022	12:00 pm	SE	8			10	
9/2/2022	11:55 am	SSE	6			10	
9/2/2022	11:51 am		5			10	
9/2/2022	11:50 am	N	0			10	
9/2/2022	11:45 am	W	5			10	
9/2/2022	11:40 am	ESE	3			10	
9/2/2022	11:35 am					10	
9/2/2022	11:30 am	ESE	6			10	
9/2/2022	11:25 am					10	
9/2/2022	11:20 am	SSE	3			10	
9/2/2022	11:15 am	S	9			10	
9/2/2022	11:10 am	SSE	9			10	
9/2/2022	11:05 am	SE	9			10	
9/2/2022	11:00 am	ESE	8			10	
9/2/2022	10:55 am	S	6			10	
9/2/2022	10:51 am		7			10	
9/2/2022	10:50 am					10	
9/2/2022	10:45 am	N	0			10	
9/2/2022	10:40 am	E	8			10	
9/2/2022	10:35 am					10	
9/2/2022	10:30 am	SE	8			10	
9/2/2022	10:25 am					10	
9/2/2022	10:20 am	N	0			10	
9/2/2022	10:15 am	SE	6			10	
9/2/2022	10:10 am	SE	7			10	
9/2/2022	10:05 am					10	
9/2/2022	10:00 am	SSE	8			10	
9/2/2022	9:55 am	SE	6			10	
9/2/2022	9:51 am	SSE	8			10	
9/2/2022	9:50 am	SSE	7			10	
9/2/2022	9:45 am	SSE	8			10	
9/2/2022	9:40 am	ESE	12			10	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather Condition
9/2/2022	9:35 am	ESE	7			10	
9/2/2022	9:30 am	ESE	9			10	
9/2/2022	9:25 am	SE	8			10	
9/2/2022	9:20 am	SE	8			10	
9/2/2022	9:15 am	E	7			10	
9/2/2022	9:10 am	SSE	8			10	
9/2/2022	9:05 am	SE	9			10	
9/2/2022	9:00 am	SE	10			10	
9/2/2022	8:55 am	ESE	8			10	
9/2/2022	8:51 am	E	8			10	
9/2/2022	8:50 am	ESE	9			10	
9/2/2022	8:45 am	SSE	8			10	
9/2/2022	8:40 am	SE	6			10	
9/2/2022	8:35 am	SSE	8			10	
9/2/2022	8:30 am	SE	7			10	
9/2/2022	8:25 am	SSE	6			10	
9/2/2022	8:20 am	ESE	3			10	
9/2/2022	8:15 am	ESE	5			10	
9/2/2022	8:10 am	S	5			10	
9/2/2022	8:05 am	ESE	7			10	
9/2/2022	8:00 am	ESE	5			10	
9/2/2022	7:55 am	N	0			10	
9/2/2022	7:51 am	N	0			10	
9/2/2022	7:50 am	N	0			10	
9/2/2022	7:45 am	ESE	5			10	
9/2/2022	7:40 am	E	5			10	
9/2/2022	7:35 am	E	5			10	
9/2/2022	7:30 am	E	5			10	
9/2/2022	7:25 am	ESE	6			10	
9/2/2022	7:20 am	E	5			10	
9/2/2022	7:15 am	ENE	6			10	
9/2/2022	7:10 am	ENE	5			10	
9/2/2022	7:05 am	NE	5			10	
9/2/2022	7:00 am	E	5			10	
9/2/2022	6:55 am	ENE	5			10	
9/2/2022	6:51 am	ENE	5			10	
9/2/2022	6:50 am	NE	5			10	
9/2/2022	6:45 am	ENE	3			10	
9/2/2022	6:40 am	N	0			10	
9/2/2022	6:35 am	N	0			10	
9/2/2022	6:30 am	N	0			10	
9/2/2022	6:25 am	N	0			10	
9/2/2022	6:20 am	N	0			10	
9/2/2022	6:15 am	N	0			10	
9/2/2022	6:10 am	E	3			10	
9/2/2022	6:05 am	N	0			10	
9/2/2022	6:00 am	N	0			10	
9/2/2022	5:55 am	ESE	3			10	
9/2/2022	5:51 am	ESE	3			10	
9/2/2022	5:50 am	ESE	3			10	
9/2/2022	5:45 am	ESE	5			10	
9/2/2022	5:40 am	E	3			10	
9/2/2022	5:35 am	E	3			10	
9/2/2022	5:30 am	E	5			10	
9/2/2022	5:25 am	E	5			10	
9/2/2022	5:20 am	E	3			10	
9/2/2022	5:15 am	E	3			10	
9/2/2022	5:10 am	N	0			10	
9/2/2022	5:05 am	N	0			10	
9/2/2022	5:00 am	N	0			10	
9/2/2022	4:55 am	N	0			10	
9/2/2022	4:51 am	ESE	3			10	
9/2/2022	4:50 am	ESE	3			10	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather Condition
9/2/2022	4:45 am	ESE	5			10	
9/2/2022	4:40 am	SE	3			10	
9/2/2022	4:35 am	ESE	6			10	
9/2/2022	4:30 am	SSE	5			10	
9/2/2022	4:25 am	SSE	5			10	
9/2/2022	4:20 am	SE	6			10	
9/2/2022	4:15 am	SE	5			10	
9/2/2022	4:10 am	ESE	6			10	
9/2/2022	4:05 am	ESE	6			10	
9/2/2022	4:00 am	E	6			10	
9/2/2022	3:55 am	ESE	6			10	
9/2/2022	3:51 am	E	5			10	
9/2/2022	3:50 am	E	3			10	
9/2/2022	3:45 am	ESE	5			10	
9/2/2022	3:40 am	E	6			10	
9/2/2022	3:35 am	E	3			10	
9/2/2022	3:30 am	N	0			10	
9/2/2022	3:25 am	E	5			10	
9/2/2022	3:20 am	E	3			10	
9/2/2022	3:15 am	N	0			10	
9/2/2022	3:10 am	E	3			10	
9/2/2022	3:05 am	E	7			10	
9/2/2022	3:00 am	E	7			10	
9/2/2022	2:55 am	E	3			10	
9/2/2022	2:51 am	E	3			10	
9/2/2022	2:50 am	E	3			10	
9/2/2022	2:45 am	E	3			10	
9/2/2022	2:40 am	E	5			10	
9/2/2022	2:35 am	E	8			10	
9/2/2022	2:30 am	E	6			10	
9/2/2022	2:25 am	E	6			10	
9/2/2022	2:20 am	E	6			10	
9/2/2022	2:15 am	ENE	3			10	
9/2/2022	2:10 am	N	0			10	
9/2/2022	2:05 am	E	6			10	
9/2/2022	2:00 am	ENE	6			10	
9/2/2022	1:55 am	NE	5			10	
9/2/2022	1:51 am		3			10	
9/2/2022	1:50 am	ENE	3			10	
9/2/2022	1:45 am	E	3			10	
9/2/2022	1:40 am	ESE	6			10	
9/2/2022	1:35 am	ESE	9			10	
9/2/2022	1:30 am	SE	9			10	
9/2/2022	1:25 am	ESE	10			10	
9/2/2022	1:20 am	ESE	12			10	
9/2/2022	1:15 am	ESE	13	G	18	10	
9/2/2022	1:10 am	ESE	14			10	
9/2/2022	1:05 am	ESE	12	G	17	10	
9/2/2022	1:00 am	ESE	14	G	20	10	
9/2/2022	12:55 am	E	13			10	
9/2/2022	12:51 am	E	12			10	
9/2/2022	12:50 am	E	12			10	
9/2/2022	12:45 am	E	14			10	
9/2/2022	12:40 am	E	12			10	
9/2/2022	12:35 am	E	13			10	
9/2/2022	12:33 am	E	12			10	
9/2/2022	12:30 am	E	13			10	
9/2/2022	12:25 am	E	16			10	
9/2/2022	12:20 am	E	13			10	
9/2/2022	12:15 am	E	13			10	
9/2/2022	12:10 am	SE	9			10	
9/2/2022	12:05 am	SSE	10			10	
9/2/2022	12:00 am	SE	15			10	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather Condition
9/2/2022	11:55 pm	SE	15			10	
9/1/2024	11:51 pm	SE	13	G	25	10	
9/1/2024	11:50 pm	SE	15			10	
9/1/2024	11:45 pm	SSE	9			10	
9/1/2024	11:40 pm	SE	10			10	
9/1/2024	11:35 pm	SSE	7			9	
9/1/2024	11:30 pm	SSE	12			6	Haze, Blowing dust
9/1/2024	11:25 pm	SSE	14	G	20	5	Haze, Blowing dust
9/1/2024	11:22 pm	SSE	13	G	24	5	Haze, Blowing dust
9/1/2024	11:20 pm	SE	13			4	Haze, Blowing dust
9/1/2024	11:15 pm	SE	18	G	24	2.5	Haze, Blowing dust
9/1/2024	11:10 pm	SE	14			2	Haze, Blowing dust
9/1/2024	11:05 pm	SE	16			2	Haze, Blowing dust
9/1/2024	11:02 pm	SSE	13			2	Haze, Blowing dust
9/1/2024	11:00 pm	SSE	14			2.5	Haze, Blowing dust
9/1/2024	10:55 pm	SSE	10			3	Haze, Blowing dust
9/1/2024	10:51 pm	SE	13	G	23	3	Haze, Blowing dust
9/1/2024	10:50 pm	SE	15			4	Haze, Blowing dust
9/1/2024	10:45 pm	SE	16	G	22	7	
9/1/2024	10:40 pm	SE	23	G	33	10	
9/1/2024	10:35 pm	SSE	10			10	
9/1/2024	10:30 pm	SSE	9			10	
9/1/2024	10:25 pm	SSE	7			10	
9/1/2024	10:20 pm	SSE	5			10	
9/1/2024	10:15 pm	N	0			10	
9/1/2024	10:10 pm	S	3			10	
9/1/2024	10:05 pm	S	3			10	
9/1/2024	10:00 pm	S	5			10	
9/1/2024	9:55 pm	SSW	6			10	
9/1/2024	9:51 pm	S	5			10	
9/1/2024	9:50 pm	S	6			10	
9/1/2024	9:45 pm	SSW	7			10	
9/1/2024	9:40 pm	SSW	6			10	
9/1/2024	9:35 pm	S	5			10	
9/1/2024	9:30 pm	S	6			10	
9/1/2024	9:25 pm	S	7			10	
9/1/2024	9:20 pm	S	7			10	
9/1/2024	9:15 pm	S	7			10	
9/1/2024	9:10 pm	S	6			10	
9/1/2024	9:05 pm	S	5			10	
9/1/2024	9:00 pm	S	5			10	
9/1/2024	8:55 pm	S	6			10	
9/1/2024	8:51 pm	SSW	5			10	
9/1/2024	8:50 pm	SSW	5			10	



NOAA Phoenix Sky Harbor International Airport Station, Time Series Viewer - Weather Conditions for 09/02/2022

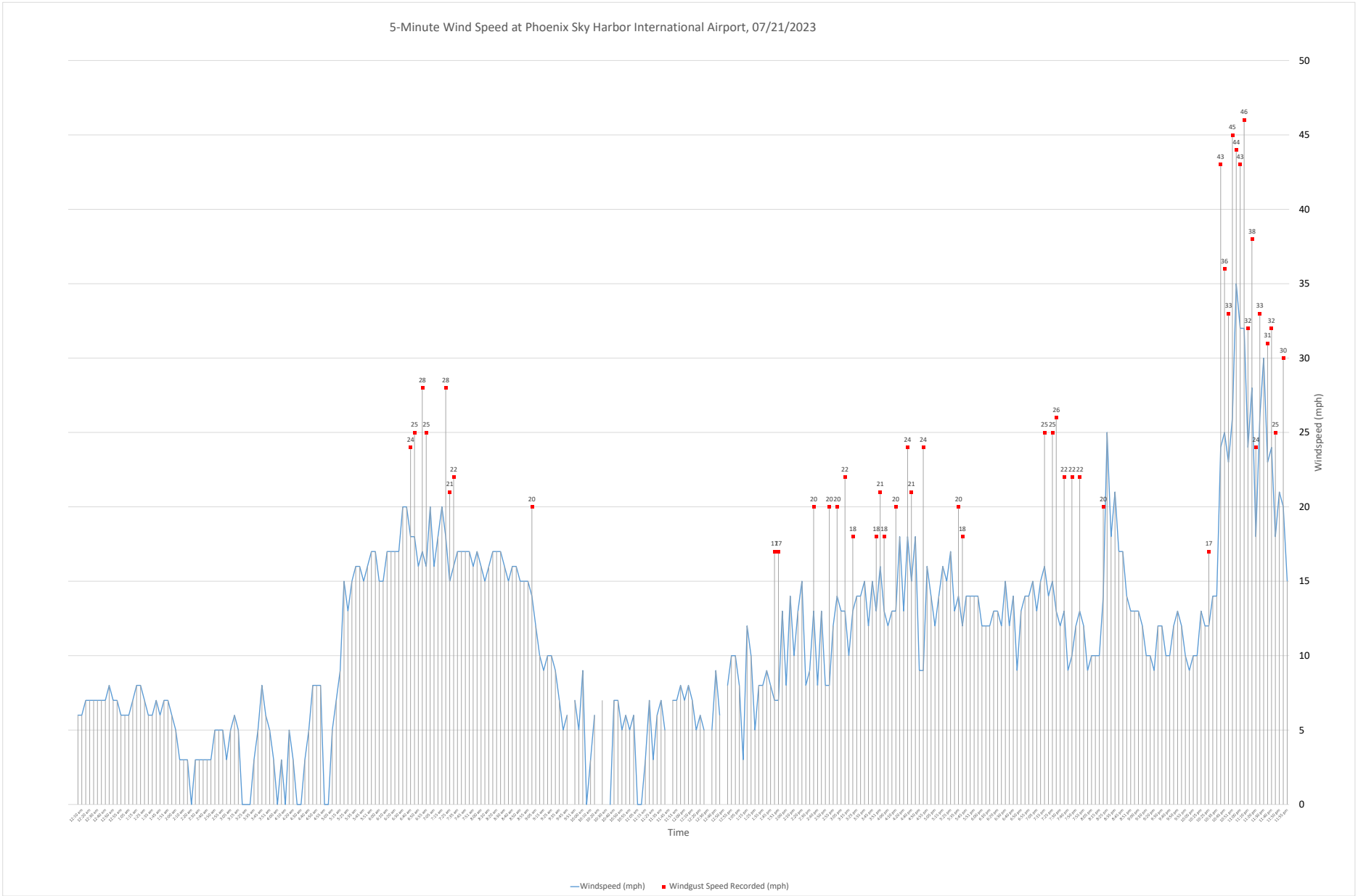
Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather condtions
7/21/2023	11:55 pm	SSW	15			10	
7/21/2023	11:51 pm	SSW	20	G	30	10	
7/21/2023	11:50 pm	S	21			10	
7/21/2023	11:45 pm	S	18	G	25	8	
7/21/2023	11:40 pm	SSW	24	G	32	7	
7/21/2023	11:35 pm	S	23	G	31	7	
7/21/2023	11:30 pm	S	30			7	
7/21/2023	11:25 pm	S	26	G	33	7	
7/21/2023	11:20 pm	S	18	G	24	6	Haze
7/21/2023	11:15 pm	S	28	G	38	5	Haze
7/21/2023	11:10 pm	S	24	G	32	4	Haze
7/21/2023	11:05 pm	S	32	G	46	4	Haze
7/21/2023	11:00 pm	S	32	G	43	4	Blowing dust
7/21/2023	10:55 pm	S	35	G	44	3	Blowing dust
7/21/2023	10:51 pm	SSE	26	G	45	3	Blowing dust
7/21/2023	10:50 pm	SSE	23	G	33	3	Blowing dust
7/21/2023	10:45 pm	SSE	25	G	36	5	Haze
7/21/2023	10:40 pm	S	24	G	43	10	
7/21/2023	10:35 pm	SSE	14			10	
7/21/2023	10:30 pm	SSE	14			10	
7/21/2023	10:25 pm	S	12	G	17	10	
7/21/2023	10:20 pm	SSE	12			10	
7/21/2023	10:15 pm	SSE	13			10	
7/21/2023	10:10 pm	SSE	10			10	
7/21/2023	10:05 pm	SSE	10			10	
7/21/2023	10:00 pm	SE	9			10	
7/21/2023	9:55 pm	ESE	10			10	
7/21/2023	9:51 pm	ESE	12			10	
7/21/2023	9:50 pm	ESE	13			10	
7/21/2023	9:45 pm	ESE	12			10	
7/21/2023	9:40 pm	E	10			10	
7/21/2023	9:35 pm	E	10			10	
7/21/2023	9:30 pm	E	12			10	
7/21/2023	9:25 pm	E	12			10	
7/21/2023	9:20 pm	E	9			10	
7/21/2023	9:15 pm	E	10			10	
7/21/2023	9:10 pm	E	10			10	
7/21/2023	9:05 pm	E	12			10	
7/21/2023	9:00 pm	E	13			10	
7/21/2023	8:55 pm	E	13			10	
7/21/2023	8:51 pm	E	13			10	
7/21/2023	8:50 pm	E	14			10	
7/21/2023	8:45 pm	ENE	17			8	
7/21/2023	8:40 pm	E	17			7	
7/21/2023	8:35 pm	ENE	21			7	
7/21/2023	8:30 pm	ENE	18			8	
7/21/2023	8:25 pm	ENE	25			9	
7/21/2023	8:20 pm	NNE	14	G	20	10	
7/21/2023	8:15 pm	NE	10			10	
7/21/2023	8:10 pm	NNE	10			10	
7/21/2023	8:05 pm	NNE	10			10	
7/21/2023	8:00 pm	NNE	9			10	
7/21/2023	7:55 pm	N	12			10	
7/21/2023	7:51 pm	N	13	G	22	10	
7/21/2023	7:50 pm	N	12			10	
7/21/2023	7:45 pm	NNW	10	G	22	10	
7/21/2023	7:40 pm	NNW	9			10	
7/21/2023	7:35 pm	NNW	13	G	22	10	
7/21/2023	7:30 pm	NW	12			9	
7/21/2023	7:26 pm	NNW	13	G	26	10	
7/21/2023	7:25 pm	NNW	15	G	25	10	
7/21/2023	7:20 pm	NNW	14			10	
7/21/2023	7:15 pm	NW	16	G	25	10	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather condtions
7/21/2023	7:10 pm	WNW	15			10	
7/21/2023	7:05 pm	W	13			10	
7/21/2023	7:00 pm	W	15			10	
7/21/2023	6:55 pm	W	14			10	
7/21/2023	6:51 pm	W	14			10	
7/21/2023	6:50 pm	W	13			10	
7/21/2023	6:45 pm	WSW	9			10	
7/21/2023	6:40 pm	WSW	14			10	
7/21/2023	6:35 pm	WSW	12			10	
7/21/2023	6:30 pm	W	15			10	
7/21/2023	6:25 pm	W	12			10	
7/21/2023	6:20 pm	WSW	13			10	
7/21/2023	6:15 pm	W	13			10	
7/21/2023	6:10 pm	WSW	12			10	
7/21/2023	6:05 pm	WSW	12			10	
7/21/2023	6:00 pm	W	12			10	
7/21/2023	5:55 pm	W	14			10	
7/21/2023	5:51 pm	W	14			10	
7/21/2023	5:50 pm	W	14			10	
7/21/2023	5:45 pm	WSW	14			10	
7/21/2023	5:40 pm	WSW	12	G	18	10	
7/21/2023	5:35 pm	W	14	G	20	10	
7/21/2023	5:30 pm	W	13			10	
7/21/2023	5:25 pm	W	17			10	
7/21/2023	5:20 pm	WNW	15			10	
7/21/2023	5:15 pm	W	16			10	
7/21/2023	5:10 pm	WNW	14			10	
7/21/2023	5:05 pm	W	12			10	
7/21/2023	5:00 pm	W	14			10	
7/21/2023	4:55 pm	W	16			10	
7/21/2023	4:51 pm	WSW	9	G	24	10	
7/21/2023	4:50 pm	W	9			10	
7/21/2023	4:45 pm	WNW	18			10	
7/21/2023	4:40 pm	W	15	G	21	10	
7/21/2023	4:30 pm	WNW	18	G	24	10	
7/21/2023	4:20 pm	WNW	13			10	
7/21/2023	4:15 pm	W	18			10	
7/21/2023	4:10 pm	W	13	G	20	10	
7/21/2023	4:05 pm	W	13			10	
7/21/2023	4:00 pm	WSW	12			10	
7/21/2023	3:55 pm	W	13	G	18	10	
7/21/2023	3:51 pm	WNW	16	G	21	10	
7/21/2023	3:50 pm	WNW	13	G	18	10	
7/21/2023	3:45 pm	WNW	15			10	
7/21/2023	3:40 pm	W	12			10	
7/21/2023	3:35 pm	WNW	15			10	
7/21/2023	3:30 pm	WNW	14			10	
7/21/2023	3:25 pm	WNW	14			10	
7/21/2023	3:20 pm	W	13	G	18	10	
7/21/2023	3:15 pm	WSW	10			10	
7/21/2023	3:10 pm	WNW	13	G	22	10	
7/21/2023	3:05 pm	WSW	13			10	
7/21/2023	3:00 pm	W	14	G	20	10	
7/21/2023	2:55 pm	W	12			10	
7/21/2023	2:51 pm	WSW	8	G	20	10	
7/21/2023	2:50 pm	WSW	8			10	
7/21/2023	2:45 pm	W	13			10	
7/21/2023	2:40 pm	WSW	8			10	
7/21/2023	2:35 pm	W	13	G	20	10	
7/21/2023	2:30 pm	WSW	9			10	
7/21/2023	2:25 pm	W	8			10	
7/21/2023	2:20 pm	W	15			10	
7/21/2023	2:15 pm	W	13			10	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather condtions
7/21/2023	2:10 pm	WSW	10			10	
7/21/2023	2:05 pm	W	14			8	
7/21/2023	2:00 pm	SW	8			8	
7/21/2023	1:55 pm	SSW	13			9	
7/21/2023	1:51 pm	W	7	G	17	10	
7/21/2023	1:50 pm	W	7	G	17	10	
7/21/2023	1:45 pm	WNW	8			10	
7/21/2023	1:40 pm	W	9			10	
7/21/2023	1:35 pm	NW	8			10	
7/21/2023	1:30 pm	WSW	8			10	
7/21/2023	1:25 pm	WSW	5			9	
7/21/2023	1:20 pm	W	10			9	
7/21/2023	1:15 pm	W	12			10	
7/21/2023	1:10 pm	W	3			10	
7/21/2023	1:05 pm	WNW	8			10	
7/21/2023	1:00 pm	W	10			10	
7/21/2023	12:55 pm	W	10			10	
7/21/2023	12:51 pm	W	8			10	
7/21/2023	12:50 pm					10	
7/21/2023	12:45 pm	SSE	6			10	
7/21/2023	12:40 pm	S	9			10	
7/21/2023	12:35 pm	S	5			8	
7/21/2023	12:30 pm					8	
7/21/2023	12:25 pm	WSW	5			9	
7/21/2023	12:20 pm	NW	6			10	
7/21/2023	12:15 pm	WNW	5			10	
7/21/2023	12:10 pm	W	7			10	
7/21/2023	12:05 pm	WSW	8			10	
7/21/2023	12:00 pm	SSW	7			10	
7/21/2023	11:55 am	SW	8			10	
7/21/2023	11:51 am		7			10	
7/21/2023	11:50 am	W	7			10	
7/21/2023	11:45 am					10	
7/21/2023	11:40 am	S	5			9	
7/21/2023	11:35 am	SSW	7			9	
7/21/2023	11:30 am	W	6			9	
7/21/2023	11:25 am	SSW	3			9	
7/21/2023	11:20 am	S	7			9	
7/21/2023	11:15 am	ESE	3			9	
7/21/2023	11:10 am	N	0			10	
7/21/2023	11:05 am	N	0			10	
7/21/2023	11:00 am	SSW	6			9	
7/21/2023	10:55 am	S	5			9	
7/21/2023	10:51 am	WSW	6			10	
7/21/2023	10:50 am	SW	5			10	
7/21/2023	10:45 am	SW	7			10	
7/21/2023	10:40 am	S	7			9	
7/21/2023	10:35 am	N	0			9	
7/21/2023	10:30 am					9	
7/21/2023	10:25 am	W	7			10	
7/21/2023	10:20 am					10	
7/21/2023	10:15 am	SW	6			10	
7/21/2023	10:10 am	NNW	3			10	
7/21/2023	10:05 am	N	0			10	
7/21/2023	10:00 am	WNW	9			10	
7/21/2023	9:55 am	NNW	5			10	
7/21/2023	9:51 am	NW	7			10	
7/21/2023	9:50 am					10	
7/21/2023	9:45 am	NW	6			10	
7/21/2023	9:40 am	NW	5			10	
7/21/2023	9:35 am	NW	7			10	
7/21/2023	9:30 am	NW	9			10	
7/21/2023	9:25 am	NW	10			10	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather condtions
7/21/2023	9:20 am	WNW	10			9	
7/21/2023	9:15 am	WNW	9			9	
7/21/2023	9:10 am	WNW	10			9	
7/21/2023	9:05 am	WNW	12			8	
7/21/2023	9:00 am	WNW	14	G	20	8	
7/21/2023	8:55 am	NW	15			9	
7/21/2023	8:51 am	NW	15			10	
7/21/2023	8:50 am	NW	15			10	
7/21/2023	8:45 am	NW	16			10	
7/21/2023	8:40 am	WNW	16			10	
7/21/2023	8:35 am	NW	15			10	
7/21/2023	8:30 am	NW	16			10	
7/21/2023	8:25 am	NW	17			10	
7/21/2023	8:20 am	WNW	17			10	
7/21/2023	8:15 am	WNW	17			10	
7/21/2023	8:10 am	WNW	16			10	
7/21/2023	8:05 am	W	15			10	
7/21/2023	8:00 am	WNW	16			8	
7/21/2023	7:55 am	WNW	17			8	
7/21/2023	7:51 am	W	16			10	
7/21/2023	7:50 am	W	17			10	
7/21/2023	7:45 am	WNW	17			10	
7/21/2023	7:40 am	WNW	17			10	
7/21/2023	7:35 am	WNW	17			10	
7/21/2023	7:30 am	WNW	16	G	22	10	
7/21/2023	7:25 am	NW	15	G	21	10	
7/21/2023	7:20 am	NW	18	G	28	10	
7/21/2023	7:15 am	WNW	20			10	
7/21/2023	7:10 am	NW	18			10	
7/21/2023	7:05 am	WNW	16			6	Haze
7/21/2023	7:00 am	WNW	20			6	Haze
7/21/2023	6:55 am	NW	16	G	25	6	Haze
7/21/2023	6:51 am	NW	17	G	28	10	
7/21/2023	6:50 am	NW	16			10	
7/21/2023	6:45 am	WNW	18	G	25	10	
7/21/2023	6:40 am	WNW	18	G	24	10	
7/21/2023	6:35 am	WNW	20			10	
7/21/2023	6:30 am	WNW	20			10	
7/21/2023	6:25 am	WNW	17			10	
7/21/2023	6:20 am	W	17			10	
7/21/2023	6:15 am	W	17			10	
7/21/2023	6:10 am	WNW	17			10	
7/21/2023	6:05 am	WNW	15			10	
7/21/2023	6:00 am	WNW	15			10	
7/21/2023	5:55 am	W	17			6	Haze
7/21/2023	5:51 am	W	17			10	
7/21/2023	5:50 am	W	16			10	
7/21/2023	5:45 am	WNW	15			10	
7/21/2023	5:40 am	WNW	16			7	
7/21/2023	5:35 am	WNW	16			8	
7/21/2023	5:30 am	WNW	15			10	
7/21/2023	5:25 am	NW	13			10	
7/21/2023	5:20 am	WNW	15			10	
7/21/2023	5:15 am	WNW	9			10	
7/21/2023	5:10 am	NW	7			10	
7/21/2023	5:05 am	W	5			10	
7/21/2023	5:00 am	N	0			10	
7/21/2023	4:55 am	N	0			10	
7/21/2023	4:51 am	SSE	8			10	
7/21/2023	4:50 am	SSE	8			10	
7/21/2023	4:45 am	S	8			10	
7/21/2023	4:40 am	SSW	5			10	
7/21/2023	4:35 am	WSW	3			9	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather condtions
7/21/2023	4:30 am	N	0			9	
7/21/2023	4:25 am	N	0			9	
7/21/2023	4:20 am	E	3			10	
7/21/2023	4:15 am	ESE	5			10	
7/21/2023	4:10 am	N	0			10	
7/21/2023	4:05 am	N	3			10	
7/21/2023	4:00 am	N	0			10	
7/21/2023	3:55 am	NE	3			10	
7/21/2023	3:51 am	ENE	5			10	
7/21/2023	3:50 am	ENE	6			10	
7/21/2023	3:45 am	E	8			10	
7/21/2023	3:40 am	ENE	5			10	
7/21/2023	3:35 am	NE	3			10	
7/21/2023	3:30 am	N	0			10	
7/21/2023	3:25 am	N	0			10	
7/21/2023	3:20 am	N	0			10	
7/21/2023	3:15 am	NW	5			10	
7/21/2023	3:10 am	NW	6			10	
7/21/2023	3:05 am	NW	5			10	
7/21/2023	3:00 am	NW	3			10	
7/21/2023	2:55 am	NNW	5			10	
7/21/2023	2:51 am	NNW	5			10	
7/21/2023	2:50 am	N	5			10	
7/21/2023	2:45 am	N	3			10	
7/21/2023	2:40 am	W	3			10	
7/21/2023	2:35 am	WSW	3			10	
7/21/2023	2:30 am	SW	3			10	
7/21/2023	2:25 am	SW	3			10	
7/21/2023	2:20 am	N	0			10	
7/21/2023	2:15 am	W	3			10	
7/21/2023	2:10 am	WSW	3			10	
7/21/2023	2:05 am	WSW	3			10	
7/21/2023	2:00 am	WSW	5			10	
7/21/2023	1:55 am	WSW	6			10	
7/21/2023	1:51 am	WSW	7			10	
7/21/2023	1:50 am	WSW	7			10	
7/21/2023	1:45 am	WSW	6			10	
7/21/2023	1:40 am	SW	7			10	
7/21/2023	1:35 am	SW	6			10	
7/21/2023	1:30 am	W	6			10	
7/21/2023	1:25 am	W	7			10	
7/21/2023	1:20 am	W	8			10	
7/21/2023	1:15 am	W	8			10	
7/21/2023	1:10 am	W	7			10	
7/21/2023	1:05 am	W	6			10	
7/21/2023	1:00 am	W	6			10	
7/21/2023	12:55 am	W	6			10	
7/21/2023	12:51 am	W	7			10	
7/21/2023	12:50 am	W	7			10	
7/21/2023	12:45 am	W	8			10	
7/21/2023	12:40 am	WNW	7			10	
7/21/2023	12:35 am	W	7			10	
7/21/2023	12:30 am	W	7			10	
7/21/2023	12:25 am	W	7			10	
7/21/2023	12:20 am	W	7			10	
7/21/2023	12:15 am	W	7			10	
7/21/2023	12:10 am	W	6			10	
7/21/2023	12:05 am	W	6			10	



NOAA Phoenix Sky Harbor International Airport Station, Time Series Viewer - Weather Conditions for 07/21/2023

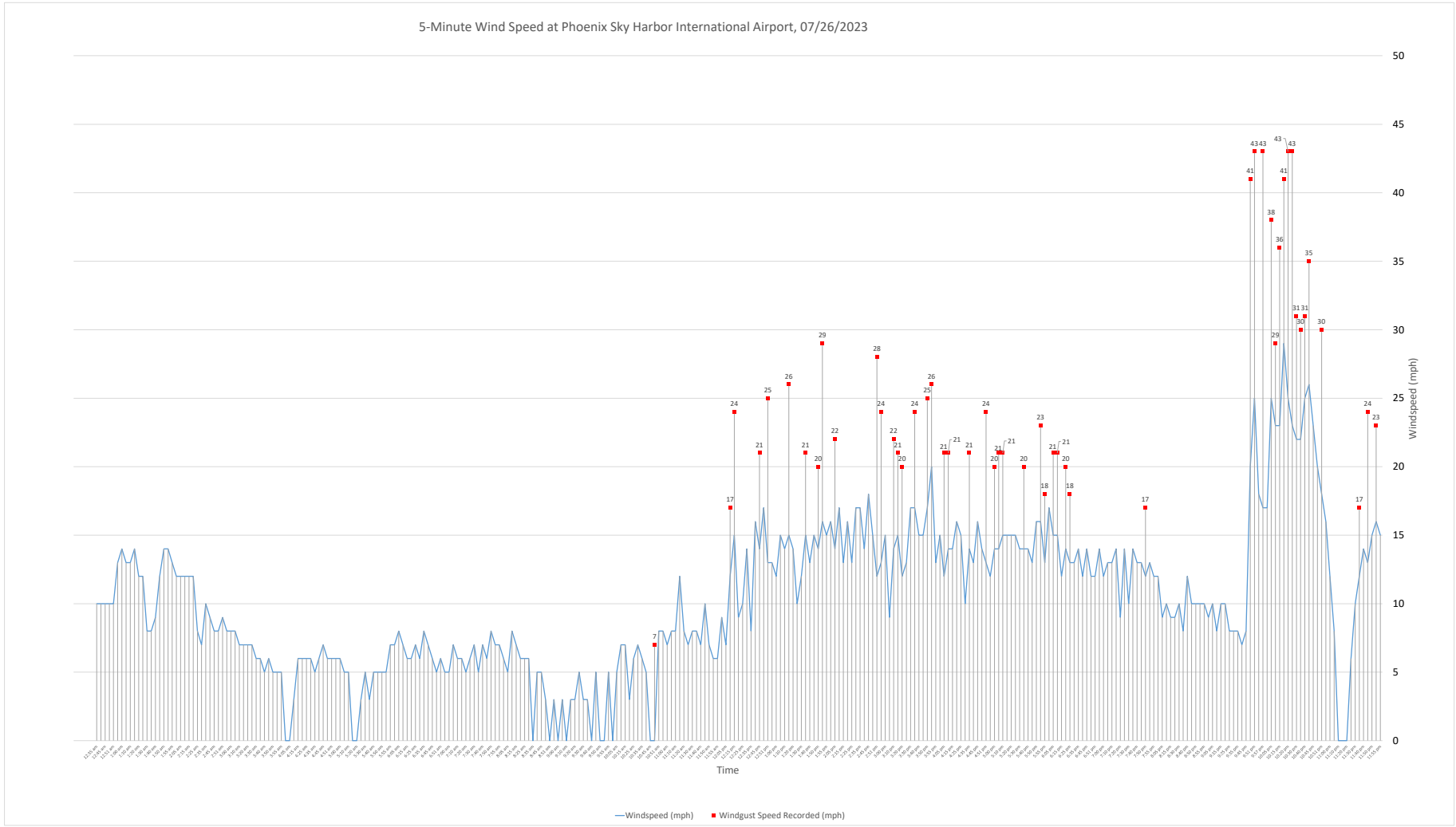
Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather Condition
7/26/2023	11:55 pm	SSE	15			10	
7/26/2023	11:51 pm	SSE	16	G	23	10	
7/26/2023	11:50 pm	SSE	15			10	
7/26/2023	11:45 pm	SE	13	G	24	10	
7/26/2023	11:40 pm	SSE	14			10	
7/26/2023	11:35 pm	SSE	12	G	17	10	
7/26/2023	11:30 pm	SSE	10			10	
7/26/2023	11:25 pm	E	6			10	
7/26/2023	11:20 pm	N	0			10	
7/26/2023	11:15 pm	N	0			10	
7/26/2023	11:10 pm	N	0			10	
7/26/2023	11:05 pm	SSE	8			10	
7/26/2023	11:00 pm	SE	12			10	
7/26/2023	10:55 pm	E	16			10	
7/26/2023	10:51 pm	E	18	G	30	9	Thunder
7/26/2023	10:50 pm	E	20			9	
7/26/2023	10:45 pm	E	23			8	
7/26/2023	10:43 pm	E	26	G	35	8	Thunder
7/26/2023	10:40 pm	ENE	25	G	31	8	
7/26/2023	10:35 pm	E	22	G	30	6	Blowing dust
7/26/2023	10:30 pm	E	22	G	31	3	Blowing dust
7/26/2023	10:25 pm	ESE	23	G	43	2.5	Blowing dust
7/26/2023	10:20 pm	SE	25	G	43	2	Blowing dust
7/26/2023	10:18 pm	SE	29	G	41	0.5	
7/26/2023	10:15 pm	SSE	23	G	36	0.5	
7/26/2023	10:10 pm	SSE	23	G	29	0.5	
7/26/2023	10:05 pm	SSE	25	G	38	0.5	
7/26/2023	10:00 pm	S	17			0.5	
7/26/2023	9:57 pm	S	17	G	43	0.5	
7/26/2023	9:55 pm	SSE	18			1.75	Blowing dust
7/26/2023	9:51 pm	SSE	25	G	43	3	Blowing dust
7/26/2023	9:50 pm	SSE	20	G	41	6	Blowing dust
7/26/2023	9:45 pm	S	8			10	
7/26/2023	9:40 pm	WSW	7			10	
7/26/2023	9:35 pm	WSW	8			10	
7/26/2023	9:30 pm	WSW	8			10	
7/26/2023	9:25 pm	WSW	8			10	
7/26/2023	9:20 pm	WSW	10			10	
7/26/2023	9:15 pm	W	10			10	
7/26/2023	9:10 pm	WSW	8			10	
7/26/2023	9:05 pm	WSW	10			10	
7/26/2023	9:00 pm	WSW	9			10	
7/26/2023	8:55 pm	WSW	10			10	
7/26/2023	8:51 pm	WSW	10			10	
7/26/2023	8:50 pm	WSW	10			10	
7/26/2023	8:45 pm	WSW	10			10	
7/26/2023	8:40 pm	W	12			10	
7/26/2023	8:35 pm	W	8			10	
7/26/2023	8:30 pm	WSW	10			10	
7/26/2023	8:25 pm	WSW	9			10	
7/26/2023	8:15 pm	W	9			10	
7/26/2023	8:10 pm	W	10			10	
7/26/2023	8:05 pm	W	9			10	
7/26/2023	8:00 pm	W	12			10	
7/26/2023	7:55 pm	W	12			10	
7/26/2023	7:51 pm	W	13			10	
7/26/2023	7:50 pm	W	12	G	17	10	
7/26/2023	7:45 pm	W	13			10	
7/26/2023	7:40 pm	W	13			10	
7/26/2023	7:35 pm	W	14			10	
7/26/2023	7:30 pm	W	10			10	
7/26/2023	7:25 pm	W	14			10	
7/26/2023	7:20 pm	WSW	9			10	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather Condition
7/26/2023	7:15 pm	WSW	14			10	
7/26/2023	7:10 pm	WSW	13			10	
7/26/2023	7:05 pm	W	13			10	
7/26/2023	7:00 pm	W	12			10	
7/26/2023	6:55 pm	WSW	14			10	
7/26/2023	6:51 pm	W	12			10	
7/26/2023	6:50 pm	W	12			10	
7/26/2023	6:45 pm	W	14			10	
7/26/2023	6:40 pm	WSW	12			10	
7/26/2023	6:35 pm	W	14			10	
7/26/2023	6:30 pm	WSW	13			10	
7/26/2023	6:25 pm	W	13	G	18	10	
7/26/2023	6:20 pm	WSW	14	G	20	10	
7/26/2023	6:15 pm	WSW	12			10	
7/26/2023	6:10 pm	WSW	15	G	21	10	
7/26/2023	6:05 pm	W	15	G	21	10	
7/26/2023	6:00 pm	W	17			10	
7/26/2023	5:55 pm	W	13	G	18	10	
7/26/2023	5:51 pm	WSW	16	G	23	10	
7/26/2023	5:50 pm	WSW	16			10	
7/26/2023	5:45 pm	W	13			10	
7/26/2023	5:40 pm	W	14			10	
7/26/2023	5:35 pm	W	14	G	20	10	
7/26/2023	5:30 pm	W	14			10	
7/26/2023	5:25 pm	WSW	15			10	
7/26/2023	5:20 pm	W	15			10	
7/26/2023	5:15 pm	W	15			10	
7/26/2023	5:10 pm	W	15	G	21	10	
7/26/2023	5:05 pm	W	14	G	21	10	
7/26/2023	5:00 pm	WSW	14	G	20	10	
7/26/2023	4:55 pm	W	12			10	
7/26/2023	4:51 pm	WSW	13	G	24	10	
7/26/2023	4:50 pm	W	14			10	
7/26/2023	4:45 pm	W	16			10	
7/26/2023	4:40 pm	W	13			10	
7/26/2023	4:35 pm	W	14	G	21	10	
7/26/2023	4:30 pm	WNW	10			10	
7/26/2023	4:25 pm	W	15			10	
7/26/2023	4:20 pm	W	16			10	
7/26/2023	4:15 pm	WSW	14			10	
7/26/2023	4:10 pm	W	14	G	21	10	
7/26/2023	4:05 pm	WSW	12	G	21	10	
7/26/2023	4:00 pm	W	15			10	
7/26/2023	3:55 pm	W	13			10	
7/26/2023	3:51 pm	W	20	G	26	10	
7/26/2023	3:50 pm	W	17	G	25	10	
7/26/2023	3:45 pm	W	15			10	
7/26/2023	3:40 pm	WSW	15			10	
7/26/2023	3:35 pm	W	17	G	24	10	
7/26/2023	3:30 pm	W	17			10	
7/26/2023	3:25 pm	W	13			10	
7/26/2023	3:20 pm	W	12	G	20	10	
7/26/2023	3:15 pm	WNW	15	G	21	10	
7/26/2023	3:10 pm	WNW	14	G	22	10	
7/26/2023	3:05 pm	W	9			10	
7/26/2023	3:00 pm	W	15			10	
7/26/2023	2:55 pm	W	13	G	24	10	
7/26/2023	2:51 pm	W	12	G	28	10	
7/26/2023	2:50 pm	W	15			10	
7/26/2023	2:45 pm	W	18			10	
7/26/2023	2:40 pm	W	14			10	
7/26/2023	2:35 pm	W	17			10	
7/26/2023	2:30 pm	W	17			10	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather Condition
7/26/2023	2:25 pm	WNW	13			10	
7/26/2023	2:20 pm	W	16			10	
7/26/2023	2:15 pm	WSW	13			10	
7/26/2023	2:10 pm	W	17			10	
7/26/2023	2:05 pm	WSW	14	G	22	10	
7/26/2023	2:00 pm	WNW	16			10	
7/26/2023	1:55 pm	WSW	15			10	
7/26/2023	1:51 pm	WSW	16	G	29	10	
7/26/2023	1:50 pm	WSW	14	G	20	10	
7/26/2023	1:45 pm	W	15			10	
7/26/2023	1:40 pm	WSW	13			10	
7/26/2023	1:35 pm	WSW	15	G	21	10	
7/26/2023	1:30 pm	W	12			10	
7/26/2023	1:25 pm	WSW	10			10	
7/26/2023	1:20 pm	W	14			10	
7/26/2023	1:15 pm	W	15	G	26	10	
7/26/2023	1:10 pm	W	14			10	
7/26/2023	1:05 pm	W	15			10	
7/26/2023	1:00 pm	WSW	12			10	
7/26/2023	12:55 pm	WSW	13			10	
7/26/2023	12:51 pm	W	13	G	25	10	
7/26/2023	12:50 pm	W	17			10	
7/26/2023	12:45 pm	WNW	14	G	21	10	
7/26/2023	12:40 pm	WNW	16			10	
7/26/2023	12:35 pm	W	8			10	
7/26/2023	12:30 pm	W	14			9	
7/26/2023	12:25 pm	W	10			9	
7/26/2023	12:20 pm	W	9			9	
7/26/2023	12:15 pm	W	15	G	24	10	
7/26/2023	12:10 pm	W	12	G	17	10	
7/26/2023	12:05 pm	NW	7			10	
7/26/2023	12:00 pm	W	9			10	
7/26/2023	11:55 am	NW	6			10	
7/26/2023	11:51 am		6			10	
7/26/2023	11:50 am	W	7			10	
7/26/2023	11:45 am	WNW	10			8	
7/26/2023	11:40 am	SW	7			9	
7/26/2023	11:35 am	SW	8			10	
7/26/2023	11:30 am	WSW	8			10	
7/26/2023	11:25 am	WSW	7			10	
7/26/2023	11:20 am	WNW	8			10	
7/26/2023	11:15 am	WNW	12			10	
7/26/2023	11:10 am	W	8			10	
7/26/2023	11:05 am	SW	8			10	
7/26/2023	11:00 am	SW	7			10	
7/26/2023	10:55 am	W	8			10	
7/26/2023	10:51 am	SW	8			10	
7/26/2023	10:50 am	SW	8G	1	7	10	
7/26/2023	10:45 am	N	0			10	
7/26/2023	10:40 am	W	5			10	
7/26/2023	10:35 am	SW	6			10	
7/26/2023	10:30 am	WSW	7			10	
7/26/2023	10:25 am	SW	6			10	
7/26/2023	10:20 am	W	3			10	
7/26/2023	10:15 am	NW	7			10	
7/26/2023	10:10 am	WNW	7			10	
7/26/2023	10:05 am	WSW	5			10	
7/26/2023	10:00 am	N	0			10	
7/26/2023	9:55 am	WNW	5			10	
7/26/2023	9:51 am	N	0			10	
7/26/2023	9:50 am	N	0			10	
7/26/2023	9:45 am	W	5			10	
7/26/2023	9:40 am	N	0			10	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather Condition
7/26/2023	9:35 am	ESE	3			10	
7/26/2023	9:30 am	S	3			10	
7/26/2023	9:25 am	S	5			10	
7/26/2023	9:20 am	ENE	3			10	
7/26/2023	9:15 am	SSE	3			10	
7/26/2023	9:10 am	N	0			10	
7/26/2023	9:05 am	SE	3			10	
7/26/2023	9:00 am	N	0			10	
7/26/2023	8:55 am	ENE	3			10	
7/26/2023	8:51 am	N	0			9	
7/26/2023	8:50 am	SE	3			9	
7/26/2023	8:45 am	E	5			10	
7/26/2023	8:40 am	ESE	5			10	
7/26/2023	8:35 am	N	0			10	
7/26/2023	8:30 am	E	6			10	
7/26/2023	8:25 am	E	6			10	
7/26/2023	8:20 am	E	6			10	
7/26/2023	8:15 am	ESE	7			10	
7/26/2023	8:10 am	E	8			10	
7/26/2023	8:05 am	E	5			10	
7/26/2023	8:00 am	E	6			9	
7/26/2023	7:55 am	E	7			9	
7/26/2023	7:51 am	E	7			10	
7/26/2023	7:50 am	E	8			10	
7/26/2023	7:45 am	E	6			10	
7/26/2023	7:40 am	ESE	7			10	
7/26/2023	7:35 am	ESE	5			10	
7/26/2023	7:30 am	SE	7			10	
7/26/2023	7:25 am	ESE	6			10	
7/26/2023	7:20 am	ESE	5			10	
7/26/2023	7:15 am	E	6			7	
7/26/2023	7:10 am	E	6			8	
7/26/2023	7:05 am	E	7			9	
7/26/2023	7:00 am	E	5			10	
7/26/2023	6:55 am	E	5			10	
7/26/2023	6:51 am	E	6			10	
7/26/2023	6:50 am	E	5			10	
7/26/2023	6:45 am	ESE	6			10	
7/26/2023	6:40 am	E	7			10	
7/26/2023	6:35 am	ESE	8			7	
7/26/2023	6:30 am	ESE	6			7	
7/26/2023	6:25 am	E	7			10	
7/26/2023	6:20 am	E	6			10	
7/26/2023	6:15 am	E	6			10	
7/26/2023	6:10 am	E	7			10	
7/26/2023	6:05 am	E	8			10	
7/26/2023	6:00 am	ENE	7			10	
7/26/2023	5:55 am	ENE	7			10	
7/26/2023	5:51 am	ENE	5			10	
7/26/2023	5:50 am	ENE	5			10	
7/26/2023	5:45 am	ENE	5			10	
7/26/2023	5:40 am	NE	5			10	
7/26/2023	5:35 am	ENE	3			10	
7/26/2023	5:30 am	ENE	5			10	
7/26/2023	5:25 am	NE	3			10	
7/26/2023	5:20 am	N	0			10	
7/26/2023	5:15 am	N	0			10	
7/26/2023	5:10 am	NNE	5			10	
7/26/2023	5:05 am	N	5			10	
7/26/2023	5:00 am	NNW	6			10	
7/26/2023	4:55 am	NW	6			10	
7/26/2023	4:51 am	NW	6			10	
7/26/2023	4:50 am	NW	6			10	

Date	Time	Wind Direction	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather Condition
7/26/2023	4:45 am	NW	7			10	
7/26/2023	4:40 am	NW	6			10	
7/26/2023	4:35 am	NW	5			10	
7/26/2023	4:30 am	NW	6			10	
7/26/2023	4:25 am	WNW	6			10	
7/26/2023	4:20 am	WNW	6			10	
7/26/2023	4:15 am	W	6			10	
7/26/2023	4:10 am	WSW	3			10	
7/26/2023	4:05 am	N	0			10	
7/26/2023	4:00 am	N	0			10	
7/26/2023	3:55 am	SW	5			10	
7/26/2023	3:51 am	WSW	5			10	
7/26/2023	3:50 am	W	5			10	
7/26/2023	3:45 am	W	6			10	
7/26/2023	3:40 am	WNW	5			10	
7/26/2023	3:35 am	W	6			10	
7/26/2023	3:30 am	W	6			10	
7/26/2023	3:25 am	W	7			10	
7/26/2023	3:20 am	W	7			10	
7/26/2023	3:15 am	W	7			10	
7/26/2023	3:10 am	W	7			9	
7/26/2023	3:05 am	W	8			9	
7/26/2023	3:00 am	W	8			10	
7/26/2023	2:55 am	W	8			10	
7/26/2023	2:51 am	WNW	9			10	
7/26/2023	2:50 am	W	8			10	
7/26/2023	2:45 am	WNW	8			10	
7/26/2023	2:40 am	W	9			10	
7/26/2023	2:35 am	W	10			10	
7/26/2023	2:30 am	W	7			10	
7/26/2023	2:25 am	W	8			10	
7/26/2023	2:20 am	W	12			10	
7/26/2023	2:15 am	W	12			10	
7/26/2023	2:10 am	W	12			10	
7/26/2023	2:05 am	W	12			10	
7/26/2023	2:00 am	W	12			10	
7/26/2023	1:55 am	W	13			10	
7/26/2023	1:51 am	W	14			10	
7/26/2023	1:50 am	W	14			10	
7/26/2023	1:45 am	W	12			10	
7/26/2023	1:40 am	W	9			10	
7/26/2023	1:35 am	WSW	8			10	
7/26/2023	1:30 am	W	8			10	
7/26/2023	1:25 am	W	12			10	
7/26/2023	1:20 am	W	12			10	
7/26/2023	1:15 am	W	14			10	
7/26/2023	1:10 am	W	13			10	
7/26/2023	1:05 am	W	13			10	
7/26/2023	1:00 am	W	14			10	
7/26/2023	12:55 am	W	13			10	
7/26/2023	12:51 am	W	10			10	
7/26/2023	12:50 am	W	10			10	
7/26/2023	12:45 am	W	10			10	
7/26/2023	12:40 am	W	10			10	
7/26/2023	12:35 am	W	10			10	



NOAA Phoenix Sky Harbor International Airport Station, Time Series Viewer - Weather Conditions for 7/26/2023

Date/Time (L)		Temp. (°F)	Dew (°F)	Relative (%)	Heat (°F)	Wind	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather	Clouds (x100 ft)	Sea Level (mb)	Station (in Hg)	Altimeter (in Hg)	6 Hr (°F)	6 Hr (°F)	24 Hr (°F)	24 Hr (°F)
Jul 14,2024	11:55 pm	90	63	41	90	NNW	15	G	25	10		SCT018 BKN110		28.72	29.91				
Jul 14,2024	11:51 pm	89	63	42	90	NNW	16	G	26	10	Thunder	SCT018 BKN110 OVC21(	1010.9	28.73	29.92			109	84
Jul 14,2024	11:50 pm	90	63	41	90	NW	17			10		SCT018 BKN110		28.73	29.92				
Jul 14,2024	11:45 pm	90	63	41	90	W	16			10		SCT018 BKN110		28.74	29.93				
Jul 14,2024	11:40 pm	91	63	39	92	W	17			10		SCT018 BKN050 OVC110		28.75	29.94				
Jul 14,2024	11:35 pm	91	63	39	92	W	17			9	Blowing dust	SCT018 BKN050 OVC110		28.75	29.94				
Jul 14,2024	11:30 pm	90	66	46	92	W	17			5	Blowing dust	SCT018 BKN050 OVC110		28.76	29.95				
Jul 14,2024	11:25 pm	90	72	56	96	W	14	G	21	3.5	Blowing dust	SCT018 BKN050 OVC110		28.77	29.96				
Jul 14,2024	11:20 pm	90	72	56	96	WSW	8			4	Blowing dust	SCT018 BKN050 OVC110		28.78	29.97				
Jul 14,2024	11:15 pm	90	72	56	96	WSW	9			4	Blowing dust	SCT018 BKN050 OVC110		28.79	29.98				
Jul 14,2024	11:10 pm	90	72	56	96	S	10			4	Blowing dust	SCT018 BKN050 OVC110		28.79	29.98				
Jul 14,2024	11:05 pm	90	70	52	95	N	0			4	Blowing dust	SCT018 BKN050 OVC110		28.78	29.97				
Jul 14,2024	11:03 pm	89	71	56	95	NNE	5			4	Thunder, Blowing dust	SCT018 BKN050 OVC110		28.77	29.96				
Jul 14,2024	11:00 pm	90	70	52	95	NNE	8			4	Blowing dust	SCT018 BKN050 OVC110		28.77	29.96				
Jul 14,2024	10:55 pm	90	70	52	95	N	8			4	Blowing dust	SCT018 BKN050 OVC110		28.76	29.95				
Jul 14,2024	10:51 pm	89	71	56	95	N	8	G	29	4	Blowing dust	SCT018 BKN050 OVC11(	1012.1	28.76	29.95	108	84		
Jul 14,2024	10:50 pm	90	72	56	96	N	8			4	Blowing dust	SCT018 BKN050 OVC110		28.76	29.95				
Jul 14,2024	10:45 pm	90	72	56	96	N	13	G	28	4	Blowing dust	SCT018 BKN050 OVC110		28.76	29.95				
Jul 14,2024	10:40 pm	90	72	56	96	N	10	G	18	4	Blowing dust	SCT018 BKN050 OVC110		28.76	29.95				
Jul 14,2024	10:35 pm	90	72	56	96	N	13			4	Blowing dust	SCT018 BKN050 OVC110		28.76	29.95				
Jul 14,2024	10:31 pm	89	72	57	96	N	16			4	Blowing dust	SCT018 BKN050 OVC110		28.77	29.96				
Jul 14,2024	10:30 pm	90	72	56	96	N	16			4	Blowing dust	SCT025 BKN050 OVC110		28.77	29.96				
Jul 14,2024	10:25 pm	88	73	63	96	N	15			4	Blowing dust	SCT025 BKN050 OVC110		28.78	29.97				
Jul 14,2024	10:20 pm	88	73	63	96	N	18			4	Blowing dust	SCT025 BKN050 OVC110		28.78	29.97				
Jul 14,2024	10:15 pm	90	72	56	96	N	22	G	28	5	Blowing dust	SCT025 BKN050 OVC110		28.78	29.97				
Jul 14,2024	10:10 pm	91	72	53	99	NW	9			6	Blowing dust	SCT025 BKN050 OVC110		28.78	29.97				
Jul 14,2024	10:05 pm	90	72	56	96	WSW	7			5	Blowing dust	SCT025 BKN050 OVC110		28.77	29.96				
Jul 14,2024	10:00 pm	90	72	56	96	SSW	8			5	Blowing dust	SCT025 BKN050 OVC110		28.76	29.95				
Jul 14,2024	9:55 pm	90	72	56	96	SSW	7			5	Blowing dust	SCT025 BKN050 OVC110		28.76	29.95				
Jul 14,2024	9:51 pm	89	73	59	97	S	7			4	Blowing dust	SCT025 BKN050 OVC11(	1011.8	28.75	29.94				
Jul 14,2024	9:50 pm	88	73	63	96	S	7			4	Blowing dust	SCT025 BKN050 OVC110		28.75	29.94				
Jul 14,2024	9:45 pm	88	73	63	96	SSW	7			4	Blowing dust	SCT032 BKN050 OVC110		28.75	29.94				
Jul 14,2024	9:40 pm	88	73	63	96	SSW	9			4	Blowing dust	SCT032 BKN050 OVC110		28.75	29.94				
Jul 14,2024	9:37 pm	86	73	65	93	SW	14			4	Thunder, Blowing dust	SCT032 BKN050 OVC110		28.74	29.93				
Jul 14,2024	9:35 pm	84	73	70	91	SW	14			4	Lt rain, Blowing dust	SCT032 BKN050 OVC110		28.74	29.93				
Jul 14,2024	9:30 pm	84	73	70	91	SSW	16	G	22	3	Lt rain, Blowing dust	BKN019 OVC110		28.73	29.92				
Jul 14,2024	9:28 pm	84	73	70	90	SSW	15	G	21	3	Lt thunder shwr, Blowing dust	BKN019 OVC110		28.73	29.92				
Jul 14,2024	9:25 pm	84	72	66	90	S	7	G	36	1.75	Lt rain, Blowing dust	BKN019 OVC110		28.74	29.93				
Jul 14,2024	9:20 pm	84	70	62	88	S	7	G	36	1	Hvy rain, Blowing dust	BKN017 OVC110		28.75	29.94				
Jul 14,2024	9:15 pm	84	70	62	88	W	10	G	16	0.75	Hvy rain, Blowing dust	BKN017 OVC110		28.78	29.97				
Jul 14,2024	9:13 pm	85	71	63	90	S	16	G	36	0.75	Hvy thunder shwr, Blowing dust	BKN017 OVC110		28.78	29.97				
Jul 14,2024	9:10 pm	86	72	62	92	S	21	G	30	1	Lt rain, Blowing dust	BKN010 BKN110		28.76	29.95				
Jul 14,2024	9:08 pm	89	69	52	94	S	25	G	35	1	Thunder shwr, Blowing dust	BKN010 BKN110		28.75	29.94				
Jul 14,2024	9:05 pm	91	65	41	93	S	23	G	31	1	Blowing dust	BKN010 BKN110		28.75	29.94				
Jul 14,2024	9:01 pm	92	65	41	94	S	24	G	33	1	Thunder, Blowing dust	SCT010 BKN110		28.74	29.93				

Date/Time (L)		Temp. (°F)	Dew (°F)	Relative (%)	Heat (°F)	Wind	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather	Clouds (x100 ft)	Sea Level (mb)	Station (in Hg)	Altimeter (in Hg)	6 Hr (°F)	6 Hr (°F)	24 Hr (°F)	24 Hr (°F)
Jul 14,2024	9:00 pm	91	65	41	93	S	22	G	31	1	Blowing dust	SCT010 BKN110		28.74	29.93				
Jul 14,2024	8:55 pm	93	65	39	95	S	22	G	29	1	Blowing dust	SCT010 BKN110		28.73	29.92				
Jul 14,2024	8:51 pm	95	65	37	98	SSW	24	G	41	1	Blowing dust	FEW010 BKN090 BKN17(	1010.8	28.73	29.92				
Jul 14,2024	8:50 pm	97	65	35	99	S	25	G	36	1	Blowing dust	SCT090		28.72	29.91				
Jul 14,2024	8:49 pm	99	65	33	102	S	26	G	41	1	Blowing dust	SCT090 BKN170 BKN250		28.72	29.91				
Jul 14,2024	8:45 pm	100	65	31	104	SSW	18	G	24	10		FEW090		28.71	29.9				
Jul 14,2024	8:40 pm	100	65	31	104	SW	24	G	30	10		FEW090		28.7	29.89				
Jul 14,2024	8:35 pm	102	63	28	105	SW	23			10		FEW090		28.7	29.89				
Jul 14,2024	8:30 pm	102	63	28	105	SW	23	G	30	10		FEW090		28.69	29.88				
Jul 14,2024	8:25 pm	102	59	24	103	SW	17	G	26	10		FEW090		28.69	29.88				
Jul 14,2024	8:20 pm	102	58	23	102	WSW	15			10		FEW090		28.69	29.87				
Jul 14,2024	8:15 pm	104	58	22	104	WSW	13			10		FEW090		28.68	29.86				
Jul 14,2024	8:10 pm	104	58	22	104	WSW	12	G	17	10		FEW090		28.68	29.86				
Jul 14,2024	8:05 pm	104	58	22	104	SW	14			10		FEW090		28.69	29.87				
Jul 14,2024	8:00 pm	104	58	22	104	SW	13			10		FEW090		28.68	29.86				
Jul 14,2024	7:55 pm	104	58	22	104	SW	12			10		FEW090		28.68	29.86				
Jul 14,2024	7:51 pm	104	58	22	104	SW	13			10		FEW090 SCT170 SCT25(	1008.9	28.68	29.86				
Jul 14,2024	7:50 pm	104	58	22	104	SW	12			10		FEW090		28.68	29.86				
Jul 14,2024	7:45 pm	104	58	22	104	SW	13			10		FEW090		28.67	29.85				
Jul 14,2024	7:40 pm	104	58	22	104	SW	15			10		FEW090		28.67	29.85				
Jul 14,2024	7:35 pm	106	58	21	106	WSW	10			10		FEW090		28.67	29.85				
Jul 14,2024	7:30 pm	106	58	21	106	WSW	12			10		FEW090		28.67	29.85				
Jul 14,2024	7:25 pm	106	58	21	106	WSW	9			10		FEW090		28.67	29.85				
Jul 14,2024	7:20 pm	106	58	21	106	W	13			10		FEW090		28.66	29.84				
Jul 14,2024	7:15 pm	106	58	21	106	W	15			10		FEW090		28.66	29.84				
Jul 14,2024	7:10 pm	106	58	21	106	W	14			10		FEW090		28.66	29.84				
Jul 14,2024	7:05 pm	106	58	21	106	W	15			10		FEW090		28.66	29.84				
Jul 14,2024	7:00 pm	108	58	20	108	W	15	G	21	10		FEW090		28.66	29.84				
Jul 14,2024	6:55 pm	108	58	20	108	W	18			10		FEW090		28.66	29.84				
Jul 14,2024	6:51 pm	106	59	21	106	W	17	G	23	10		FEW090 FEW170 SCT25(	1008.2	28.66	29.84				
Jul 14,2024	6:50 pm	106	58	21	106	W	15			10		FEW090		28.66	29.84				
Jul 14,2024	6:45 pm	106	58	21	106	WSW	15			10		CLR		28.66	29.84				
Jul 14,2024	6:40 pm	108	58	20	108	W	14	G	20	10		CLR		28.66	29.84				
Jul 14,2024	6:35 pm	108	58	20	108	WSW	14			10		CLR		28.66	29.84				
Jul 14,2024	6:30 pm	108	60	21	109	W	17			10		CLR		28.66	29.84				
Jul 14,2024	6:25 pm	106	60	22	107	WSW	15			10		CLR		28.66	29.84				
Jul 14,2024	6:20 pm	108	58	20	108	W	16			10		CLR		28.66	29.84				
Jul 14,2024	6:15 pm	108	58	20	108	W	15			10		CLR		28.66	29.84				
Jul 14,2024	6:10 pm	108	58	20	108	W	20	G	25	10		CLR		28.65	29.83				
Jul 14,2024	6:05 pm	108	58	20	108	WSW	17			10		CLR		28.65	29.83				
Jul 14,2024	6:00 pm	108	58	20	108	WSW	13			10		CLR		28.65	29.83				
Jul 14,2024	5:55 pm	108	60	21	109	W	17			10		CLR		28.65	29.83				
Jul 14,2024	5:51 pm	108	60	21	109	W	15	G	23	10		FEW090 FEW180 SCT25(	1007.7	28.65	29.83				
Jul 14,2024	5:50 pm	108	58	20	108	W	15			10		FEW090		28.65	29.83				
Jul 14,2024	5:45 pm	108	58	20	108	W	15	G	21	10		FEW090		28.65	29.83				

Date/Time (L)		Temp. (°F)	Dew (°F)	Relative (%)	Heat (°F)	Wind	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather	Clouds (x100 ft)	Sea Level (mb)	Station (in Hg)	Altimeter (in Hg)	6 Hr (°F)	6 Hr (°F)	24 Hr (°F)	24 Hr (°F)
Jul 14,2024	5:40 pm	108	58	20	108	WSW	14			10		FEW090		28.65	29.83				
Jul 14,2024	5:35 pm	108	60	21	109	W	12			10		FEW090		28.64	29.82				
Jul 14,2024	5:30 pm	108	60	21	109	W	15			10		FEW090		28.64	29.82				
Jul 14,2024	5:25 pm	108	60	21	109	WSW	17			10		FEW090		28.64	29.82				
Jul 14,2024	5:20 pm	108	60	21	109	W	17	G	25	10		FEW090		28.64	29.82				
Jul 14,2024	5:15 pm	108	60	21	109	W	13			10		FEW090		28.65	29.83				
Jul 14,2024	5:10 pm	108	60	21	109	WSW	17	G	24	10		FEW090		28.65	29.83				
Jul 14,2024	5:05 pm	108	60	21	109	W	16			10		FEW090		28.65	29.83				
Jul 14,2024	5:00 pm	108	60	21	109	W	16			10		FEW090		28.65	29.83				
Jul 14,2024	4:55 pm	108	60	21	109	WNW	17			10		FEW090		28.65	29.83				
Jul 14,2024	4:51 pm	108	60	21	109	WSW	14	G	26	10		FEW090 FEW180 SCT25(	1007.9	28.65	29.83			109	98
Jul 14,2024	4:50 pm	108	61	22	110	WSW	14			10		FEW090		28.65	29.83				
Jul 14,2024	4:45 pm	108	60	21	109	W	18			10		FEW090		28.65	29.83				
Jul 14,2024	4:40 pm	108	60	21	109	W	18			10		CLR		28.66	29.84				
Jul 14,2024	4:35 pm	108	61	22	110	W	15	G	22	10		CLR		28.66	29.84				
Jul 14,2024	4:30 pm	108	61	22	110	W	16	G	22	10		CLR		28.66	29.84				
Jul 14,2024	4:25 pm	108	60	21	109	NW	15			10		CLR		28.66	29.84				
Jul 14,2024	4:20 pm	109	61	21	112	W	15	G	22	10		CLR		28.66	29.84				
Jul 14,2024	4:15 pm	108	61	22	110	WNW	15			10		CLR		28.66	29.84				
Jul 14,2024	4:10 pm	108	61	22	110	WSW	15			10		CLR		28.67	29.85				
Jul 14,2024	4:05 pm	108	61	22	110	W	13	G	20	10		CLR		28.67	29.85				
Jul 14,2024	4:00 pm	109	61	21	112	W	17			10		CLR		28.67	29.85				
Jul 14,2024	3:55 pm	108	61	22	110	W	14	G	24	9		CLR		28.67	29.85				
Jul 14,2024	3:51 pm	107	61	22	109	WNW	12	G	24	10		FEW090 FEW180 SCT25(	1008.6	28.67	29.85				
Jul 14,2024	3:50 pm	108	61	22	110	WNW	12			10		FEW090		28.68	29.86				
Jul 14,2024	3:45 pm	108	61	22	110	W	13	G	20	10		FEW090		28.68	29.86				
Jul 14,2024	3:40 pm	108	61	22	110	WSW	9			10		CLR		28.68	29.86				
Jul 14,2024	3:35 pm	108	61	22	110	W	14	G	20	10		CLR		28.68	29.86				
Jul 14,2024	3:30 pm	108	61	22	110	W	13			10		CLR		28.69	29.87				
Jul 14,2024	3:25 pm	108	61	22	110	WNW	17			10		CLR		28.69	29.87				
Jul 14,2024	3:20 pm	106	63	25	109	WNW	14	G	21	10		CLR		28.69	29.88				
Jul 14,2024	3:15 pm	106	63	25	109	W	14	G	22	10		CLR		28.69	29.88				
Jul 14,2024	3:10 pm	106	63	25	109	W	7			10		CLR		28.69	29.88				
Jul 14,2024	3:05 pm	108	63	24	111	SW	13			10		CLR		28.7	29.89				
Jul 14,2024	3:00 pm	106	61	23	108	NW	14			10		CLR		28.7	29.89				
Jul 14,2024	2:55 pm	106	61	23	108	WNW	16			10		CLR		28.7	29.89				
Jul 14,2024	2:51 pm	106	63	24	109	WNW	13	G	20	10		FEW090 FEW180 FEW25	1009.9	28.7	29.89				
Jul 14,2024	2:50 pm	106	63	25	109	W	9			10		FEW090		28.7	29.89				
Jul 14,2024	2:45 pm	106	63	25	109	W	10			10		CLR		28.71	29.9				
Jul 14,2024	2:40 pm	106	63	25	109	SW	13			10		CLR		28.71	29.9				
Jul 14,2024	2:35 pm	106	63	25	109	WSW	14			10		CLR		28.71	29.9				
Jul 14,2024	2:30 pm	106	61	23	108	W	13			10		CLR		28.72	29.91				
Jul 14,2024	2:25 pm	106	61	23	108	W	10	G	16	10		CLR		28.72	29.91				
Jul 14,2024	2:20 pm	106	61	23	108	W	8			10		CLR		28.72	29.91				
Jul 14,2024	2:15 pm	106	61	23	108	W	18			10		CLR		28.72	29.91				

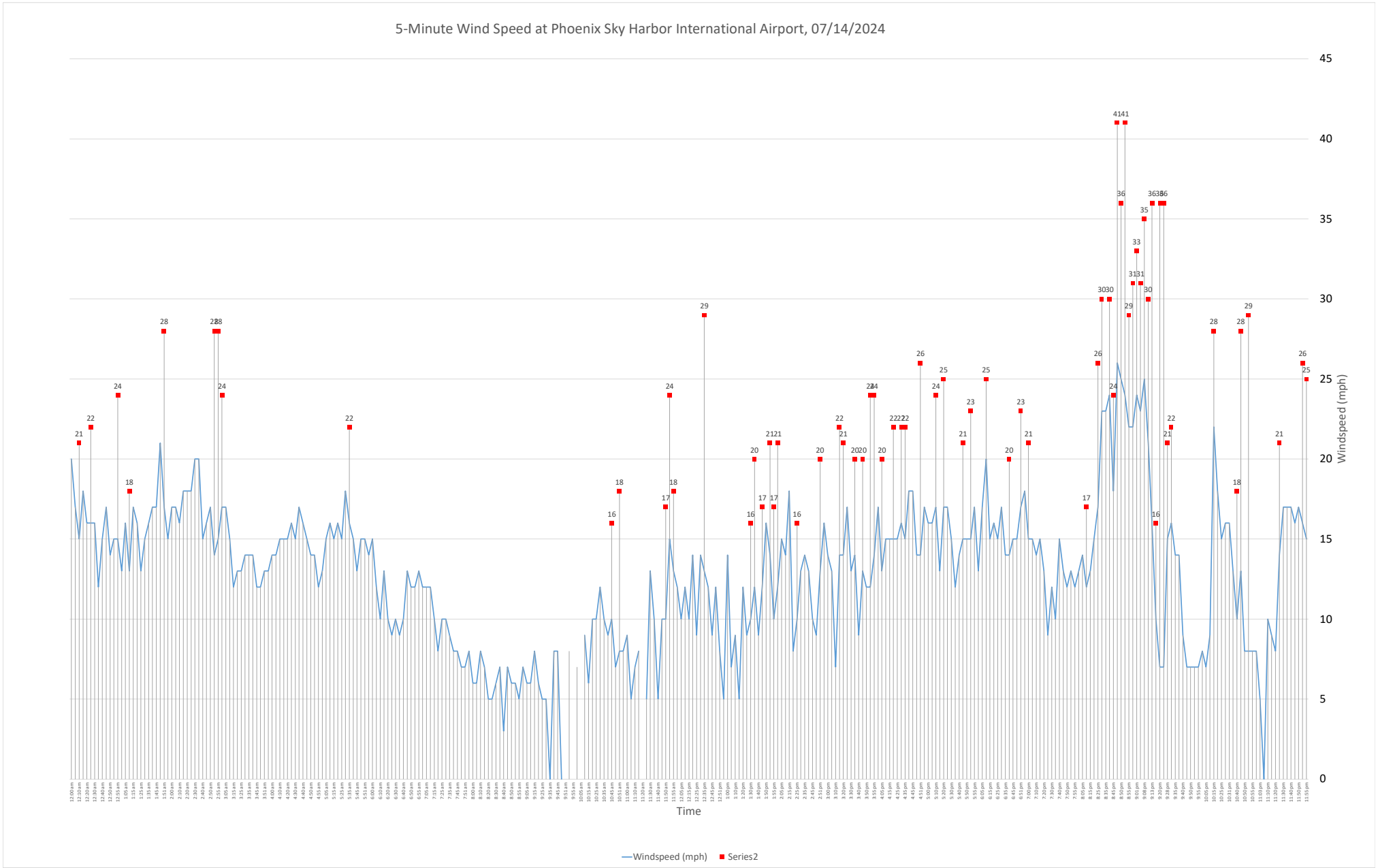
Date/Time (L)		Temp. (°F)	Dew (°F)	Relative (%)	Heat (°F)	Wind	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather	Clouds (x100 ft)	Sea Level (mb)	Station (in Hg)	Altimeter (in Hg)	6 Hr (°F)	6 Hr (°F)	24 Hr (°F)	24 Hr (°F)
Jul 14,2024	2:10 pm	106	61	23	108	NW	14			10		CLR		28.73	29.92				
Jul 14,2024	2:05 pm	104	61	25	106	NW	15			10		CLR		28.73	29.92				
Jul 14,2024	2:00 pm	106	63	25	109	SW	12	G	21	10		CLR		28.73	29.92				
Jul 14,2024	1:55 pm	106	61	23	108	W	10	G	17	10		CLR		28.73	29.92				
Jul 14,2024	1:51 pm	105	61	24	107	W	14	G	21	10		FEW090 FEW180 FEW25	1011	28.74	29.93				
Jul 14,2024	1:50 pm	106	61	23	108	W	16			10		FEW090		28.74	29.93				
Jul 14,2024	1:45 pm	106	63	25	109	W	12	G	17	10		FEW090		28.74	29.93				
Jul 14,2024	1:40 pm	108	63	24	111	SW	9			10		FEW090		28.74	29.93				
Jul 14,2024	1:35 pm	106	63	25	109	WSW	12	G	20	10		FEW090		28.74	29.93				
Jul 14,2024	1:30 pm	106	63	25	109	WNW	10	G	16	10		FEW090		28.74	29.93				
Jul 14,2024	1:25 pm	104	63	26	107	W	9			10		FEW090		28.75	29.94				
Jul 14,2024	1:20 pm	104	63	26	107	WSW	12			10		FEW090		28.75	29.94				
Jul 14,2024	1:15 pm	102	63	28	105	SSW	5			10		FEW090		28.75	29.94				
Jul 14,2024	1:10 pm	102	63	28	105	W	9			10		FEW090		28.75	29.94				
Jul 14,2024	1:05 pm	102	63	28	105	WSW	7			10		FEW090		28.75	29.94				
Jul 14,2024	1:00 pm	104	63	26	107	W	14			10		FEW090		28.76	29.95				
Jul 14,2024	12:55 pm	102	61	26	104	NW	5			10		FEW090		28.76	29.95				
Jul 14,2024	12:51 pm	104	61	24	105	W	8			10		FEW090 FEW180 BKN25	1011.9	28.76	29.95				
Jul 14,2024	12:50 pm	102	61	26	104	W	12			10		FEW090		28.76	29.95				
Jul 14,2024	12:45 pm	102	61	26	104	WSW	9			10		FEW090		28.76	29.95				
Jul 14,2024	12:40 pm	102	61	26	104	W	12			10		FEW090		28.77	29.96				
Jul 14,2024	12:35 pm	102	61	26	104	NW	13	G	29	10		FEW090		28.77	29.96				
Jul 14,2024	12:30 pm	104	63	26	107	W	14			10		FEW090		28.77	29.96				
Jul 14,2024	12:25 pm	102	61	26	104	WSW	9			10		FEW090		28.77	29.96				
Jul 14,2024	12:20 pm	104	63	26	107	WNW	14			10		FEW090		28.77	29.96				
Jul 14,2024	12:15 pm	102	63	28	105	WSW	10			10		FEW090		28.78	29.97				
Jul 14,2024	12:10 pm	100	63	29	103	W	12			10		FEW090		28.78	29.97				
Jul 14,2024	12:05 pm	100	63	29	103	WNW	10			10		FEW090		28.78	29.97				
Jul 14,2024	12:00 pm	102	63	28	105	W	12			10		FEW090		28.78	29.97				
Jul 14,2024	11:55 am	102	63	28	105	W	13	G	18	10		FEW090		28.78	29.97				
Jul 14,2024	11:51 am	103	63	28	106	WNW	15	G	24	10		FEW090 BKN250	1012.7	28.78	29.97				
Jul 14,2024	11:50 am	102	63	28	105	WNW	10	G	17	10		FEW090		28.78	29.97				
Jul 14,2024	11:45 am	102	63	28	105	W	10			10		FEW090 FEW120		28.79	29.98				
Jul 14,2024	11:40 am	102	65	30	106	WSW	5			10		FEW090 FEW120		28.79	29.98				
Jul 14,2024	11:35 am	102	65	30	106	WSW	10			10		FEW090 FEW120		28.79	29.98				
Jul 14,2024	11:30 am	100	65	31	104	W	13			10		FEW090 FEW120		28.79	29.98				
Jul 14,2024	11:25 am	100	65	31	104	W	5			10		FEW090 FEW120		28.79	29.98				
Jul 14,2024	11:20 am	99	65	33	102					10		FEW090 FEW120		28.79	29.98				
Jul 14,2024	11:15 am	102	65	30	106	SSW	8			10		FEW090 FEW120		28.79	29.98				
Jul 14,2024	11:10 am	100	65	31	104	SSW	7			10		FEW090 FEW120		28.79	29.98				
Jul 14,2024	11:05 am	99	65	33	102	WSW	5			10		FEW090 FEW120		28.79	29.98				
Jul 14,2024	11:00 am	100	65	31	104	WSW	9			10		FEW090 FEW120		28.8	29.99				
Jul 14,2024	10:55 am	99	65	33	102	WSW	8			10		FEW090 FEW120		28.8	29.99				
Jul 14,2024	10:51 am	98	65	34	101	WNW	8	G	18	10		FEW090 FEW120 SCT25	1013.2	28.8	29.99			100	89
Jul 14,2024	10:50 am	99	65	33	102	W	7			10		FEW090 FEW120		28.8	29.99				

Date/Time (L)		Temp. (°F)	Dew (°F)	Relative (%)	Heat (°F)	Wind	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather	Clouds (x100 ft)	Sea Level (mb)	Station (in Hg)	Altimeter (in Hg)	6 Hr (°F)	6 Hr (°F)	24 Hr (°F)	24 Hr (°F)
Jul 14,2024	10:45 am	99	65	33	102	W	10	G	16	10		FEW090 FEW120		28.8	29.99				
Jul 14,2024	10:40 am	100	65	31	104	WNW	9			10		FEW090 FEW120		28.8	29.99				
Jul 14,2024	10:35 am	99	65	33	102	W	10			10		FEW090 FEW120		28.8	29.99				
Jul 14,2024	10:30 am	99	65	33	102	W	12			10		FEW090 FEW120		28.81	30				
Jul 14,2024	10:25 am	99	65	33	102	NW	10			10		FEW090 FEW120		28.81	30				
Jul 14,2024	10:20 am	99	66	35	103	W	10			10		FEW090 FEW120		28.81	30				
Jul 14,2024	10:15 am	99	66	35	103	WSW	6			10		FEW090 FEW120		28.81	30				
Jul 14,2024	10:10 am	99	66	35	103	SW	9			10		FEW090 FEW120		28.81	30				
Jul 14,2024	10:05 am	97	66	37	101					10		FEW090 FEW120		28.81	30				
Jul 14,2024	10:00 am	97	66	37	101	WNW	7			10		FEW090 FEW120		28.81	30				
Jul 14,2024	9:55 am	99	66	35	103					10		FEW090 FEW120		28.81	30				
Jul 14,2024	9:53 am	97	67	38	101	SW	8			10		FEW090 FEW120 SCT250		28.81	30				
Jul 14,2024	9:51 am	97	67	38	101					10		FEW090 FEW120 SCT25(	1013.6	28.81	30				
Jul 14,2024	9:50 am	97	66	37	101	N	0			10		FEW090 FEW120		28.81	30				
Jul 14,2024	9:45 am	97	66	37	101	SW	8			10		FEW090 FEW120		28.81	30				
Jul 14,2024	9:40 am	97	66	37	101	WSW	8			10		FEW090 FEW120		28.81	30				
Jul 14,2024	9:35 am	97	66	37	101	N	0			10		FEW090 FEW120		28.81	30				
Jul 14,2024	9:30 am	97	66	37	101	S	5			10		FEW090 FEW120		28.82	30.01				
Jul 14,2024	9:25 am	95	66	39	99	SW	5			10		FEW090 FEW120		28.82	30.01				
Jul 14,2024	9:20 am	95	66	39	99	WNW	6			10		FEW090 FEW120		28.82	30.01				
Jul 14,2024	9:15 am	95	66	39	99	W	8			10		FEW090 FEW120		28.82	30.01				
Jul 14,2024	9:10 am	93	66	41	96	W	6			10		FEW090 FEW120		28.82	30.01				
Jul 14,2024	9:05 am	93	66	41	96	SW	6			10		FEW090 FEW120		28.82	30.01				
Jul 14,2024	9:00 am	93	66	41	96	SW	7			10		FEW090 FEW120		28.82	30.01				
Jul 14,2024	8:55 am	93	68	44	98	WSW	5			10		FEW090 FEW120		28.82	30.01				
Jul 14,2024	8:51 am	94	67	41	98	WSW	6			10		FEW090 FEW120 BKN25(	1013.9	28.82	30.01				
Jul 14,2024	8:50 am	93	66	41	96	WSW	6			10		FEW090 FEW120		28.82	30.01				
Jul 14,2024	8:45 am	93	66	41	96	W	7			10		FEW090 FEW120		28.82	30.01				
Jul 14,2024	8:40 am	93	66	41	96	W	3			10		FEW090 FEW120		28.82	30.01				
Jul 14,2024	8:35 am	93	68	44	98	WSW	7			10		FEW090 FEW120		28.83	30.02				
Jul 14,2024	8:30 am	93	68	44	98	W	6			10		FEW090 FEW120		28.83	30.02				
Jul 14,2024	8:25 am	93	68	44	98	W	5			10		FEW090 FEW120		28.83	30.02				
Jul 14,2024	8:20 am	91	68	47	96	W	5			10		FEW090 FEW120		28.83	30.02				
Jul 14,2024	8:15 am	91	68	47	96	WNW	7			10		FEW090 FEW120		28.83	30.02				
Jul 14,2024	8:10 am	91	68	47	96	WNW	8			10		FEW090 FEW120		28.83	30.02				
Jul 14,2024	8:05 am	91	68	47	96	WNW	6			10		FEW090 FEW120		28.83	30.02				
Jul 14,2024	8:00 am	91	70	49	97	W	6			10		FEW090 FEW120		28.83	30.02				
Jul 14,2024	7:55 am	91	70	49	97	WNW	8			10		FEW090 FEW120		28.83	30.02				
Jul 14,2024	7:51 am	91	69	49	96	WNW	7			10		FEW090 FEW120 BKN25(	1014.2	28.83	30.02				
Jul 14,2024	7:50 am	91	70	49	97	W	7			10		FEW090 FEW120		28.83	30.02				
Jul 14,2024	7:45 am	91	70	49	97	WNW	8			10		FEW090		28.83	30.02				
Jul 14,2024	7:40 am	90	70	52	95	W	8			10		FEW090		28.83	30.02				
Jul 14,2024	7:35 am	91	70	49	97	WNW	9			10		FEW090		28.83	30.02				
Jul 14,2024	7:30 am	91	70	49	97	W	10			10		FEW090		28.82	30.01				
Jul 14,2024	7:25 am	90	70	52	95	W	10			10		FEW090		28.82	30.01				

Date/Time (L)		Temp. (°F)	Dew (°F)	Relative (%)	Heat (°F)	Wind	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather	Clouds (x100 ft)	Sea Level (mb)	Station (in Hg)	Altimeter (in Hg)	6 Hr (°F)	6 Hr (°F)	24 Hr (°F)	24 Hr (°F)
Jul 14,2024	7:20 am	90	70	52	95	W	8			10		FEW090		28.82	30.01				
Jul 14,2024	7:15 am	90	70	52	95	WNW	10			10		FEW090		28.82	30.01				
Jul 14,2024	7:10 am	90	70	52	95	WNW	12			10		FEW090		28.82	30.01				
Jul 14,2024	7:05 am	90	70	52	95	WNW	12			10		FEW090		28.82	30.01				
Jul 14,2024	7:00 am	90	70	52	95	WNW	12			10		FEW090		28.81	30				
Jul 14,2024	6:55 am	90	70	52	95	WNW	13			10		FEW090		28.81	30				
Jul 14,2024	6:51 am	90	69	51	95	WNW	12			10		FEW090 FEW140 BKN25(	1013.4	28.81	30				
Jul 14,2024	6:50 am	90	70	52	95	WNW	12			10		FEW090		28.81	30				
Jul 14,2024	6:45 am	90	70	52	95	NW	13			10		CLR		28.81	30				
Jul 14,2024	6:40 am	90	70	52	95	NW	10			10		CLR		28.8	29.99				
Jul 14,2024	6:35 am	90	70	52	95	NW	9			10		CLR		28.81	30				
Jul 14,2024	6:30 am	90	70	52	95	NW	10			10		CLR		28.8	29.99				
Jul 14,2024	6:25 am	90	70	52	95	NW	9			10		CLR		28.8	29.99				
Jul 14,2024	6:20 am	90	68	49	94	NW	10			10		CLR		28.8	29.99				
Jul 14,2024	6:15 am	90	68	49	94	NW	13			10		CLR		28.8	29.99				
Jul 14,2024	6:10 am	90	68	49	94	WNW	10			10		CLR		28.79	29.98				
Jul 14,2024	6:05 am	90	68	49	94	WNW	12			10		CLR		28.79	29.98				
Jul 14,2024	6:00 am	90	68	49	94	WNW	15			10		CLR		28.79	29.98				
Jul 14,2024	5:55 am	90	68	49	94	WNW	14			10		CLR		28.79	29.98				
Jul 14,2024	5:51 am	90	68	49	94	WNW	15			10		FEW100 SCT150 BKN25(	1012.8	28.79	29.98				
Jul 14,2024	5:50 am	90	68	49	94	NW	15			10		FEW100		28.79	29.98				
Jul 14,2024	5:45 am	90	68	49	94	WNW	13			10		FEW100		28.79	29.98				
Jul 14,2024	5:40 am	90	68	49	94	WNW	15			10		FEW100		28.79	29.98				
Jul 14,2024	5:35 am	90	68	49	94	WNW	16	G	22	10		CLR		28.78	29.97				
Jul 14,2024	5:30 am	90	68	49	94	WNW	18			10		CLR		28.78	29.97				
Jul 14,2024	5:25 am	90	68	49	94	WNW	15			10		CLR		28.78	29.97				
Jul 14,2024	5:20 am	90	66	46	92	WNW	16			10		CLR		28.78	29.97				
Jul 14,2024	5:15 am	90	66	46	92	WNW	15			10		CLR		28.78	29.97				
Jul 14,2024	5:10 am	90	66	46	92	WNW	16			10		CLR		28.77	29.96				
Jul 14,2024	5:05 am	90	66	46	92	WNW	15			10		CLR		28.78	29.97				
Jul 14,2024	5:00 am	90	66	46	92	WNW	13			10		CLR		28.77	29.96				
Jul 14,2024	4:55 am	90	66	46	92	WNW	12			10		CLR		28.77	29.96				
Jul 14,2024	4:51 am	91	66	44	94	WNW	14			10		FEW100 FEW170 FEW25	1012.1	28.77	29.96			103	91
Jul 14,2024	4:50 am	91	66	44	94	WNW	14			10		FEW100		28.77	29.96				
Jul 14,2024	4:45 am	91	66	44	94	WNW	15			10		CLR		28.76	29.95				
Jul 14,2024	4:40 am	91	65	41	93	WNW	16			10		CLR		28.76	29.95				
Jul 14,2024	4:35 am	91	65	41	93	WNW	17			10		CLR		28.76	29.95				
Jul 14,2024	4:30 am	91	65	41	93	WNW	15			10		CLR		28.75	29.94				
Jul 14,2024	4:25 am	91	65	41	93	WNW	16			10		CLR		28.75	29.94				
Jul 14,2024	4:20 am	91	65	41	93	WNW	15			10		CLR		28.75	29.94				
Jul 14,2024	4:15 am	91	65	41	93	WNW	15			10		CLR		28.75	29.94				
Jul 14,2024	4:10 am	91	65	41	93	WNW	15			10		CLR		28.75	29.94				
Jul 14,2024	4:05 am	91	65	41	93	W	14			10		CLR		28.75	29.94				
Jul 14,2024	4:00 am	93	63	36	94	W	14			10		CLR		28.75	29.94				
Jul 14,2024	3:55 am	93	63	36	94	WNW	13			10		CLR		28.74	29.93				

Date/Time (L)		Temp. (°F)	Dew (°F)	Relative (%)	Heat (°F)	Wind	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather	Clouds (x100 ft)	Sea Level (mb)	Station (in Hg)	Altimeter (in Hg)	6 Hr (°F)	6 Hr (°F)	24 Hr (°F)	24 Hr (°F)
Jul 14,2024	3:51 am	93	63	37	94	WNW	13			10		FEW170	1011.4	28.75	29.94				
Jul 14,2024	3:50 am	93	63	36	94	WNW	12			10				28.75	29.94				
Jul 14,2024	3:45 am	93	63	36	94	WNW	12			10				28.74	29.93				
Jul 14,2024	3:40 am	93	63	36	94	WNW	14			10		CLR		28.74	29.93				
Jul 14,2024	3:35 am	93	63	36	94	W	14			10		CLR		28.74	29.93				
Jul 14,2024	3:30 am	93	61	34	93	W	14			10		CLR		28.74	29.93				
Jul 14,2024	3:25 am	93	61	34	93	WSW	13			10		CLR		28.74	29.93				
Jul 14,2024	3:20 am	93	61	34	93	W	13			10		CLR		28.73	29.92				
Jul 14,2024	3:15 am	95	61	32	95	WSW	12			10		CLR		28.73	29.92				
Jul 14,2024	3:10 am	95	61	32	95	WSW	15			10		CLR		28.73	29.92				
Jul 14,2024	3:05 am	95	61	32	95	WSW	17			10		CLR		28.73	29.92				
Jul 14,2024	3:00 am	95	61	32	95	WSW	17	G	24	10		CLR		28.73	29.92				
Jul 14,2024	2:55 am	95	61	32	95	WSW	15	G	28	10		CLR		28.72	29.91				
Jul 14,2024	2:51 am	95	61	33	95	WSW	14	G	28	10		BKN170	1010.3	28.72	29.91				
Jul 14,2024	2:50 am	95	61	32	95	WSW	17			10				28.72	29.91				
Jul 14,2024	2:45 am	95	61	32	95	W	16			10		CLR		28.71	29.9				
Jul 14,2024	2:40 am	97	61	31	97	W	15			10		CLR		28.71	29.9				
Jul 14,2024	2:35 am	97	61	31	97	W	20			10		CLR		28.71	29.9				
Jul 14,2024	2:30 am	97	61	31	97	W	20			10		CLR		28.71	29.9				
Jul 14,2024	2:25 am	97	61	31	97	W	18			10		CLR		28.7	29.89				
Jul 14,2024	2:20 am	97	61	31	97	W	18			10		CLR		28.7	29.89				
Jul 14,2024	2:15 am	97	59	29	97	W	18			10		CLR		28.7	29.89				
Jul 14,2024	2:10 am	99	61	29	99	W	16			10		CLR		28.7	29.89				
Jul 14,2024	2:05 am	99	61	29	99	W	17			10		CLR		28.7	29.89				
Jul 14,2024	2:00 am	99	61	29	99	W	17			10		CLR		28.7	29.89				
Jul 14,2024	1:55 am	99	61	29	99	W	15			10		CLR		28.7	29.89				
Jul 14,2024	1:51 am	98	60	29	98	W	17	G	28	10		SCT170	1009.6	28.7	29.89				
Jul 14,2024	1:50 am	99	61	29	99	W	21			10				28.7	29.89				
Jul 14,2024	1:45 am	99	61	29	99	W	17			10				28.7	29.89				
Jul 14,2024	1:40 am	99	61	29	99	WNW	17			10				28.7	29.89				
Jul 14,2024	1:35 am	99	61	29	99	WNW	16			10				28.7	29.89				
Jul 14,2024	1:30 am	99	61	29	99	W	15			10		CLR		28.7	29.89				
Jul 14,2024	1:25 am	99	61	29	99	W	13			10		CLR		28.7	29.89				
Jul 14,2024	1:20 am	99	61	29	99	W	16			10		CLR		28.7	29.89				
Jul 14,2024	1:15 am	99	61	29	99	W	17			10		CLR		28.7	29.89				
Jul 14,2024	1:10 am	99	61	29	99	W	13	G	18	10		CLR		28.7	29.89				
Jul 14,2024	1:05 am	99	61	29	99	W	16			10		CLR		28.69	29.88				
Jul 14,2024	1:00 am	99	61	29	99	W	13			10		CLR		28.69	29.88				
Jul 14,2024	12:55 am	99	61	29	99	W	15	G	24	10		CLR		28.69	29.88				
Jul 14,2024	12:51 am	99	61	29	100	W	15			10		BKN170	1009.4	28.69	29.88				
Jul 14,2024	12:50 am	99	61	29	99	W	14			10				28.69	29.88				
Jul 14,2024	12:45 am	99	61	29	99	W	17			10				28.69	29.88				
Jul 14,2024	12:40 am	100	63	29	103	W	15			10				28.69	29.88				
Jul 14,2024	12:35 am	100	63	29	103	W	12			10		CLR		28.69	29.88				
Jul 14,2024	12:30 am	100	63	29	103	W	16			10		CLR		28.69	29.88				

Date/Time (L)		Temp. (°F)	Dew (°F)	Relative (%)	Heat (°F)	Wind	Wind (mph)	Wind Gust Recorded?	Wind Gust (mph)	Visibility (miles)	Weather	Clouds (x100 ft)	Sea Level (mb)	Station (in Hg)	Altimeter (in Hg)	6 Hr (°F)	6 Hr (°F)	24 Hr (°F)	24 Hr (°F)
Jul 14,2024	12:25 am	100	63	29	103	W	16	G	22	10		CLR		28.69	29.88				
Jul 14,2024	12:20 am	100	63	29	103	W	16			10		CLR		28.69	29.88				
Jul 14,2024	12:15 am	100	63	29	103	W	18			10		CLR		28.69	29.88				
Jul 14,2024	12:10 am	100	63	29	103	W	15	G	21	10		CLR		28.69	29.88				
Jul 14,2024	12:05 am	100	63	29	103	W	17			10		CLR		28.69	29.88				
Jul 14,2024	12:00 am	100	63	29	103	W	20			10		CLR		28.69	29.88				

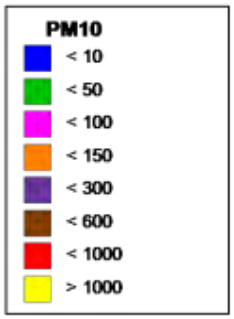


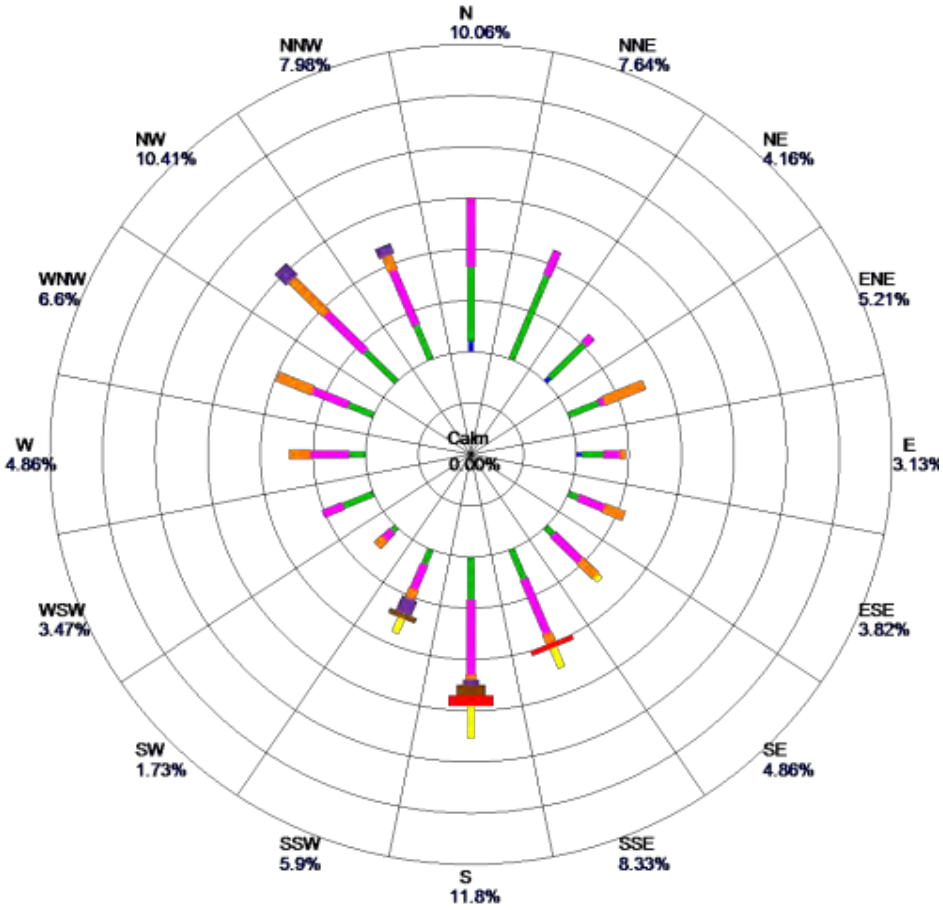
NOAA Phoenix Sky Harbor International Airport Station, Time Series Viewer - Weather Conditions for 07-14-2024

Appendix C: Maricopa County Air Quality Department Planning & Analysis Division – Air Quality Monitor Data 5-Minute and 1-Hour PM_{10} Wind Roses

5-Minute PM10 Wind Roses for MCAQD Air Quality Monitors

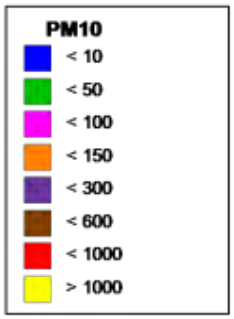
Site: Dysart
Parameter: PM10
Units: UG/M3
Direction: FROM Origin

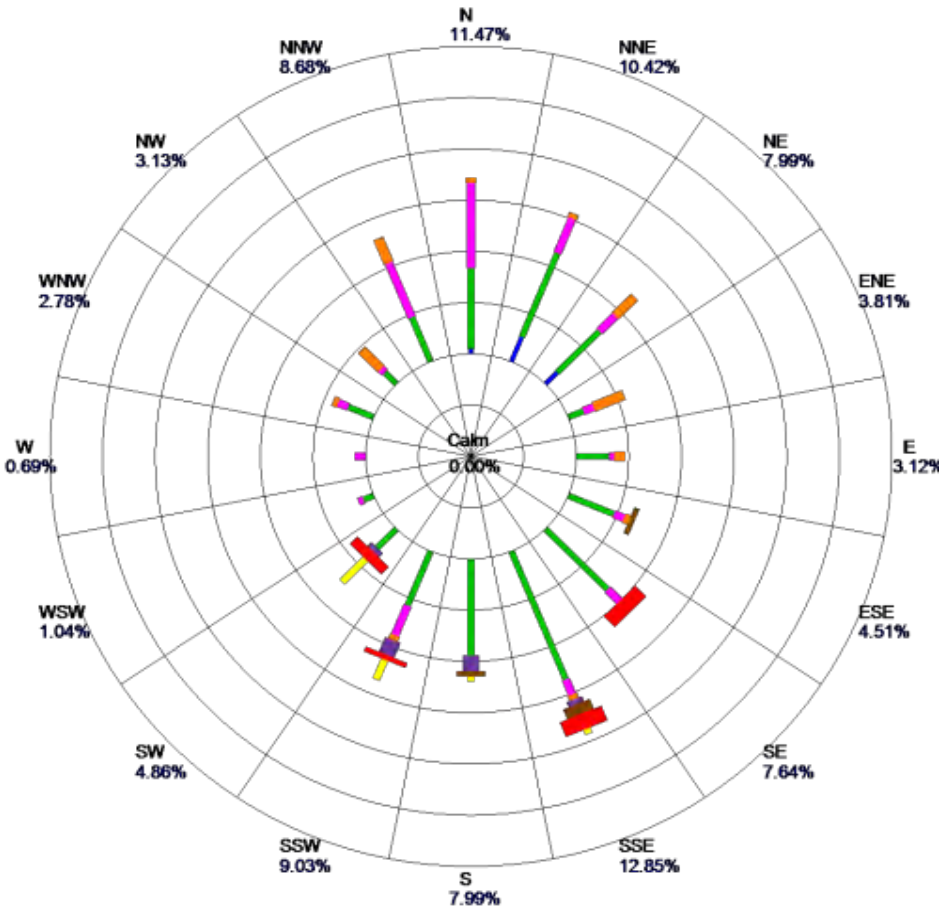




Period: 2022-09-02 00:00 - 2022-09-02 23:59

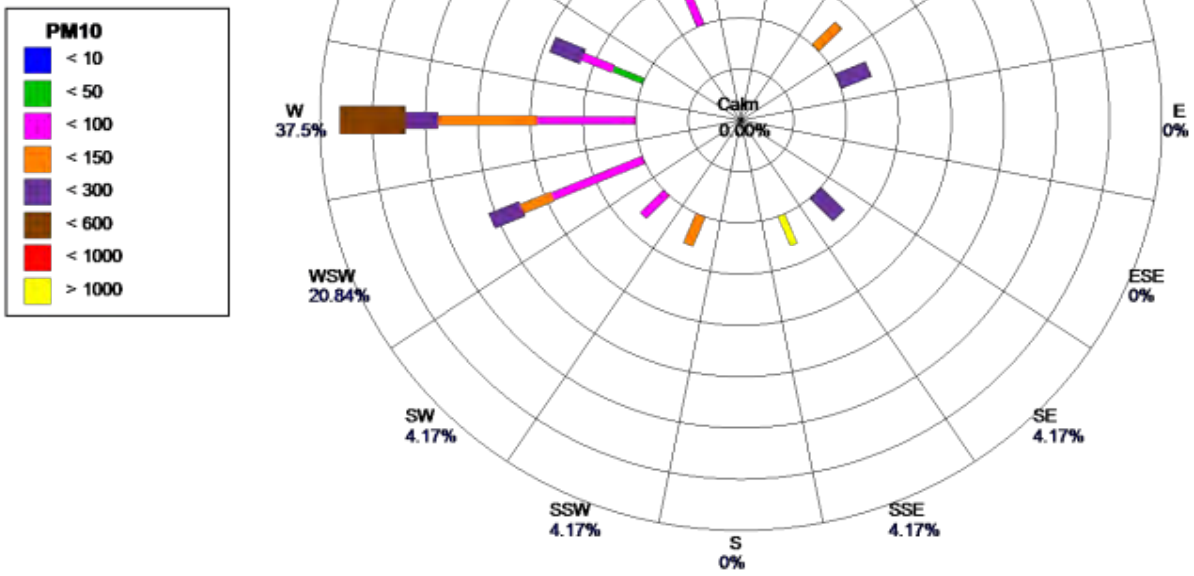
Site: Zuni Hills
Parameter: PM10
Units: UG/M3
Direction: FROM Origin





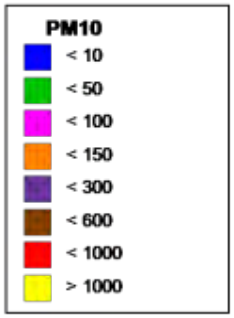
Period: 2022-09-02 00:00 - 2022-09-02 23:59

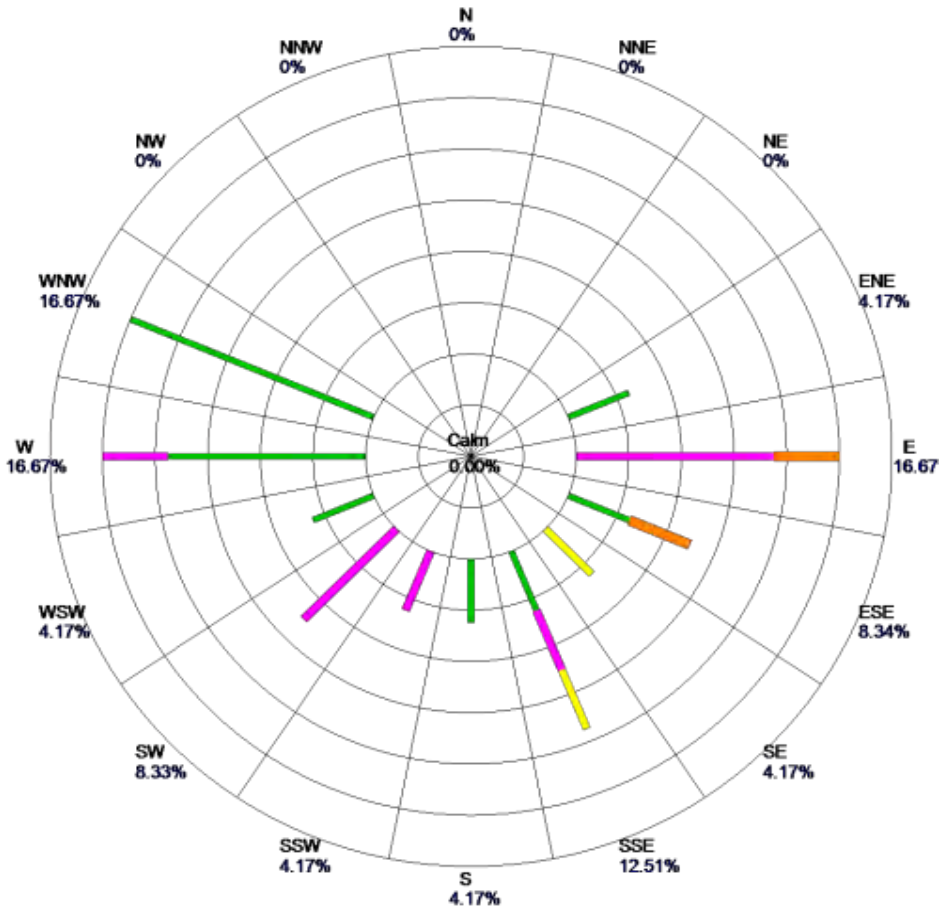
Site: West 43rd Ave
Parameter: PM10
Units: UG/M3
Direction: FROM Origin



Period: 2023-07-21 00:00 - 2023-07-21 23:59

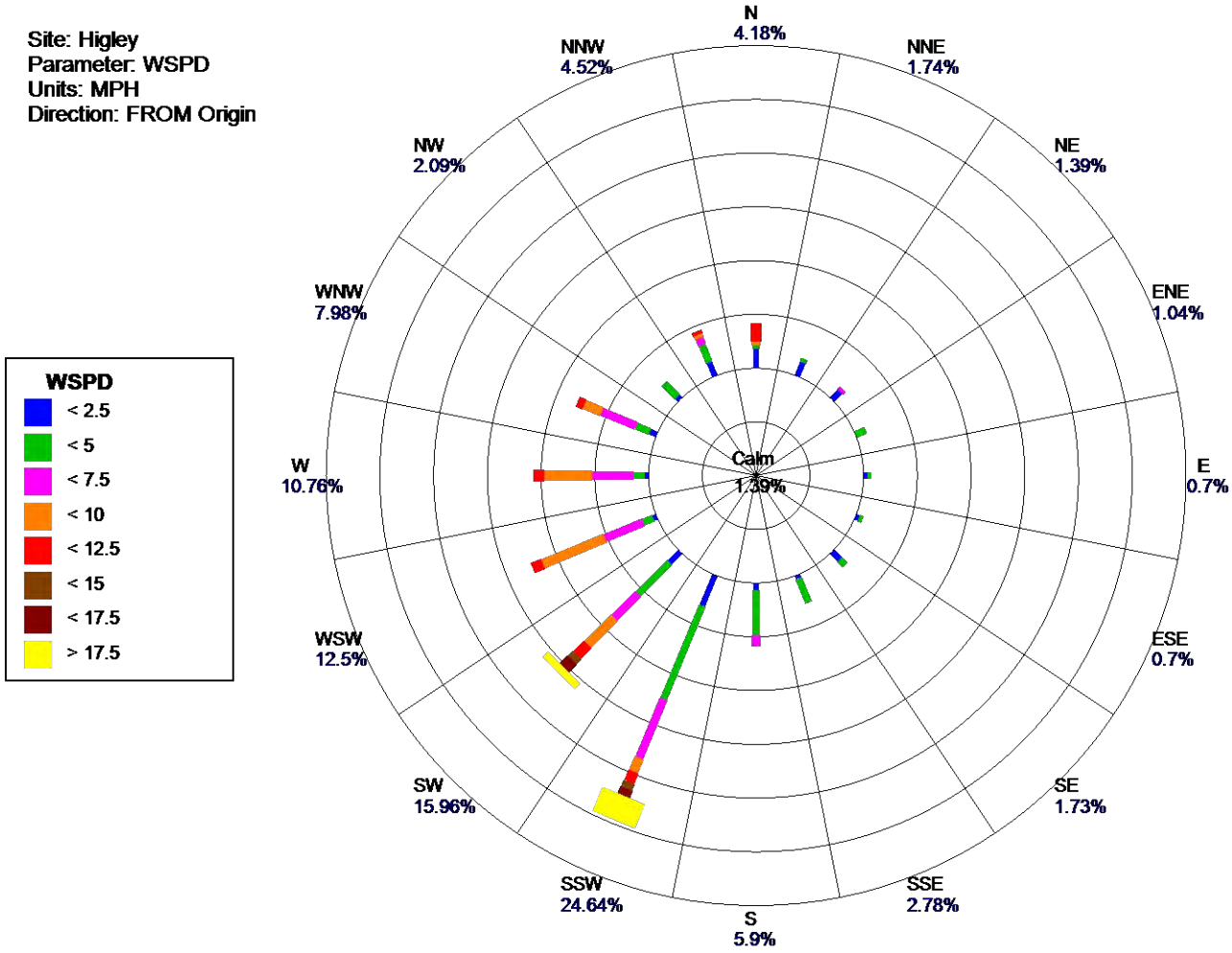
Site: Higley
Parameter: PM10
Units: UG/M3
Direction: FROM Origin





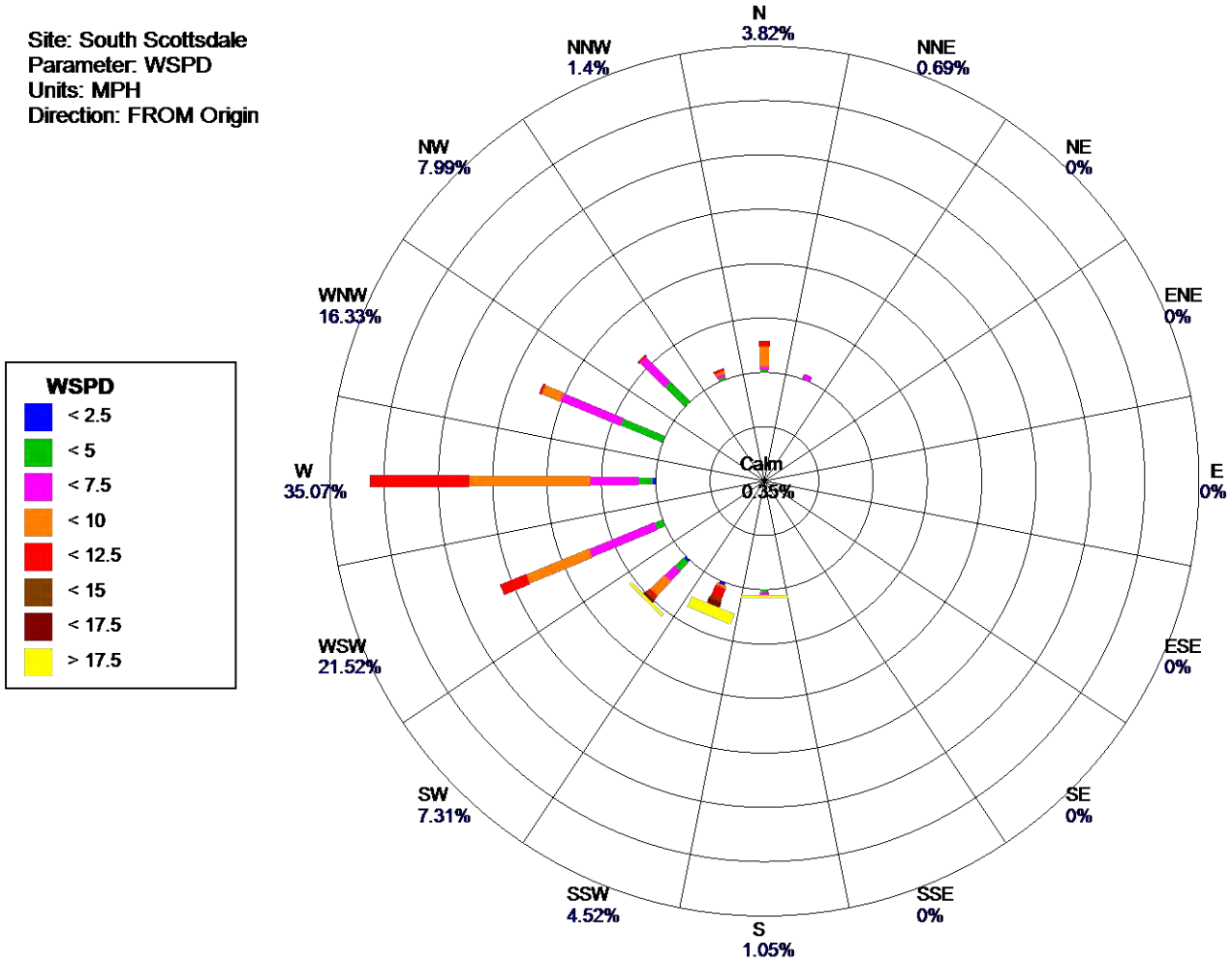
Period: 2023-07-26 00:00 - 2023-07-26 23:59

Site: Higley
Parameter: WSPD
Units: MPH
Direction: FROM Origin



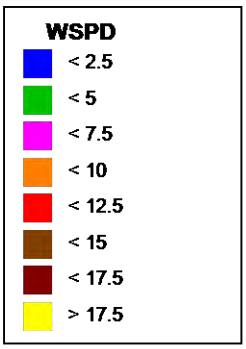
Period: 2024-07-14 00:00 - 2024-07-14 23:59

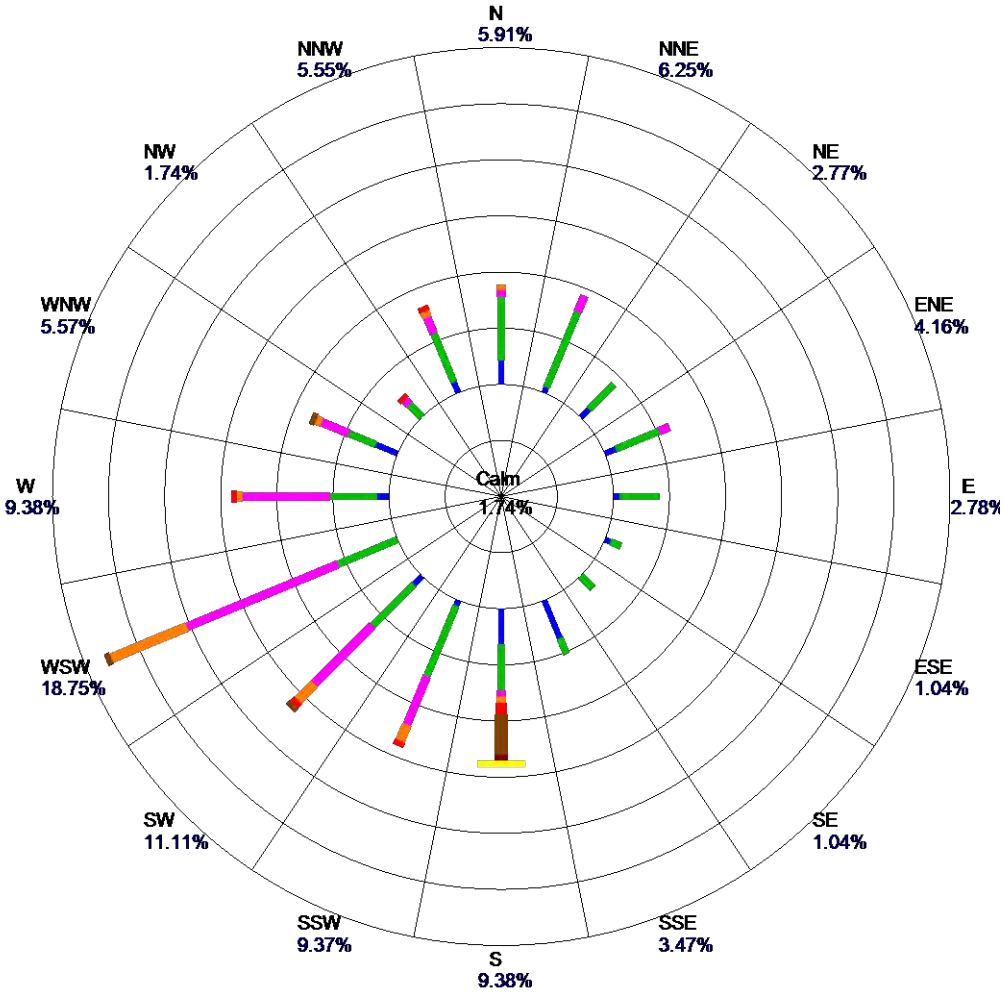
Site: South Scottsdale
Parameter: WSPD
Units: MPH
Direction: FROM Origin



Period: 2024-07-14 00:00 - 2024-07-14 23:59

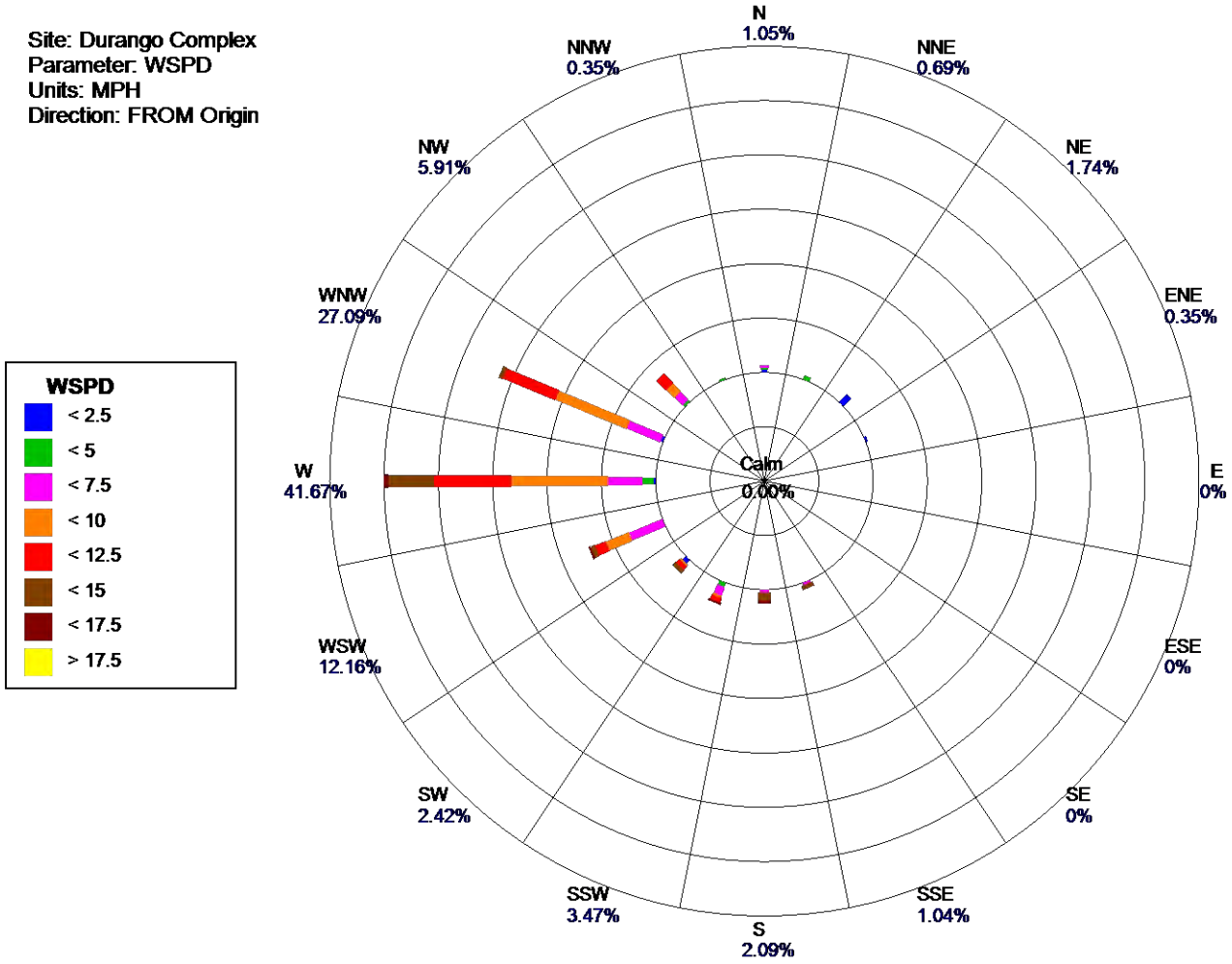
Site: West Chandler
Parameter: WSPD
Units: MPH
Direction: FROM Origin





Period: 2024-07-14 00:00 - 2024-07-14 23:59

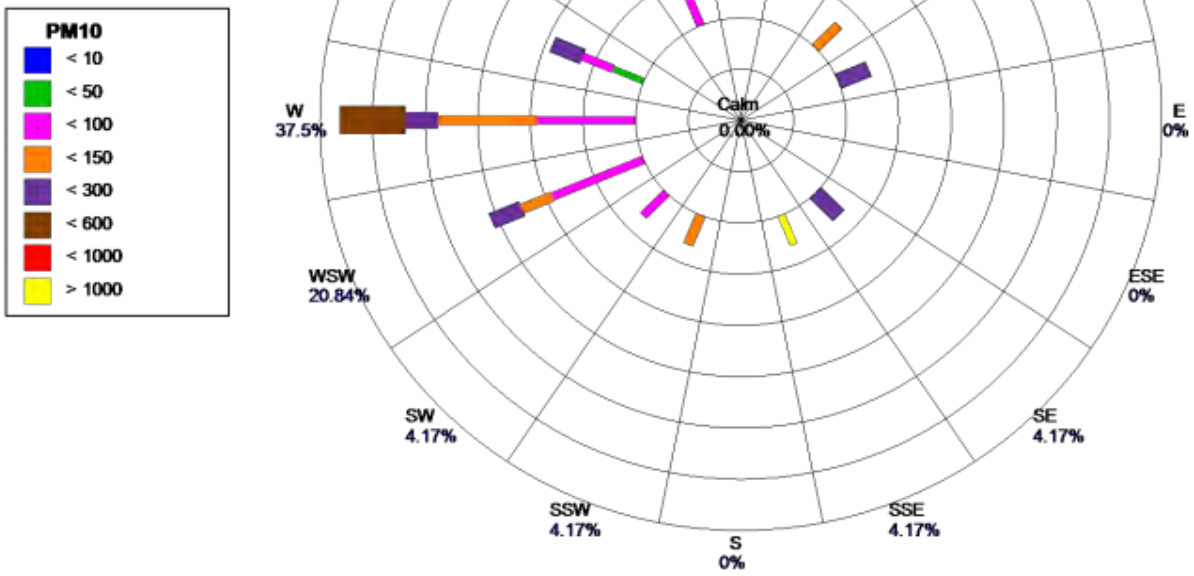
Site: Durango Complex
Parameter: WSPD
Units: MPH
Direction: FROM Origin



Period: 2024-07-14 00:00 - 2024-07-14 23:59

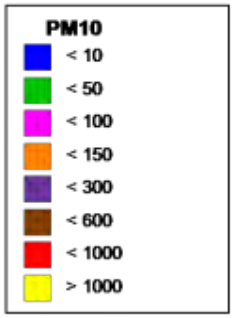
1-Hour PM10 Wind Roses for MCAQD Air Quality Monitors

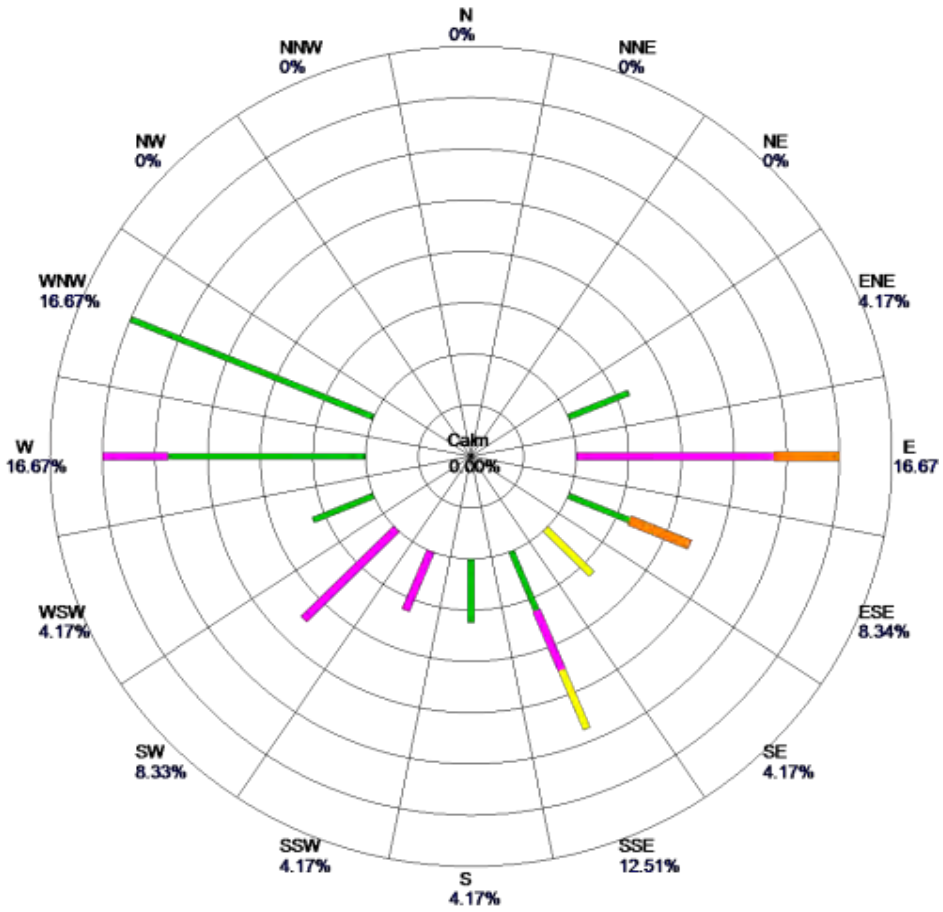
Site: West 43rd Ave
Parameter: PM10
Units: UG/M3
Direction: FROM Origin



Period: 2023-07-21 00:00 - 2023-07-21 23:59

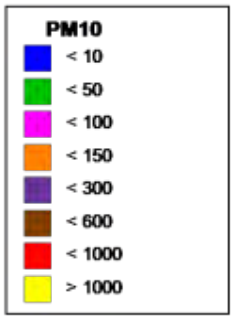
Site: Higley
Parameter: PM10
Units: UG/M3
Direction: FROM Origin

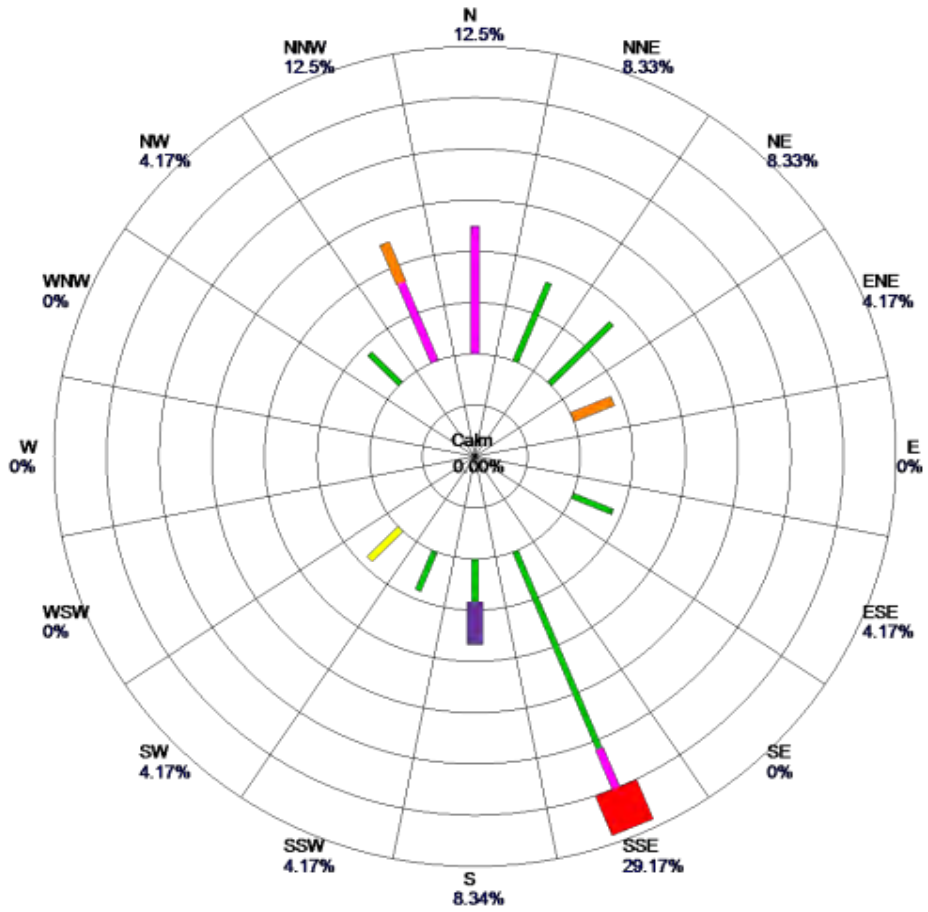




Period: 2023-07-26 00:00 - 2023-07-26 23:59

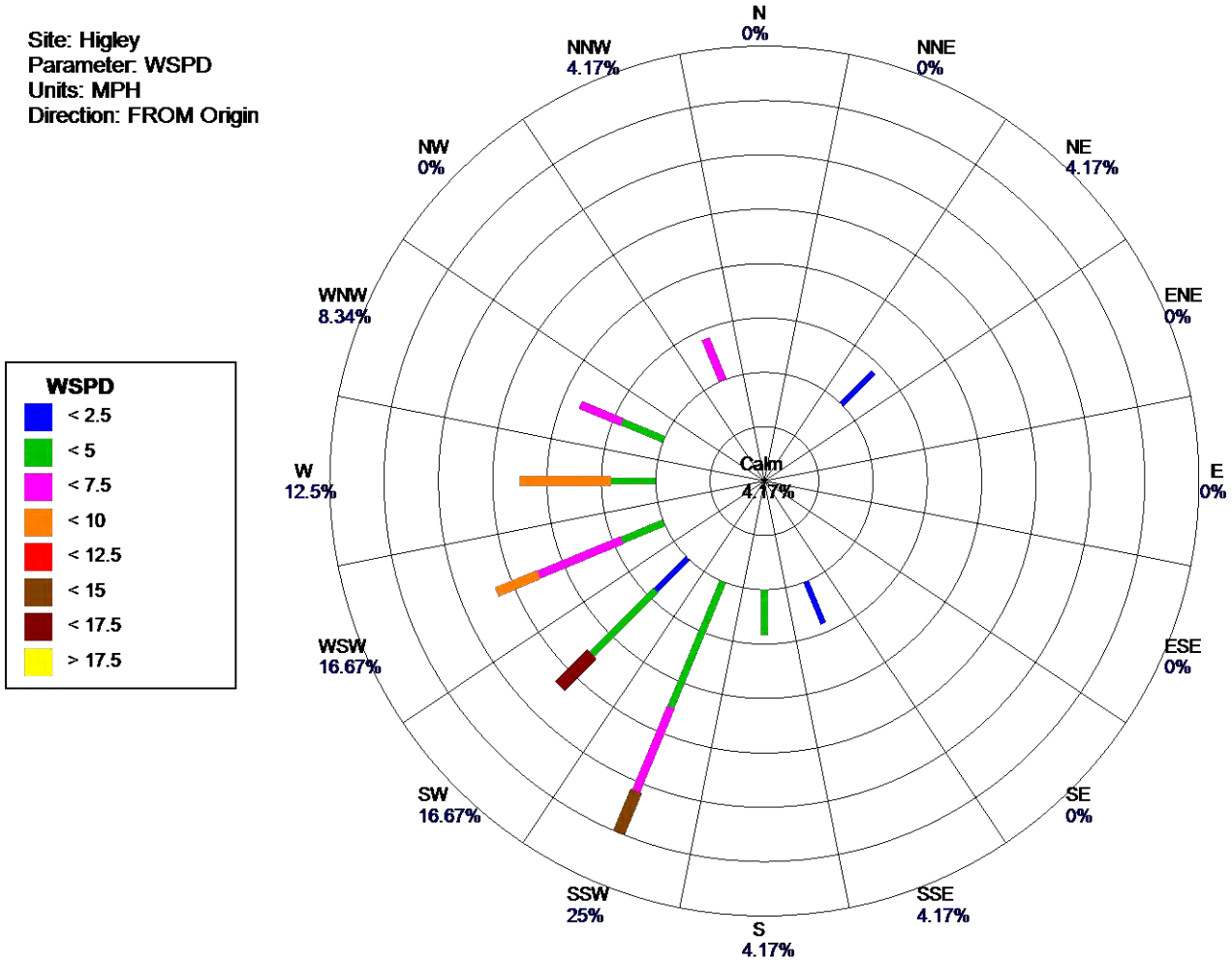
Site: Zuni Hills
Parameter: PM10
Units: UG/M3
Direction: FROM Origin





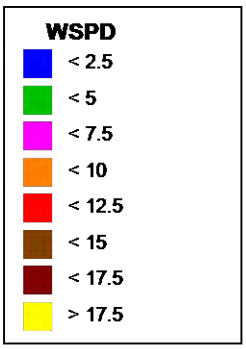
Period: 2022-09-02 00:00 - 2022-09-02 23:59

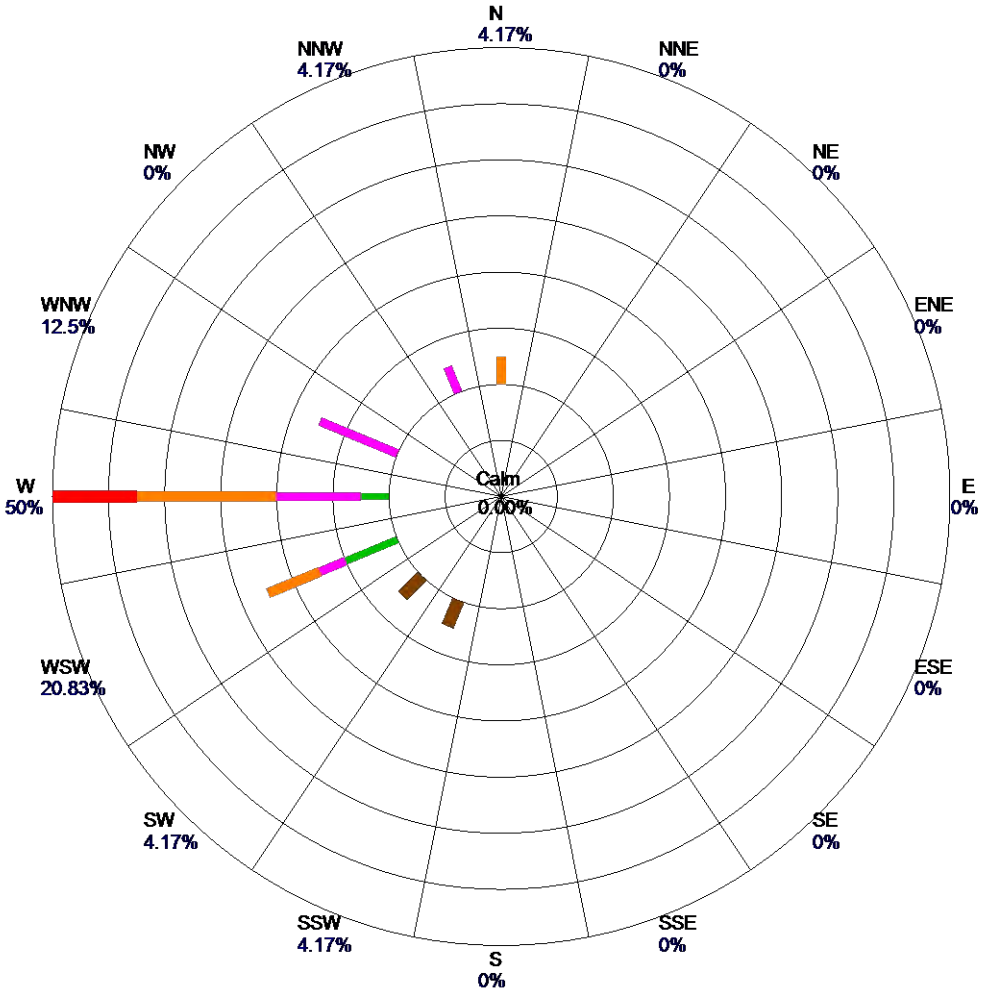
Site: Higley
Parameter: WSPD
Units: MPH
Direction: FROM Origin



Period: 2024-07-14 00:00 - 2024-07-14 23:59

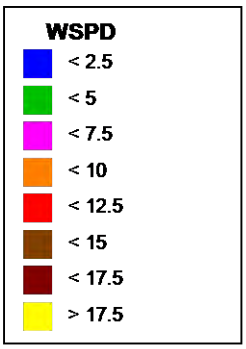
Site: South Scottsdale
Parameter: WSPD
Units: MPH
Direction: FROM Origin

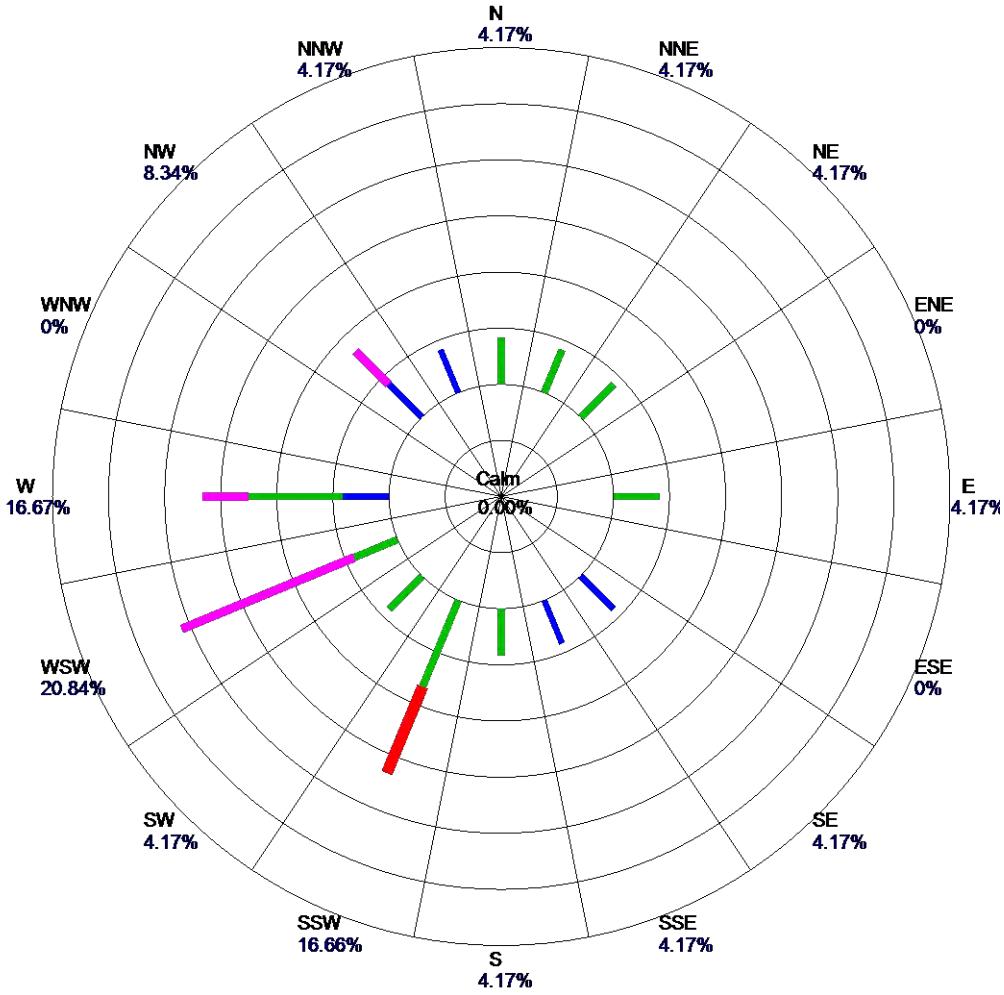




Period: 2024-07-14 00:00 - 2024-07-14 23:59

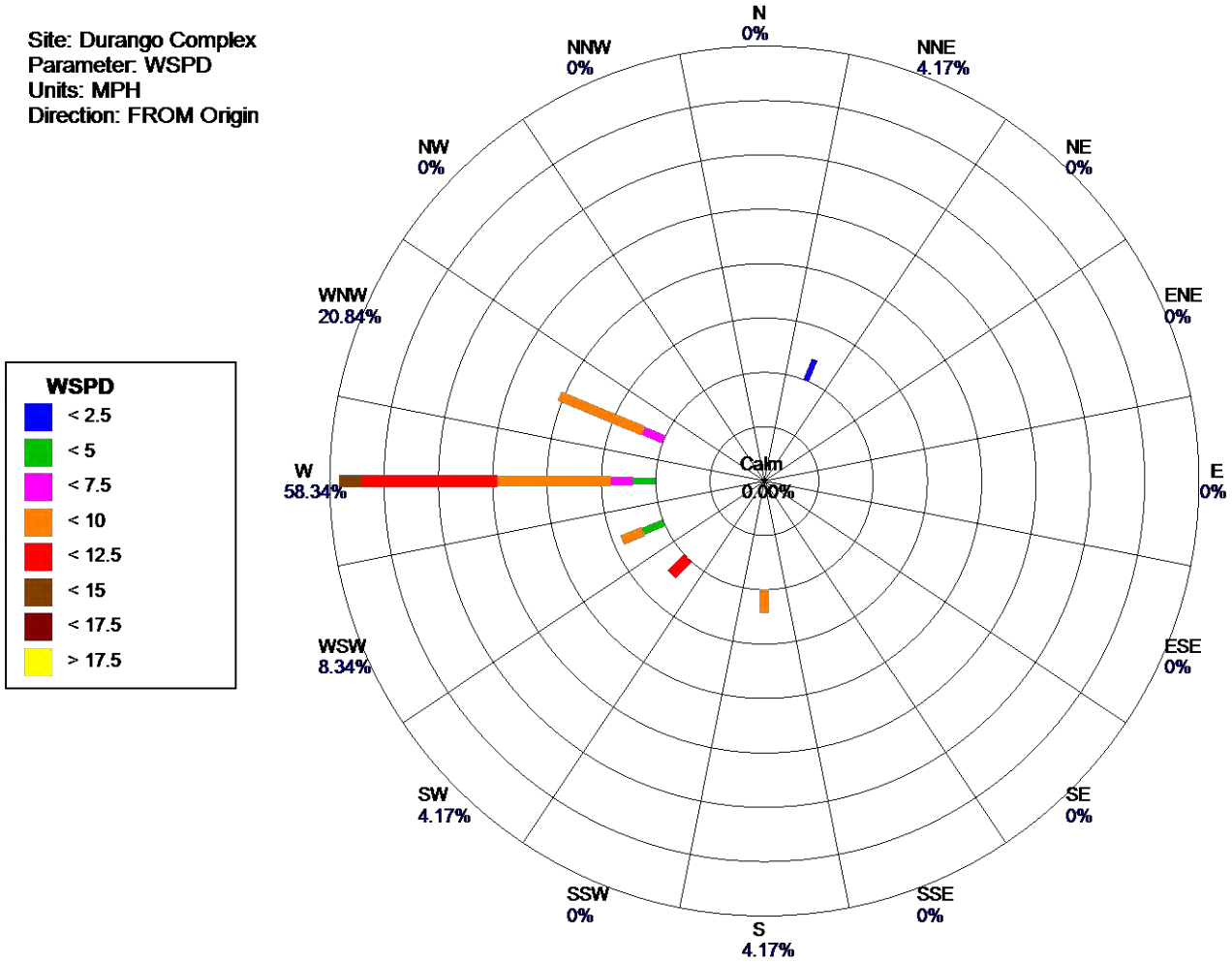
Site: West Chandler
Parameter: WSPD
Units: MPH
Direction: FROM Origin





Period: 2024-07-14 00:00 - 2024-07-14 23:59

Site: Durango Complex
Parameter: WSPD
Units: MPH
Direction: FROM Origin



Period: 2024-07-14 00:00 - 2024-07-14 23:59

ARIZONA
DEPARTMENT OF
TRANSPORTATION

Appendix C

LINK SOURCE TYPE DISTRIBUTION

From MAG Regional Model

RoadTypeID	SourceTypeID	SourceTypeHourFraction	
4	11	0.001338	
4	21	0.387033	
4	31	0.381478	
4	32	0.074812	
4	41	0.00105	HD Truck % for Urban restricted roadway
4	42	0.000499	types 41-62
4	43	0.000666	16%
4	51	0.000534	
4	52	0.100093	
4	53	0.005722	
4	54	0.003428	
4	61	0.018411	
4	62	0.024936	
5	11	0.001976	
5	21	0.467036	
5	31	0.46033	
5	32	0.027749	
5	41	0.000367	HD Truck % for urban unrestricted roadway
5	42	0.003889	types 41-62
5	43	0.000233	4%
5	51	0.000157	
5	52	0.029507	
5	53	0.001687	
5	54	0.001011	
5	61	0.002574	
5	62	0.003486	

Guadalupe Road TI

Truck Percentage 10% Table 1 for freeway mainline

RoadTypeID	SourceTypeID	Percent of vehicle type	Adjusted SourceTypeHourFraction
4	11	0.001584	90% 0.001426
4	21	0.458211	90% 0.412708
4	31	0.451634	90% 0.406784
4	32	0.088571	90% 0.079775
4	41	0.006761	10% 0.000671
4	42	0.003211	10% 0.000319
4	43	0.004288	10% 0.000426
4	51	0.003438	10% 0.000341
4	52	0.644353	10% 0.063989
4	53	0.036836	10% 0.003658
4	54	0.022068	10% 0.002192
4	61	0.118522	10% 0.01177
4	62	0.160523	10% 0.015941

Truck Percentage 2% Table 2 for intersection arterials and ramps

RoadTypeID	SourceTypeID	Percent of vehicle type	Adjusted SourceTypeHourFraction
5	11	0.002065	98% 0.00203095
5	21	0.487974	98% 0.47995131
5	31	0.480968	98% 0.4730601
5	32	0.028993	98% 0.0285162
5	41	0.008552	2% 0.00014061
5	42	0.090637	2% 0.0014902
5	43	0.005424	2% 8.9177E-05
5	51	0.00367	2% 6.0332E-05
5	52	0.687648	2% 0.01130592
5	53	0.039311	2% 0.00064633
5	54	0.023551	2% 0.00038722
5	61	0.059977	2% 0.0009861
5	62	0.081231	2% 0.00133555

Start with SourceTypeHourFraction derived from MAG data (based on operating hours)
Divide into LD (11,21,31,32) and HD trucks (41-62)
Determine each source type's percentage of car or truck categorty (column L)
Determine worst case truck percent (column M)
Use the percentage in Column L to further breakdown the car percentage or truck percentage by sourcetype

MOVES input details:
use roadtype 4 for mainline links
use roadtype 5 distribution for all arterials and ramps

From MAG Regional Model

RoadTypeID	SourceTypeID	SourceTypeHourFraction	
4	11	0.001338	
4	21	0.387033	
4	31	0.381478	
4	32	0.074812	
4	41	0.00105	HD Truck % for Urban restricted roadway
4	42	0.000499	types 41-62
4	43	0.000666	16%
4	51	0.000534	
4	52	0.100093	
4	53	0.005722	
4	54	0.003428	
4	61	0.018411	
4	62	0.024936	
5	11	0.001976	
5	21	0.467036	
5	31	0.46033	
5	32	0.027749	
5	41	0.000367	HD Truck % for urban unrestricted roadway
5	42	0.003889	types 41-62
5	43	0.000233	4%
5	51	0.000157	
5	52	0.029507	
5	53	0.001687	
5	54	0.001011	
5	61	0.002574	
5	62	0.003486	

Elliot Road TI

Truck Percentage 10% Table 1 for freeway mainline

RoadTypeID	SourceTypeID	Percent of vehicle type	Adjusted SourceTypeHourFraction
4	11	0.001584	90% 0.001427
4	21	0.458211	90% 0.412808
4	31	0.451634	90% 0.406883
4	32	0.088571	90% 0.079795
4	41	0.006761	10% 0.00067
4	42	0.003211	10% 0.000318
4	43	0.004288	10% 0.000425
4	51	0.003438	10% 0.000341
4	52	0.644353	10% 0.063848
4	53	0.036836	10% 0.00365
4	54	0.022068	10% 0.002187
4	61	0.118522	10% 0.011744
4	62	0.160523	10% 0.015906

Truck Percentage 6% Table 2 for intersection arterials and ramps

RoadTypeID	SourceTypeID	Percent of vehicle type	Adjusted SourceTypeHourFraction
5	11	0.002065	94% 0.001942
5	21	0.487974	94% 0.458986
5	31	0.480968	94% 0.452396
5	32	0.028993	94% 0.027271
5	41	0.008552	6% 0.000508
5	42	0.090637	6% 0.005384
5	43	0.005424	6% 0.000322
5	51	0.00367	6% 0.000218
5	52	0.687648	6% 0.04085
5	53	0.039311	6% 0.002335
5	54	0.023551	6% 0.001399
5	61	0.059977	6% 0.003563
5	62	0.081231	6% 0.004826

Start with SourceTypeHourFraction derived from MAG data (based on operating hours)
Divide into LD (11,21,31,32) and HD trucks (41-62)
Determine each source type's percentage of car or truck categorty (column L)
Determine worst case truck percent (column M)
Use the percentage in Column L to further breakdown the car percentage or truck percentage by sourcetype

MOVES input details:
use roadtype 4 for mainline links
use roadtype 5 distribution for all arterials and ramps

From MAG Regional Model

RoadTypeID	SourceTypeID	SourceTypeHourFraction	
4	11	0.001338	
4	21	0.387033	
4	31	0.381478	
4	32	0.074812	
4	41	0.00105	HD Truck % for Urban restricted roadway
4	42	0.000499	types 41-62
4	43	0.000666	16%
4	51	0.000534	
4	52	0.100093	
4	53	0.005722	
4	54	0.003428	
4	61	0.018411	
4	62	0.024936	
5	11	0.001976	
5	21	0.467036	
5	31	0.46033	
5	32	0.027749	
5	41	0.000367	HD Truck % for urban unrestricted roadway
5	42	0.003889	types 41-62
5	43	0.000233	4%
5	51	0.000157	
5	52	0.029507	
5	53	0.001687	
5	54	0.001011	
5	61	0.002574	
5	62	0.003486	

Power Road TI

Truck Percentage 10% Table 1 for freeway mainline

RoadTypeID	SourceTypeID	Percent of vehicle type	Adjusted SourceTypeHourFraction
4	11	0.001584	90% 0.001432
4	21	0.458211	90% 0.414415
4	31	0.451634	90% 0.408467
4	32	0.088571	90% 0.080105
4	41	0.006761	10% 0.000646
4	42	0.003211	10% 0.000307
4	43	0.004288	10% 0.00041
4	51	0.003438	10% 0.000329
4	52	0.644353	10% 0.061587
4	53	0.036836	10% 0.003521
4	54	0.022068	10% 0.002109
4	61	0.118522	10% 0.011328
4	62	0.160523	10% 0.015343

Truck Percentage 4% Table 2 for intersection arterials and ramps

RoadTypeID	SourceTypeID	Percent of vehicle type	Adjusted SourceTypeHourFraction
5	11	0.002065	96% 0.001981
5	21	0.487974	96% 0.468203
5	31	0.480968	96% 0.46148
5	32	0.028993	96% 0.027818
5	41	0.008552	4% 0.000347
5	42	0.090637	4% 0.003672
5	43	0.005424	4% 0.00022
5	51	0.00367	4% 0.000149
5	52	0.687648	4% 0.027862
5	53	0.039311	4% 0.001593
5	54	0.023551	4% 0.000954
5	61	0.059977	4% 0.00243
5	62	0.081231	4% 0.003291

Start with SourceTypeHourFraction derived from MAG data (based on operating hours)
Divide into LD (11,21,31,32) and HD trucks (41-62)
Determine each source type's percentage of car or truck categorty (column L)
Determine worst case truck percent (column M)
Use the percentage in Column L to further breakdown the car percentage or truck percentage by sourcetype

MOVES input details:
use roadtype 4 for mainline links
use roadtype 5 distribution for all arterials and ramps

From MAG Regional Model

RoadTypeID	SourceTypeID	SourceTypeHourFraction	
4	11	0.001338	
4	21	0.387033	
4	31	0.381478	
4	32	0.074812	
4	41	0.00105	HD Truck % for Urban restricted roadway
4	42	0.000499	types 41-62
4	43	0.000666	16%
4	51	0.000534	
4	52	0.100093	
4	53	0.005722	
4	54	0.003428	
4	61	0.018411	
4	62	0.024936	
5	11	0.001976	
5	21	0.467036	
5	31	0.46033	
5	32	0.027749	
5	41	0.000367	HD Truck % for urban unrestricted roadway
5	42	0.003889	types 41-62
5	43	0.000233	4%
5	51	0.000157	
5	52	0.029507	
5	53	0.001687	
5	54	0.001011	
5	61	0.002574	
5	62	0.003486	

SR202L/SR24 TI

Truck Percentage 8% Table 1 for freeway mainline

RoadTypeID	SourceTypeID	Percent of vehicle type	Adjusted SourceTypeHourFraction
4	11	0.001584	92% 0.001452
4	21	0.458211	92% 0.420113
4	31	0.451634	92% 0.414083
4	32	0.088571	92% 0.081206
4	41	0.006761	8% 0.000562
4	42	0.003211	8% 0.000267
4	43	0.004288	8% 0.000357
4	51	0.003438	8% 0.000286
4	52	0.644353	8% 0.053576
4	53	0.036836	8% 0.003063
4	54	0.022068	8% 0.001835
4	61	0.118522	8% 0.009855
4	62	0.160523	8% 0.013347

Truck Percentage 5% Table 2 for intersection arterials and ramps

RoadTypeID	SourceTypeID	Percent of vehicle type	Adjusted SourceTypeHourFraction
5	11	0.002065	95% 0.001965
5	21	0.487974	95% 0.46445
5	31	0.480968	95% 0.457781
5	32	0.028993	95% 0.027595
5	41	0.008552	5% 0.000412
5	42	0.090637	5% 0.004369
5	43	0.005424	5% 0.000261
5	51	0.00367	5% 0.000177
5	52	0.687648	5% 0.03315
5	53	0.039311	5% 0.001895
5	54	0.023551	5% 0.001135
5	61	0.059977	5% 0.002891
5	62	0.081231	5% 0.003916

Start with SourceTypeHourFraction derived from MAG data (based on operating hours)
Divide into LD (11,21,31,32) and HD trucks (41-62)
Determine each source type's percentage of car or truck categorty (column L)
Determine worst case truck percent (column M)
Use the percentage in Column L to further breakdown the car percentage or truck percentage by sourcetype

MOVES input details:
use roadtype 4 for mainline links
use roadtype 5 distribution for all arterials and ramps

From MAG Regional Model

RoadTypeID	SourceTypeID	SourceTypeHourFraction	
4	11	0.001338	
4	21	0.387033	
4	31	0.381478	
4	32	0.074812	
4	41	0.00105	HD Truck % for Urban restricted roadway
4	42	0.000499	types 41-62
4	43	0.000666	16%
4	51	0.000534	
4	52	0.100093	
4	53	0.005722	
4	54	0.003428	
4	61	0.018411	
4	62	0.024936	
5	11	0.001976	
5	21	0.467036	
5	31	0.46033	
5	32	0.027749	
5	41	0.000367	HD Truck % for urban unrestricted roadway
5	42	0.003889	types 41-62
5	43	0.000233	4%
5	51	0.000157	
5	52	0.029507	
5	53	0.001687	
5	54	0.001011	
5	61	0.002574	
5	62	0.003486	

Ellsworth Road TI

Truck Percentage 10% Table 1 for freeway mainline

RoadTypeID	SourceTypeID	Percent of vehicle type		Adjusted SourceTypeHourFraction
4	11	0.001584	90%	0.00142
4	21	0.458211	90%	0.410844
4	31	0.451634	90%	0.404947
4	32	0.088571	90%	0.079415
4	41	0.006761	10%	0.000699
4	42	0.003211	10%	0.000332
4	43	0.004288	10%	0.000443
4	51	0.003438	10%	0.000355
4	52	0.644353	10%	0.066609
4	53	0.036836	10%	0.003808
4	54	0.022068	10%	0.002281
4	61	0.118522	10%	0.012252
4	62	0.160523	10%	0.016594

Truck Percentage 4% Table 2 for intersection arterials and ramps

RoadTypeID	SourceTypeID	Percent of vehicle type		Adjusted SourceTypeHourFraction
5	11	0.002065	96%	0.001977
5	21	0.487974	96%	0.467211
5	31	0.480968	96%	0.460503
5	32	0.028993	96%	0.027759
5	41	0.008552	4%	0.000364
5	42	0.090637	4%	0.003857
5	43	0.005424	4%	0.000231
5	51	0.00367	4%	0.000156
5	52	0.687648	4%	0.02926
5	53	0.039311	4%	0.001673
5	54	0.023551	4%	0.001002
5	61	0.059977	4%	0.002552
5	62	0.081231	4%	0.003456

Start with SourceTypeHourFraction derived from MAG data (based on operating hours)
Divide into LD (11,21,31,32) and HD trucks (41-62)
Determine each source type's percentage of car or truck categorty (column L)
Determine worst case truck percent (column M)
Use the percentage in Column L to further breakdown the car percentage or truck percentage by sourcetype

MOVES input details:
use roadtype 4 for mainline links
use roadtype 5 distribution for all arterials and ramps

From MAG Regional Model

RoadTypeID	SourceTypeID	SourceTypeHourFraction	
4	11	0.001338	
4	21	0.387033	
4	31	0.381478	
4	32	0.074812	
4	41	0.00105	HD Truck % for Urban restricted roadway
4	42	0.000499	types 41-62
4	43	0.000666	16%
4	51	0.000534	
4	52	0.100093	
4	53	0.005722	
4	54	0.003428	
4	61	0.018411	
4	62	0.024936	
5	11	0.001976	
5	21	0.467036	
5	31	0.46033	
5	32	0.027749	
5	41	0.000367	HD Truck % for urban unrestricted roadway
5	42	0.003889	types 41-62
5	43	0.000233	4%
5	51	0.000157	
5	52	0.029507	
5	53	0.001687	
5	54	0.001011	
5	61	0.002574	
5	62	0.003486	

Meridian Road TI

Truck Percentage 8% Table 1 for freeway mainline

RoadTypeID	SourceTypeID	Percent of vehicle type	Adjusted SourceTypeHourFraction
4	11	0.001584	92% 0.001453
4	21	0.458211	92% 0.420453
4	31	0.451634	92% 0.414418
4	32	0.088571	92% 0.081272
4	41	0.006761	8% 0.000557
4	42	0.003211	8% 0.000265
4	43	0.004288	8% 0.000353
4	51	0.003438	8% 0.000283
4	52	0.644353	8% 0.053097
4	53	0.036836	8% 0.003035
4	54	0.022068	8% 0.001819
4	61	0.118522	8% 0.009767
4	62	0.160523	8% 0.013228

Truck Percentage 5% Table 2 for intersection arterials and ramps

RoadTypeID	SourceTypeID	Percent of vehicle type	Adjusted SourceTypeHourFraction
5	11	0.002065	95% 0.001955
5	21	0.487974	95% 0.462023
5	31	0.480968	95% 0.455389
5	32	0.028993	95% 0.027451
5	41	0.008552	5% 0.000455
5	42	0.090637	5% 0.00482
5	43	0.005424	5% 0.000288
5	51	0.00367	5% 0.000195
5	52	0.687648	5% 0.03657
5	53	0.039311	5% 0.002091
5	54	0.023551	5% 0.001252
5	61	0.059977	5% 0.00319
5	62	0.081231	5% 0.00432

Start with SourceTypeHourFraction derived from MAG data (based on operating hours)
Divide into LD (11,21,31,32) and HD trucks (41-62)
Determine each source type's percentage of car or truck categorty (column L)
Determine worst case truck percent (column M)
Use the percentage in Column L to further breakdown the car percentage or truck percentage by sourcetype

MOVES input details:
use roadtype 4 for mainline links
use roadtype 5 distribution for all arterials and ramps

Appendix D

PM MOVES AND AERMOD MODELING INPUT AND OUTPUT FILES

(PM MOVES and AERMOD Modeling Files are Available Upon Request and Can be Found in the Project Folder)