



**Exceptional Event Mitigation Plan:
Phoenix, Rillito, West Pinal, and Yuma PM₁₀
Nonattainment Areas**

*Air Quality Division
August 13, 2018 PROPOSED*

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Exceptional Event Mitigation Plan: Phoenix, Rillito, West Pinal, and Yuma PM10 Nonattainment Areas

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EXCEPTIONAL EVENTS MITIGATION PLAN CHECKLIST – (40 CFR 51.930)

40 CFR 51.930 – MITIGATION OF EXCEPTIONAL EVENTS Regulatory Citations		
Citation	Short Title	Description
51.930(a) – Minimum Requirements to Exclude Data Due to Exceptional Events		
A State requesting to exclude air quality data due to exceptional events must take appropriate and reasonable actions to protect public health from exceedances or violations of the NAAQS. At a minimum, the State must:		
51.930(a)(1)	Public Notification	Provide prompt public notification whenever air quality concentrations exceed or are expected to exceed an applicable ambient air quality standard.
51.930(a)(2)	Public Education	Provide public education concerning actions that individuals may take to reduce exposures to unhealthy levels of air quality during and following an exceptional event.
51.930(a)(3)	Implementation of Appropriate Measures	Provide for the implementation of appropriate measures to protect public health from exceedances or violations of ambient air quality standards caused by exceptional events.
51.930(b) – Areas Requiring Mitigation Plans		
Development of mitigation plans for areas with historically documented or known seasonal events.		
51.930(b)(1)	General Requirements	All States having areas with historically documented or known seasonal events shall be required to develop a mitigation plan with the components in 51.930(b)(2) and submit such plan to the Administrator according to the requirements in 51.930(b)(3).
51.930(b)(1)(i)	Historically Documented or Seasonal Events	For purposes of the requirements set forth in 51.930, historically documented or known seasonal events shall include those events of the same type and pollutant that recur in a 3-year period and meet any of the following:
51.930(b)(1)(i)(A)	Events During a Three-Year Time Period	Three events or event seasons that a State submits a demonstration under the provisions of 40 CFR 50.14 in a 3- year period; or
51.930(b)(1)(i)(B)	Initial Notification of Exceptional Event	Three events or event seasons that are the subject of an initial notification of a potential exceptional event as defined in 40 CFR 50.14(c)(2) in a 3-year period regardless of whether the State submits a demonstration under the provisions of 40 CFR 50.14.
51.930(b)(1)(ii)	EPA Notification to States	The Administrator will provide written notification to States that they are subject to the requirements in 51.930(b) when the Administrator becomes aware of applicability.
51.930(b)(2) – Plan Components		
At a minimum, each mitigation plan developed under this paragraph shall contain provisions for the following:		
51.930(b)(2)(i)	Public Notification & Education Programs	Public notification to and education programs for affected or potentially affected communities. Such notification and education programs shall apply whenever air quality concentrations exceed or are expected to exceed a NAAQS with an averaging time that is less than or equal to 24-hours.

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40 CFR 51.930 – MITIGATION OF EXCEPTIONAL EVENTS		
Regulatory Citations		
Citation	Short Title	Description
51.930(b)(2)(ii)	Identification & Implementation of Mitigation Measures	Steps to identify, study and implement mitigating measures, including approaches to address each of the following:
51.930(b)(2)(ii)(A)	Abate/Minimize Contributing Controllable Sources	Measures to abate or minimize contributing controllable sources of identified pollutants.
51.930(b)(2)(ii)(B)	Minimize Public Exposure to High Concentrations	Methods to minimize public exposure to high concentrations of identified pollutants.
51.930(b)(2)(ii)(C)	Collection and Maintenance of Data	Processes to collect and maintain data pertinent to the event.
51.930(b)(2)(ii)(D)	Consultation	Mechanisms to consult with other air quality managers in the affected area regarding the appropriate responses to abate and minimize impacts.
51.930(b)(2)(iii)	Periodic Review and Evaluation of Mitigation Plan	Provisions for periodic review and evaluation of the mitigation plan and its implementation and effectiveness by the State & interested stakeholders.
51.930(b)(2)(iii)(A)	Public Process Requirements for Plan	With the submission of the initial mitigation plan according to the requirements in 51.930(b)(3) that contains the elements in 51.930(b)(2), the State must:
51.930(b)(2)(iii)(A)(1)	Public Comment	Document that a draft version of the mitigation plan was available for public comment for a minimum of 30 days;
51.930(b)(2)(iii)(A)(2)	Submit Public Comment with Plan	Submit the public comments received along with its mitigation plan to the Administrator
51.930(b)(2)(iii)(A)(3)	Explanation of Revisions due to Public Comments	In its submission to the Administrator, for each public comment received, explain the changes made to the mitigation plan or explain why the State did not make any changes to the mitigation plan.
51.930(b)(2)(iii)(B)	Periodic Review and Evaluation	The State shall specify in its mitigation plan the periodic review and evaluation process that it intends to follow for reviews following the initial review identified in 51.930(b)(2)(iii)(A).
51.930(b)(3) – Submission of Mitigation Plans		
All States subject to 51.930(b) shall, after notice and opportunity for public comment identified in 51.930(b)(2)(iii)(A), submit a mitigation plan to the Administrator for review and verification of the plan components identified in 51.930(b)(2).		
51.930(b)(3)(i)	Deadline for Submittal of Mitigation Plan	States shall submit their mitigation plans within 2 years of being notified they are subject to 51.930(b).
51.930(b)(3)(ii)	EPA Review of Plan	The Administrator shall review each mitigation plan developed according to the requirements in paragraph (b)(2) of this section and shall notify the submitting State upon completion of such review.

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40 CFR 51.930 – MITIGATION OF EXCEPTIONAL EVENTS Regulatory Citations		
Citation	Short Title	Description
50.14 – TREATMENT OF AIR QUALITY MONITORING DATA INFLUENCED BY EXCEPTIONAL EVENTS		
50.14(b)(9) – Mitigation Plans		
50.14(b)(9)(i)		Except as provided for in 50.14(b)(9)(ii), where a State is subject to the requirements of 40 CFR 51.930(b), the Administrator shall not place a concurrence flag in the appropriate field for the data record in the AQS database, as specified in 50.14(c)(2)(ii), if the data are of the type and pollutant that are the focus of the mitigation plan until the State fulfills its obligations under the requirements of 40 CFR 51.930(b). The Administrator may not concur or defer action on such a demonstration.
50.14(b)(9)(ii)		The prohibition on placing a concurrence flag in the appropriate field for the data record in the AQS database by the Administrator stated in 50.14(b)(9)(i) does not apply to data that are included in an exceptional events demonstration that is:
50.14(b)(9)(ii)(A)		Submitted in accordance with 50.14(c)(3) that is also of the type and pollutant that is the focus of the mitigation plan.
50.14(b)(9)(ii)(B)		Submitted within 2-year period allowed for mitigation plan development specified in 51.930(b)(3).

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1 INTRODUCTION

1.1 Statement of Introduction and Purpose

The U.S. Environmental Protection Agency's (EPA's) exceptional event rule provides for the exclusion of monitored air quality data when determining compliance with the National Ambient Air Quality Standards (NAAQS) if a state can show that an exceedance of the NAAQS was caused by an exceptional event. Exceptional events can be the result of human activity unlikely to recur or natural events such as wildfires, volcanic eruptions, or high wind episodes.

In October 2016 EPA revised the rule by adding regulatory elements for states and tribes to follow as they develop mitigation plans for areas with "historically documented" or "known seasonal" recurring events (i.e., three similar events of the same type and pollutant in a three-year period).¹ The revised rule defined those areas to which mitigation requirements apply and clarified that EPA may not concur with a request to exclude data unless an air quality agency has submitted the required plan within two years of the effective date of the rule.

The following areas in Arizona were identified as subject to mitigation plan requirements due to PM₁₀ NAAQS exceedances from high winds.²

- 1) Phoenix PM₁₀ Nonattainment Area
- 2) Rillito PM₁₀ Nonattainment Area
- 3) West Pinal PM₁₀ Nonattainment Area
- 4) Yuma PM₁₀ Nonattainment Area
- 5) Gila River Indian Community
- 6) Salt River Pima-Maricopa Indian Community

This document was developed to comply with federal mitigation plan requirements to reduce PM₁₀ emissions and limit public exposure during high-wind dust events in the Phoenix, Rillito, West Pinal, and Yuma areas.

1.2 Regulatory Background

As noted above, all valid monitored exceedances must be included when determining compliance with the National Ambient Air Quality Standards unless the state can demonstrate that the exceedances are due to an exceptional event. Under the exceptional event rule, the state must demonstrate the following technical criteria to exclude relevant ambient data.³

¹ See *Treatment of Data Influenced by Exceptional Events*, 81 FR 68216, 68218; October 3, 2016; effective September 30, 2016.

² PM₁₀ is particulate matter that consists of particles with diameters that are generally 10 micrometers and smaller.

³ See the exceptional events definitions and rule at 40 CFR 50.1 and 50.14.

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- A clear causal relationship between a specific event and a monitored exceedance or violation
- The event was a natural event or caused by human activity unlikely to recur
- The event was not reasonably preventable or controllable

For exceedances due to a high wind dust event EPA requires the state to show that “reasonable measures” to control the impact of the event on air quality were applied (on anthropogenic sources) at the time of the event.

Although an area may have reasonable controls in place, additional measures to protect the public during periods of elevated pollution concentrations may be necessary. Clean Air Act (CAA) Section 319(b)(3)(A), *Air Quality Monitoring Data Influenced by Exceptional Events*, identifies several principles that EPA must follow in developing implementing regulations for exceptional events, including the following.

- Protection of public health is the highest priority
- Timely information should be provided to the public in any case in which the air quality is unhealthy
- Each state must take necessary measures to safeguard public health regardless of the source of the air pollution

Accordingly, under 40 CFR 51.930, *Mitigation of Exceptional Events*, states and tribes are required to develop mitigation plans for areas with recurring events in which air quality concentrations exceed the NAAQS. Mitigation plan provisions include the following elements.

- Public notification and education
- Identification and implementation of mitigation measures
 - Mandatory or voluntary measures for controllable sources
 - Methods to minimize public exposure
 - Processes to collect data pertinent to an event
 - Mechanisms to consult with other air quality managers to abate and minimize impacts
- Periodic review of mitigation plan effectiveness and revision

Chapter 2 of this document outlines these elements and describes the steps taken by state and local agencies to meet mitigation plan requirements.

1.3 Identification of Areas

To protect the public health from exceedances or violations of the NAAQS, mitigation plans are required for areas with “historically documented” or “known seasonal” events. EPA defines these occurrences “to include events of the same type and pollutant (e.g., high wind dust/PM or wildfire/ozone) that recur every year, either seasonally or throughout the year.”⁴ Areas subject to mitigation requirements are more specifically identified as areas with three events (or three seasons with multiple events of a common type) in a three-year period for which a state has notified the EPA Administrator of its intent to request exclusion of monitored ambient exceedances due to an exceptional event.

Because of the frequent recurrence of high wind events and resultant high PM₁₀ concentrations (windblown dust), EPA identified 6 areas in Arizona as subject to the mitigation requirements in 40 CFR

⁴ See 81 FR 68271, October 3, 2016.

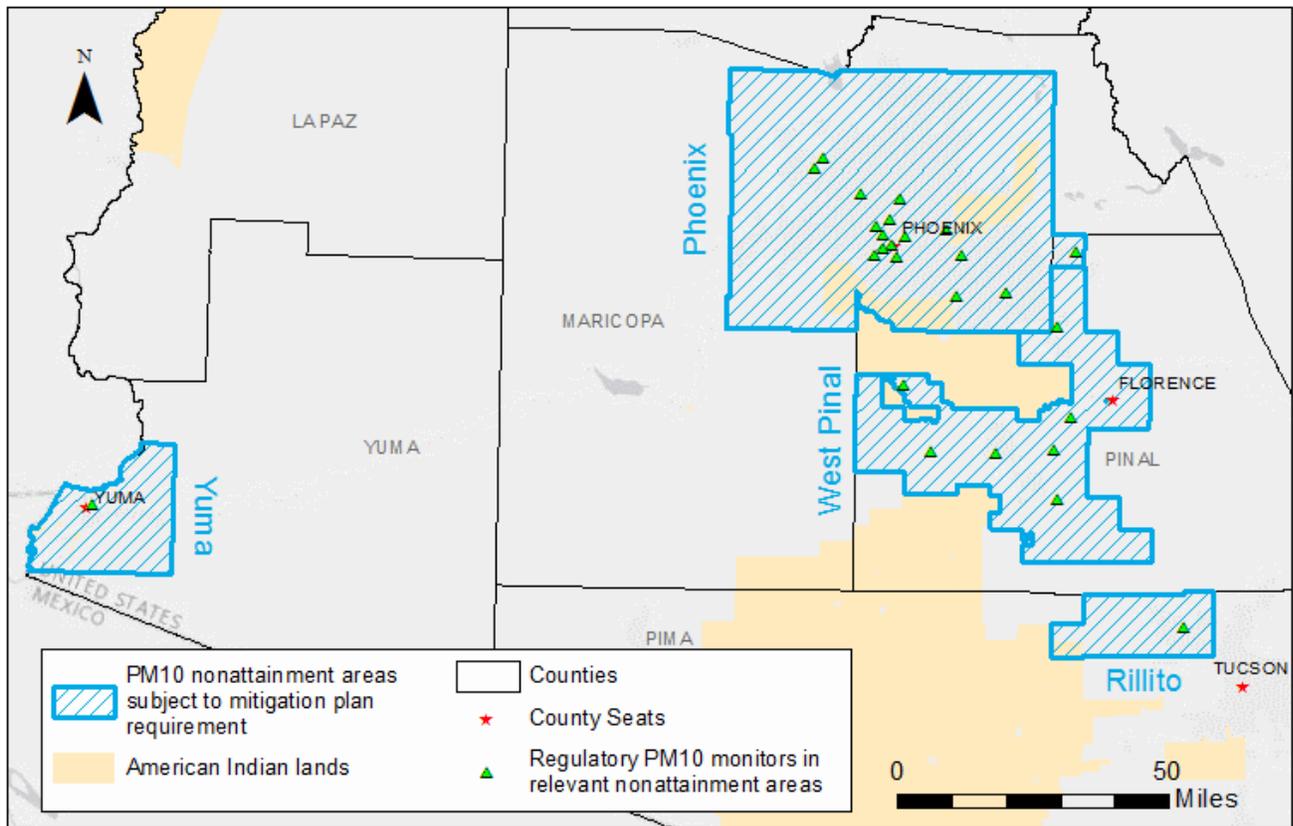
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51.930(b).⁵ These areas are listed in Table 1-1. Figure 1-1 shows their location within the state. Please note that mitigation plans are developed independently for areas under Gila River Indian Community and Salt River Pima-Maricopa Indian Community jurisdiction and demonstrations for these areas are not included in this document.

Table 1-1 Areas Subject to Mitigation Plan Requirements in Arizona

Pollutant	Event Type	Area
PM ₁₀	High Winds	Phoenix PM ₁₀ Nonattainment Area
PM ₁₀	High Winds	Rillito PM ₁₀ Nonattainment Area
PM ₁₀	High Winds	West Pinal PM ₁₀ Nonattainment Area
PM ₁₀	High Winds	Yuma PM ₁₀ Nonattainment Area
PM ₁₀	High Winds	Gila River Indian Community
PM ₁₀	High Winds	Salt River Pima-Maricopa Indian Community

Figure 1-1 Arizona PM₁₀ Nonattainment Areas Subject to Mitigation Plan Requirements



⁵ See 81 FR 68272, October 3, 2016. Identification of areas was based on ambient monitoring data for the period January 1, 2013 through December 31, 2015, and only includes data with “request exclusion flags” (flagged as exceptional) in EPA’s Air Quality System (AQS).

2 MITIGATION PLAN COMPONENTS (40 CFR 51.930(b)(2))

2.1 Public Notification and Education Programs – 40 CFR 51.930(b)(2)(i)

“At a minimum, each mitigation plan developed under this paragraph shall contain provisions for the following: (i) Public notification to and education programs for affected or potentially affected communities. Such notification and education programs shall apply whenever air quality concentrations exceed or are expected to exceed a national ambient air quality standard with an averaging time that is less than or equal to 24-hours.”

2.1.1 Public Notification

2.1.1.1 Phoenix/Rillito/West Pinal/Yuma

Arizona Department of Environmental Quality – Air Quality Forecast/Notification Program

The Arizona Department of Environmental Quality (ADEQ) meteorologists provide Air Quality Index (AQI) and Air Quality Risk-Based (AQR) forecasts to serve and assist the public in Arizona. Air Quality Index forecasts are based on the EPA’s AQI federal health standards and are issued for the following planning areas: Nogales (PM₁₀ and PM_{2.5}), Phoenix (PM₁₀, PM_{2.5}, ozone, and carbon monoxide), Tucson-Rillito (PM₁₀ and ozone), and Yuma (PM₁₀ and ozone). Air quality and risk-based forecasts are five-day forecasts that are disseminated daily Monday through Friday.

The AQI forecasts inform the public of expected air quality conditions and provide advice about what they can do to protect their health, especially that of children, seniors, and people with respiratory problems. For the areas listed in the previous paragraph, ADEQ also issues either a Health Watch (HW) when air pollution levels are expected to approach the federal health standard or a High Pollution Advisory (HPA) when air pollution levels are expected to exceed the federal health standard. A HPA and/or HW is typically issued a day in advance of an air quality episode. If weather conditions that could influence air quality change following a previously issued forecast the agency may also issue a “same day” HW or HPA.

Air quality episodes trigger a concerted effort by ADEQ and other local regulatory agencies to actively message the imminent event. The intent is to increase awareness of the event and suggest measures the public can take to curb or prevent pollutant contribution. Messaging is initiated once a decision is made by ADEQ meteorologists to issue a HW or HPA, which are communicated through multiple channels including:

- ADEQ website (all locations),
- ADEQ Office of Communications and Outreach (all locations),
- Maricopa County Air Quality Department (MCAQD) Office of Communications (Phoenix area),
- Capitol Rideshare (Phoenix area),
- Valley Metro (Phoenix area),
- EPA’s AirNow (all locations),
- National Weather Service (NWS) (all locations; HPA only),

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- Mobile Air Quality Applications (Nogales, Phoenix, and Yuma); and
- GovDelivery⁶ email and text bulletin subscriptions (all locations).

The ADEQ Office of Communications and Outreach uses the following general process for disseminating Health Watches and High Pollution Advisories.

- HPAs are sent through GovDelivery to the press statewide (no matter the HPA location) – 2,840 recipients
- Press releases sent to state media for HPAs – 2,887 recipients
- Phoenix area (Maricopa County) HPAs are also sent to the vehicle emissions testing stations for placement of messaging on electronic signs; and the travel reduction coordinator receives emails to distribute internally and to other agencies
- All HPAs are posted on the ADEQ website (home page banner and press release posting)
- All HWs are posted on the ADEQ website (home page banner) and link to the published forecast (no email)
- All HWs and HPAs are also posted to social media (Facebook – 1,773 followers and Twitter – 7,021 followers)

In addition to the distribution of HWs and HPAs described above, ADEQ forecasters post the following AQI forecasts to the ADEQ website on a daily basis (M-F) and send to subscribers via email or text messaging.

- Phoenix AQI forecast – 8,549 recipients
- Tucson-Rillito AQI forecast – 342 recipients
- Yuma AQI forecast – 778 recipients

ADEQ also issues a Maricopa County and Pinal County Dust Risk forecast (i.e., low, moderate, high risk). These risk-based forecasts assist industrial and agricultural operations with reducing dust pollution through planning work activities that will minimize emissions on moderate and high risk days. These forecasts are also used by county inspectors for enforcement purposes. Forecasts are made available on the ADEQ website and sent by GovDelivery email and text bulletin subscriptions.

- Maricopa County (Phoenix) Dust Risk forecast – 6,200 recipients
- Pinal County Dust Risk forecast – 689 recipients

In addition to the distributed HPA, an Air Quality Alert is issued through the National Weather Service. The alert is posted on their website and sent out to local media to be disseminated out to the general public.

Appendices A-D contain examples of AQI and AQR forecasts, HPAs, HWs, and press releases for the Phoenix, Rillito, West Pinal, and Yuma areas. See also discussion of the Air Quality Flag Program in Section 2.1.2.1.

⁶ GovDelivery is a company that provides web-based services, including an email and messaging platform exclusively to the public sector. The platform allows the public to self-subscribe to topics that are provided by individual agencies. It also allows government agencies the ability to produce a wide variety of bulletins and email alerts using predesigned templates or ones manually by individual organizations. Using GovDelivery, agencies can send emails and/or bulletins to subscriber lists in order to provide information regarding specific topics.

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Maricopa County Air Quality Department – Air Quality Forecast/Notification Program

The Maricopa County Air Quality Department (MCAQD) notifies the public by posting daily forecasts, health watches, and high pollution advisories to its website and through email and text bulletin subscriptions. In addition to the circulation of forecasts and advisories, the MCAQD website makes available current AQI data from an extensive ambient monitoring network so the public can quickly identify areas that may be exceeding health standards.

MCAQD also operates the *Rapid Response Notification System* in order to provide advance notice that pollution levels are rising at specific air quality monitors that are operated by MCAQD. Air quality permit holders with dust generating activities are encouraged to sign up for notifications of Rapid Response events. The Department sends recipients a message informing them of where a pollution hot spot is and what steps the permittee will need to take to help prevent an exceedance of the health standard. See Section 2.2.1.1 for further information on this program.

See Appendix A for examples of Maricopa County postings of daily forecasts, HWs, HPAs, and the *Rapid Response Notification System* webpage⁷. The public and permit holders are able to subscribe to receive rapid response notifications for specific monitors through *GovDelivery* through the webpage.⁷ See also the discussion of the Maricopa County Air Quality Flag Program in Section 2.1.2.1.

Pima County Department of Environmental Quality – Air Quality Forecast/Notification Program

The Pima County Department of Environmental Quality (PDEQ) notifies the public by posting daily forecasts, HWs, and HPAs to its website. Forecasts are valid for areas within and bordering the city of Tucson, Arizona. PDEQ issues Air Quality Advisories to notify the public through email subscription when eastern Pima County is experiencing poor air quality. The PDEQ website also provides current AQI data from an extensive ambient monitoring network.

See Appendix B for examples of Pima County postings of daily forecasts, Health Watches, High Pollution Advisories, and AQI data.

Pinal County Air Quality Control District – Air Quality Forecast/Notification Program

The Pinal County Air Quality Control District (PCAQCD) issues AQI forecasts to inform the public about expected air quality conditions and provide advice about what they can do to protect their health. Air quality forecasts are five-day forecasts that are disseminated daily, Monday through Friday. The district also issues a HW when air pollution levels are expected to approach the federal health standard or a HPA when air pollution levels are expected to exceed the federal health standard.

The issuance of a HPA and/or HW are typically made a day in advance of an air quality episode. If weather conditions that could influence air quality change following a previously issued forecast the agency may also issue a “same day” HW or HPA. This triggers a concerted effort by the county to actively message the imminent event by providing information to increase public awareness and suggest measures the public may take to mitigate or prevent pollutant contribution.

⁷ <https://www.maricopa.gov/1628/Rapid-Response-Notifications>

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The PCAQCD notifies the public by posting daily forecasts, health watches, and high pollution advisories to its website, via Twitter, and email via *EnviroFlash* [see also Section 2.1.2.3, *Flag Program*, and <http://www.enviroflash.info/signup.cfm>]. A banner with an issued HPA and HW is posted on the Pinal County main webpage and the PCAQCD webpage. The banner is a link to the forecast, which includes a discussion on how to minimize public exposure to high concentrations of a particular pollutant.

In addition to the AQI forecast and associated HW or HPA, an Air Quality Alert is issued through the National Weather Service. The alert is posted on their website and sent out to local media to be disseminated out to the general public. The District also provides current AQI data from an extensive ambient monitoring network on its website so the public can quickly identify areas that may be exceeding health standards.

Short Term Notifications

Notifications are emailed out to subscribers when hourly and/or short-term (i.e. 5 minute averages) PM₁₀ levels reach certain predetermined (for PM₁₀ exceedances) levels. For hourly average PM₁₀, the email notification is sent out at around 5 to 10 minutes after the hour for the hourly average period from which the elevated concentrations occurred. For short-term PM₁₀ (i.e. 5 minute averages), the email notification is sent out within 5 to 10 minutes after the ending of the 5-minute period with which the elevated PM₁₀ levels occurred.

See Appendix C for examples of Pinal County daily forecasts, HWs, HPAs, and AQI data. See also discussion of the Pinal County Air Quality Flag Program in Section 2.1.2.3.

Arizona Department of Transportation – Notification Programs

The following is a list of programs related to notifying the public of high pollution/dust events that are implemented by the Arizona Department of Transportation (ADOT).

Road Dust Detection and Warning System

The ADOT and the Federal Highway Administration (FHWA) are developing a dust-detection and warning system along Interstate 10, from Sunshine Boulevard to Picacho Peak Road (West Pinal PM₁₀ nonattainment area).⁸ The system includes technology that will recognize an approaching dust storm and warn ADOT and drivers of that threat.

High Dust Notifications on Social Media

The ADOT posts notifications on Facebook⁹ and Twitter¹⁰ about unplanned, major events that affect traffic including blowing high-wind dust events.

⁸ Arizona Department of Transportation, Southcentral Districts Project. (2018, July 30). Retrieved from <https://www.azdot.gov/projects/southcentral-district-projects/i-10-safety-improvements-sunshine-boulevard-to-picacho-peak-road-dust-detection-and-warning-system>

⁹ Arizona Department of Transportation, Facebook. (2018, July 30). Retrieved from <https://www.facebook.com/AZDOT/app/208195102528120/>

¹⁰ Arizona DOT on Twitter. (2018, July 30). Retrieved from <https://twitter.com/ArizonaDOT>

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ADOT Blog Notifications

The ADOT posts News Releases to warn the public about current and expected high-wind events and blowing dust.¹¹

ADOT Alerts Application

The ADOT Alerts smartphone application provides real-time information to travelers about unplanned, major events that are impacting traffic including blowing dust events.¹²

AZ511 - Road Conditions & Traffic Advisories in Arizona

The AZ511 website and phone notification system provides road conditions traffic advisories including information on high-wind dust events.¹³

2.1.2 Education Programs

2.1.2.1 Phoenix

Arizona Department of Environmental Quality – Education Programs

Educational Outreach

All forecasts issued by ADEQ include a brief health statement identifying at risk individuals and provide recommendations for protecting personal health. More extensive information is provided on the ADEQ website in the *Air Quality Guide for Particle Pollution*. The guide identifies populations that could be affected depending on the AQI level (e.g., the very young or elderly and those with respiratory disease), and provides recommendations for reducing exposure (e.g., limit outdoor exertion). It also includes advice for identifying and limiting symptoms of exposure (e.g., watch for coughing or shortness of breath; follow asthma action plans and keep quick-relief medicine handy).

The mission of the ADEQ Office of Children’s Environmental Health (OCEH)¹⁴ is to protect children from environmental health risks. As part of its mission, OCEH works to develop and implement practical ways to reduce children’s exposure to environmental pollutants. They make an effort to identify and help remediate pollutants that put children most at risk and provide information on pollution-specific issues for families, teachers, day care providers and other concerned individuals. OCEH programs include the School Air Quality Flag Program, School Idle Reduction Program, and Green Schools.

¹¹ Arizona Department of Transportation, Media Center. (2018, July 30). Retrieved from <https://www.azdot.gov/media/News/news-release/2017/01/23/drivers-may-encounter-blowing-dust-along-i-10-southeast-of-phoenix>

¹² Arizona Department of Transportation, Transportation Safety, ADOT Alerts. (2018, July 30). Retrieved from <https://www.azdot.gov/adotalerts/>

¹³ AZ511, Arizona Traveler Information. (2018, July 30). Retrieved from <http://www.az511.gov/traffic/index.jsp>

¹⁴ Arizona Department of Environmental Quality, Children’s Environmental Health Program. (2018, July 30). Retrieved from <http://www.azdeq.gov/OCEH>

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ADEQ Air Quality Flag Program

ADEQ's Air Quality Flag Program is a mechanism to notify the public of air quality conditions. The Program uses nautical-style flags to match the levels of the EPA's AQI that represents the daily air quality in a given area. The AQI is an informational tool to indicate how polluted (or clean) the air is and what associated health effects might be a concern for you. The AQI focuses on health effects that a person may experience within a few hours or days after breathing polluted air. ADEQ and other agencies calculate the AQI for four major air pollutants: ground-level ozone, PM₁₀, PM_{2.5} and carbon monoxide.

The AQI values range from 0 to 500 where the higher the value, the greater the level of air pollution and the greater the health concern. For example, when AQI values are above 100 the air quality is considered to be unhealthy at first for certain sensitive groups of people, then for everyone as AQI values get higher. Different colored flags are used to correspond with the level of the AQI to quickly and efficiently communicate that air quality is good (green), moderate (yellow), unhealthy for sensitive groups (orange), unhealthy (red), very unhealthy (purple), or hazardous (maroon).

The flags are posted at participating schools and/or community centers in an area visible to the public. The flags will commonly represent different pollutants during different times of the year. From April through October, the flags will typically pertain to ozone. From October to March, the flags will commonly be for particulate matter pollution. However, if a warning is issued for both ozone and particulates, participating organizations will fly the flag that protects the greater population at risk.

Participating schools and community centers provide information regarding the color of the flag, the corresponding AQI, and the actions individuals can take to minimize their exposure to pollution.

See Appendix E for examples of educational programs in the Phoenix area.

Maricopa County Air Quality Department – Education Programs

Educational Outreach

The MCAQD maintains an educational outreach initiative called *Clean Air Make More*.¹⁵ This outreach program provides information to Maricopa County residents about air pollution challenges occurring in the county as well as various ways they can take action. The primary focus of *Clean Air Make More* is to reduce the number of days the region exceeds the federal health standard for air pollution. The *Clean Air Make More* website provides pertinent information on the air quality forecast, current restrictions, no-burn day restrictions, air quality news, upcoming events and ways to reduce air pollution. A smartphone application is available through the website that provides a way for individuals to have immediate access to the current air quality status and information on actions to reduce exposure.

The initiative's educational programs include a radio advertisement campaign, educational kiosks used at school STEM events and within the classroom setting and other public outreach events. The school outreach program offers to all schools in Maricopa County: award winning air quality curriculum aligned to current Arizona academic standards; lesson plans and resource kits delivered right to the classroom; expert speakers that visit classrooms and school STEM events; and professional development workshops for educators.

¹⁵ Maricopa County, Clean Air Make More. (2018, July 30). Retrieved from <http://cleanairmakemore.com/>

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Flag Program

The MCAQD implements a flag program similar to ADEQ's Air Quality Flag Program. Targeted within Maricopa County the purpose of the program is to raise awareness of air quality issues, current air quality conditions, and ways that residents can modify behavior in order to reduce or lower air pollution. Increasing the awareness of the AQI will highlight the need to take responsible measures to control air pollution during periods when Metropolitan Phoenix air quality is degraded.

See Appendix E for examples of educational programs in the Phoenix area.

2.1.2.2 Rillito

Pima County Department of Environmental Quality – Education Programs

Educational Outreach

PDEQ maintains an *Information, Education, Public Outreach* program to increase public awareness and encouraging community action to reduce air pollution. This outreach program provides environmentally-related information to a variety of audiences (i.e., schools and youth groups, community groups, businesses, associations, agencies, and industries) and through a number of mediums (i.e., email subscription, sponsorship and participation in community events). PDEQ informs the public about health and wellness related to air quality including particulate matter pollution sources, at risk populations, possible health effects of pollution, and various ways residents can take action to mitigate pollution.

See Appendix F for examples of educational programs in the Rillito area.

2.1.2.3 West Pinal

Pinal County Air Quality Control District – Education Programs

Educational Outreach

All forecasts issued by PCAQCD include a discussion identifying at risk individuals and provide recommendations to the general public on what actions to take to minimize exposure to air quality concentrations that are expected to exceed or have exceeded a particular NAAQS. More extensive information is provided on the agency website in the *Air Quality Guide for Particle Pollution*. The guide identifies populations that could be affected depending on the AQI level (e.g., the very young or elderly and those with respiratory disease) and provides recommendations for reducing exposure (e.g., limit outdoor exertion). It also includes advice for populations at risk for identifying and limiting symptoms of exposure such as; advisement to watch for coughing or shortness of breath, follow asthma action plans, and keep quick-relief medicine handy. The County also provides educational materials to residents and stakeholders on actions to mitigate dust emissions.

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The *AirNow* webpage¹⁶ provides links to educational materials regarding air pollution and to the PCAQCD webpage.¹⁷ ADEQ's Webpage for the Children's Environmental Health Program¹⁸ and EPA's webpage for Environmental Education¹⁹ contain links to additional resources and information.

Air Quality Flag Program

The Air Quality Flag Program in Pinal County operates in a similar manner as ADEQ's and the one implemented in Maricopa County. The PCAQCD primarily engages with schools in the District's jurisdiction. The current air quality forecast is provided on the PCAQCD's webpage and schools are encouraged to sign up through *EnviroFlash* in order to receive a daily email regarding the forecasted air quality.

EnviroFlash is a web-based notification platform that is sponsored by the EPA with support from state and local air quality agencies. *EnviroFlash* provides air quality information such as forecasts and action day notifications sent through email for any area selected by subscribers.

EnviroFlash allows subscribers to customize notifications for their own needs. It provides instant information that can be customized to their needs in order to protect their own health and family. Air quality information allows you to adjust your lifestyle when necessary on unhealthy air quality days. Up-to-date air quality information is especially helpful for those with sensitivities, such as the young, people with asthma, and the elderly.

See Appendix G for examples of educational programs in the West Pinal area.

2.1.2.4 Yuma

Arizona Department of Environmental Quality – Education Programs

ADEQ Air Quality Flag Program

ADEQ's Air Quality Flag Program is a mechanism to notify the public of air quality conditions. The Program uses nautical-style flags to match the levels of the EPA's AQI that represents the daily air quality in an area. The AQI is an informational tool to indicate how polluted (or clean) the air is and what associated health effects might be a concern for you. The AQI focuses on health effects that a person may experience within a few hours or days after breathing polluted air. ADEQ and other agencies calculate the AQI for four major air pollutants: ground-level ozone, PM₁₀, PM_{2.5} and carbon monoxide.

The AQI values range from 0 to 500 where the higher the value, the greater the level of air pollution and the greater the health concern. For example, when AQI values are above 100 the air quality is considered to be unhealthy at first for certain sensitive groups of people, then for everyone as AQI values get higher.

¹⁶ AirNow. (2018, July 30). Retrieved from <https://www.airnow.gov/index.cfm?action=airnow.main>

¹⁷ Pinal County Air Quality. (2018, July 30). Retrieved from <http://www.pinalcountyaz.gov/AirQuality/Pages/home.aspx>

¹⁸ Arizona Department of Environmental Quality, Children's Environmental Health Program. (2018, July 30). Retrieved from <http://www.https://www.epa.gov/educationw.azdeq.gov/OCEH>

¹⁹ U.S. Environmental Protection Agency, Environmental Education. (2018, July 30) Retrieved from <https://www.epa.gov/education>

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Different colored flags are used to correspond with the level of the AQI to quickly and efficiently communicate that air quality is good (green), moderate (yellow), unhealthy for sensitive groups (orange), unhealthy (red), very unhealthy (purple), or hazardous (maroon).

The flags are posted at participating schools and/or community centers in an area visible to the public. The flags will commonly represent different pollutants during different times of the year. From April through October, the flags will typically pertain to ozone. From October to March, the flags will commonly be for particulate matter pollution. However if a warning is issued for both ozone and particulates, participating organizations will fly the flag that protects the greater population at risk.

Participating schools and community centers provide information regarding the color of the flag, the corresponding AQI, and the actions individuals can take to minimize their exposure to pollution.

See Appendix H for examples of educational programs in the Yuma area.

2.2 Identification and Implementation of Mitigation Measures – 40 CFR 51.930(b)(2)(ii)(A) through (D)

“At a minimum, each mitigation plan developed under this paragraph shall contain provisions for the following: ... (ii) Steps to identify, study and implement mitigating measures, including approaches to address each of the following: (A) Measures to abate or minimize contributing controllable sources of identified pollutants. (B) Methods to minimize public exposure to high concentrations of identified pollutants. (C) Processes to collect and maintain data pertinent to the event. (D) Mechanisms to consult with other air quality managers in the affected area regarding the appropriate responses to abate and minimize impacts.”

2.2.1 Measures to Abate or Minimize Emissions of PM₁₀ from Controllable Sources

2.2.1.1 Phoenix

Control Programs in Statute and Rule

In the Maricopa County [Phoenix] PM₁₀ nonattainment area, PM₁₀ emissions from windblown dust sources have been recognized and addressed for many years.²⁰ In general, the emission rate of PM₁₀ from windblown dust increases with higher wind speeds and greater levels of disturbance on natural surfaces. Since wind speed is not controllable, the best control measures for minimizing PM₁₀ emissions from windblown dust are measures that limit the amount of disturbance present on natural surfaces or measures that stabilize previously disturbed surfaces. Disturbed surfaces also create higher PM₁₀ emissions under normal or low wind conditions. As such, any measure designed to stabilize disturbed surfaces or minimize the disturbance of natural surfaces will be the most effective at controlling PM₁₀ emissions in both high wind and low wind conditions. These measures have been researched, studied, and implemented for decades within the nonattainment area and apply to all significant controllable sources of windblown dust within the Maricopa County PM₁₀ nonattainment area.

²⁰ The Phoenix PM₁₀ nonattainment area encompasses parts of Maricopa and Pinal Counties.

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The Maricopa Association of Governments (MAG) developed the *MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area*. This plan contains a wide variety of control measures and projects that have been implemented to reduce and control PM₁₀ emissions from disturbed surfaces, including PM₁₀ emissions generated under high wind conditions. These measures are required to be in place at all times, including during high wind dust events. Requirements to reduce and control PM₁₀ emissions from disturbed surfaces in the plan apply to a broad range of sources including: unpaved roads and shoulders, leaf blowers, unpaved parking lots, vacant lots, sweeping streets with certified sweepers, off-road vehicle use, covered vehicle loads, dust generating operations, nonmetallic mineral processing, and other unpermitted sources. Table 2-1 lists the control measures included in the *MAG 2012 Five Percent Plan*.

Table 2-1 Control Measures Included in the MAG 2012 Five Percent Plan for PM₁₀ for the Maricopa County Nonattainment Area

Statute/Rule/Ordinance	Description
Arizona Revised Statutes (A.R.S.)	
A.R.S. § 9-500.04. (Sections A.3., A.5., A.6., A.7., A.8., A.9. and H.)	Air quality control; definitions (City and town requirements in Area A targeting unpaved roads and shoulders; leaf blower restrictions; restrictions related to parking, maneuvering, ingress and egress areas and vacant lots; requirement for certified street sweepers. Area A is a control program implementation area that includes the Phoenix PM ₁₀ Serious Nonattainment Area.)
A.R.S. § 9-500.27.	Off-road vehicle ordinance; applicability; violation; classification (City and town requirements in Area A regarding operation of vehicles on unpaved surfaces.)
A.R.S. § 11-871. (Sections A., B. and D.4.)	Emissions control; no burn; exemptions; penalty (No burn restriction for any HPA day, increased civil penalty.)
A.R.S. § 11-877.	Air quality control measures (County leaf blower restrictions.)
A.R.S. § 28-1098. (Sections A. and C.1.)	Vehicle loads; restrictions; civil penalties (Restrictions for safety or air pollution prevention purposes.)
A.R.S. § 49-424. (Section 11.)	Duties of department (Provisions to develop and disseminate air quality dust forecasts for the Maricopa County PM ₁₀ nonattainment area.)
A.R.S. § 49-457.01.	Leaf blower use restrictions and training; leaf blower equipment sellers; informational material; outreach; applicability (Measures to reduce the generation of dust from the use of leaf blowers.)
A.R.S. § 49-457.03.	Off-road vehicles; pollution advisory days; applicability; penalties
A.R.S. § 49-457.04.	Off-highway vehicle and all-terrain vehicle dealers; informational material; outreach; applicability
A.R.S. § 49-457.05. (Sections A., B., C., D. and I.)	Dust action general permit; best management practices; applicability; definitions

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Statute/Rule/Ordinance	Description
A.R.S. § 49-474.01. (Sections A.4., A.5., A.6., A.7., A.8., A.11., B. and H.)	Additional board duties in vehicle emissions control areas; definitions (County requirements for stabilization of targeted unpaved roads, alleys and shoulders; restrictions related to parking, maneuvering, ingress and egress areas and vacant lots; requirement for certified street sweepers.)
A.R.S. § 49-474.05.	Dust control; training; site coordinators
A.R.S. § 49-474.06.	Dust control; subcontractor registration; fee
A.R.S. § 49-501. (Sections A.2., B.1., C., F. and G.)	Unlawful open burning; exceptions; civil penalty; definitions (Ban on outdoor fires from May 1 to September 30; deletion of recreational purpose exemption; no burn day restrictions; penalty provision.)
A.R.S. § 49-541. (Section 1.)	Definitions (Area A)
Maricopa County Air Quality Department Rules	
Rule 310	Fugitive Dust from Dust-Generating Operations (Adopted January 27, 2010 and submitted to EPA April 12, 2010. Notice of Final Rulemaking 75 FR 78167; December 15, 2010.)
Rule 310.01	Fugitive Dust From Non-Traditional Sources of Fugitive Dust (Adopted January 27, 2010 and submitted to EPA April 12, 2010. Notice of Final Rulemaking 75 FR 78167; December 15, 2010.)
Rule 314	Open Outdoor Fires and Indoor Fireplaces at Commercial and Institutional Establishments (Adopted March 12, 2008 and submitted to EPA July 10, 2008. Notice of Final Rulemaking 74 FR 57612; November 9, 2009.)
Rule 316	Nonmetallic Mineral Processing (Adopted March 12, 2008 and submitted to EPA July 10, 2008. Notice of Final Rulemaking 74 FR 58553; November 13, 2009.)
Appendix C	Fugitive Dust (Adopted March 26, 2008 and submitted to EPA July 10, 2008. Notice of Final Rulemaking 75 FR 78167; December 15, 2010.)
Maricopa County Ordinances	
P-26	Residential Wood Burning Restriction (Adopted March 26, 2008 and submitted to EPA July 10, 2008. Notice of Final Rulemaking 74 FR 57612; November 9, 2009.)
Appendices to the Plan	
Appendix C, Exhibit 1	Arizona Revised Statutes Listed in Table 4-1 [of the 2012 plan]
Appendix C, Exhibit 2	Maricopa County Resolution to Evaluate Measures in the MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area
Appendix C, Exhibit 3	Arizona Department of Environmental Quality Dust Action General Permit
Appendix C, Exhibit 4	Arizona Department of Environmental Quality Commitment to Revise the MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area if Necessary for the Emerging and Voluntary Measure

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In addition to the statutes, rules and regulations listed in Table 2-1, other PM₁₀ reducing control measures and policies (e.g., paving of unpaved roads, Agricultural Best Management Practices Program, Pinal County Fugitive Dust rules, etc.) have been committed to, and implemented by, local jurisdictions throughout the Maricopa County [Phoenix] PM₁₀ nonattainment area. Several of these mitigation programs are listed in Table 2-2. Other measures have also been incorporated into the Arizona State Implementation Plan (SIP) through prior PM₁₀ plans, such as the *Revised MAG 1999 Serious Area Particulate Plan for PM-10 for the Maricopa County Nonattainment Area*, and in separate EPA actions. The measures listed and discussed in this section provide significant minimization of PM₁₀ emissions from all significant controllable source categories during a high wind dust event in the Maricopa County [Phoenix] PM₁₀ nonattainment area.

Table 2-2 Additional Measures for the Phoenix PM₁₀ Nonattainment Area

Statute/Rule/ Ordinance/Policy	Description
Arizona Revised Statutes (A.R.S.)	
A.R.S. § 49-457.	Agricultural best management practices committee; members; powers; permits; enforcement; preemption; definitions
Pinal County Air Quality Control District Rules	
Chapter 4. Article 2.	Fugitive Dust (Emissions reduction requirements for fugitive dust for the entire Pinal County area (excluding Indian Reservations). SIP approved rules, 75 FR 17307; April 6, 2010 and 72 FR 41896; August 1, 2007.)
Chapter 4. Article 3. Sections 4-3-060 through 4-3-090.	Construction Sites – Fugitive Dust (Emissions reduction requirements for construction sites throughout Pinal County.)
Chapter 4. Article 4.	Nonattainment Area Rules; Dustproofing for Commercial Parking, Drives and Yards (Emissions reduction requirements for unpaved commercial parking lots located in the Pinal County portion of the Phoenix PM ₁₀ Serious Nonattainment Area (i.e. Township 1N, Range 8E). SIP approved rules, 75 FR 17307; April 6, 2010.)
Chapter 4. Article 5.	Nonattainment Area Rules; Stabilization for Residential Parking and Drives (Emissions reductions/stabilization requirements for residential parking and drives in the Pinal County portion of the Phoenix PM ₁₀ Serious Nonattainment Area (i.e. T1N, R8E). SIP approved rules, 75 FR 17307; April 6, 2010.)
Chapter 4. Article 6.	Restrictions on Vehicle Parking and Use on Vacant Lots (Emissions reductions/stabilization requirements for unpaved or unstabilized vacant lots in the Pinal County Portion of Area A. Area A is a control program implementation area that includes the Pinal County portion of the Phoenix PM ₁₀ Serious Nonattainment Area.)
Chapter 4. Article 7.	Construction Sites in Nonattainment Areas – Fugitive Dust (Emissions reduction requirements for construction sites in the Pinal County portion of the Phoenix PM ₁₀ Serious Nonattainment Area (i.e. Township 1N, Range 8E). SIP approved rules, 75 FR 17307; April 6, 2010.)

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Statute/Rule/ Ordinance/Policy	Description
Chapter 4. Article 8.	Nonattainment Area Rules, Requirement for Stabilization of Disturbed Areas at Vacant Lots (Emissions reductions/stabilization requirements for the Pinal County portion of the Phoenix PM ₁₀ Serious Nonattainment Area.)
Pinal County Ordinances	
No. 051408-AQ1	Leaf blower ordinance for Area A (Area A is a control program implementation area that includes the Pinal County portion of the Phoenix PM ₁₀ Serious Nonattainment Area.)
Maricopa County Ordinances	
P-25	Leaf Blower Restriction (Describes restrictions for leaf blowers in incorporated and unincorporated sections of Area A in Maricopa County. Area A is a control program implementation area that includes the Phoenix PM ₁₀ Serious Nonattainment Area. Adopted February 20, 2008.)
P-27	Vehicle Parking and Use on Unstabilized Vacant Lots (Describes restrictions for vehicle parking and use on unstabilized vacant lots in unincorporated sections of Area A in Maricopa County. Area A is a control program implementation area that includes the Phoenix PM ₁₀ Serious Nonattainment Area. Adopted January 12, 2011.)
P-28	Off-Road Vehicle Use in Unincorporated Areas of Maricopa County (Describes restrictions for operating vehicles on unpaved property in unincorporated areas of Maricopa County. Adopted January 12, 2011.)
Arizona Department of Environmental Quality Rules	
R18-2-610	Definitions for R18-2-610.01, R18-2-610.02, and R18-2-610.03
R18-2-610.01	Agricultural PM General Permit for Crop Operations; Maricopa County PM Nonattainment Area
R18-2-611	Definitions for R18-2-611.01, R18-2-611.02, and R18-2-611.03
R18-2-611.01	Agricultural PM General Permit for Animal Operations; Maricopa County Serious PM Nonattainment Areas
Arizona Department of Transportation	
Roadway Design Memorandum: Turnout Paving in PM10 Nonattainment Areas, November 3, 2017	<ul style="list-style-type: none"> • Construction projects on the State Highway System within the boundaries of PM₁₀ Nonattainment Areas will provide a surface treatment on permitted turnouts, when paving operations are an integral part of new construction, reconstruction, or pavement rehabilitation projects. • Any turnout or driveway entering the project area to connect to the highway must be permitted by ADOT, as it needs right-of-way. This policy requires that such a permitted connection will be paved.

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Rapid Response Notification System

In addition to serving as a notification system, Maricopa County’s *Rapid Response Notification System*²¹ is a mechanism to minimize emissions of PM₁₀ from activities that generate dust pollution. When PM₁₀ pollution begins to rise, MCAQD sends a message to notify the public where the pollution hot spot is and what steps can be taken to help prevent an exceedance of the health standard.

When a Rapid Response notification is broadcast, the department requests that air quality permit holders with dust generating activities inspect their site as soon as possible and employ Best Available Control Measures to stabilize all disturbed soils to reduce blowing dust. MCAQD inspectors also canvass the hotspot to ensure compliance with its dust control standards. As mentioned in a previous section, the rapid response notifications are tailored for individual monitors, the public may sign up to receive notifications for one, two or all of the monitors through GovDelivery.

2.2.1.2 Rillito

Control Programs in Statute and Rule

In an effort to help the Rillito PM₁₀ nonattainment area become eligible for redesignation to attainment, ADEQ is currently analyzing the adequacy of existing control strategies for the area. The focus of the analysis is to ensure that permanent and enforceable controls, sufficient to maintain the NAAQS and allow development of exceptional event demonstrations, are implemented in the area. Any needed changes to the control strategies for the area will be adopted by the state and submitted to EPA. More information on the control measure analysis and redesignation approach are contained in ADEQ’s *SIP Development Plan: Rillito PM₁₀ Nonattainment Area*, November 22, 2017, revised. Table 2-3 lists current regulations and policy applicable to the Rillito PM₁₀ planning area.

Table 2-3 Control Measures for the Rillito PM₁₀ Nonattainment Area

Statute/Rule/ Ordinance/Policy	Description
Pima County Department of Environmental Quality Rules	
17.14.040	Fugitive dust activity permits (Requires activity permit for land stripping, blasting, trenching or road construction activities.)
17.16.050	Visibility limiting standard (Limits visible emissions in the Rillito area to 20 percent and restricts visible emissions beyond property line.)
17.16.060	Fugitive dust producing activities (Emissions reduction requirements for permitted sources including windblown dust.)
17.16.070	Fugitive dust emissions standards for motor vehicle operation (Stabilization measures to reduce particulate emissions from operation of vehicles in areas other than roadways.)

²¹ Maricopa County – Rapid Response Notification Webpage [<https://www.maricopa.gov/1628/Rapid-Response-Notifications>]

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Statute/Rule/ Ordinance/Policy	Description
17.16.080	Vacant lots and open spaces (Stabilization measures to reduce activity and windblown particulate emissions from parking areas, livestock feedlots, vacant lots, and other open spaces.)
17.16.090	Roads and streets (Measures to reduce particulate emissions from use, repair, construction, or reconstruction of roadways and alleys and transport of materials.)
17.16.100	Particulate materials (Measures to reduce particulate emissions from crushing, screening, handling, transporting or conveying of materials and construction activity.)
17.16.110	Storage piles (Measures to reduce dust emissions from stacking, piling, and storing of materials.)
17.16.120	Mineral tailings (Measures to reduce particulate emissions from mineral tailings piles.)
Arizona Department of Transportation	
Roadway Design Memorandum: Turnout Paving in PM ₁₀ Nonattainment Areas, November 3, 2017	<ul style="list-style-type: none"> • Construction projects on the State Highway System within the boundaries of PM₁₀ Nonattainment Areas will provide a surface treatment on permitted turnouts, when paving operations are an integral part of new construction, reconstruction, or pavement rehabilitation projects. • Any turnout or driveway entering the project area to connect to the highway must be permitted by ADOT, as it needs right-of-way. This policy requires that such a permitted connection will be paved.

Other Programs

ADEQ submitted to EPA a moderate area PM₁₀ plan for the Rillito area on November 14, 1991. A revised plan, including additional emissions information for point and area sources, was submitted on April 22, 1994. A redesignation request and maintenance plan were submitted to EPA on June 20, 2008. The area was not redesignated as a result of subsequent exceedances of the PM₁₀ NAAQS.

The 1994 submission documented a series of control measures designed to reduce PM₁₀ emissions. Since then the area has become more urbanized and less agricultural. Some of the measures included in the 1994 SIP have been discontinued or were one-time only actions. The following table provides the status of those measures.

Table 2-4 Additional Measures for the Rillito PM₁₀ Nonattainment Area

Control Measure	Description	Status
Road Stabilization at Cement plant and quarry operations	Comprehensive road stabilization plan to mitigate emissions.	In effect. Included in the facility operating permit issued on October 7, 2003.

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Control Measure	Description	Status
Pima County grading ordinance, Chapter 18.81 of the Pima County Zoning Code (January 2001)	Permits for earthmoving require stabilization to mitigate fugitive emissions.	In effect.
Bank stabilization of Santa Cruz River	Implemented in 1988 during development of nearby residential neighborhoods.	Complete.
Reduced tillage program	U.S. Department of Agriculture pilot program.	Discontinued.
Dust Stabilization – Rillito Community	Approximately one mile of dirt roads within the community are now paved.	Complete.
Avra Valley Road shoulder dust stabilization	2.5 miles to undergo blading and rolling followed by application of magnesium chloride once per year.	Implemented on an as needed basis.

2.2.1.3 West Pinal

Control Programs in Statute and Rule

On December 21, 2015 ADEQ submitted the 2015 *West Pinal Moderate PM₁₀ Nonattainment Area SIP* to EPA. The purpose of the SIP revision was to demonstrate how the West Pinal County nonattainment area will attain the 1987 24-hour PM₁₀ NAAQS by the end of 2018. The plan included analyses of activity-based and windblown emissions sources. Control strategies developed for minimizing PM₁₀ emissions from windblown dust included measures to limit the amount of disturbance present on natural surfaces and measures that stabilize previously disturbed surfaces. The state and local agencies will track the progress of the SIP and continue to work with EPA to evaluate the effectiveness of implemented control strategies.

The 2015 SIP revision included a number of rules to minimize emissions from significant controllable sources including: fugitive dust sources (i.e., open areas/vacant lots, unpaved roads, unpaved parking lots and paved public roadways), construction activity, and agricultural sources (i.e., crop operations, commercial animal operations, and irrigation districts). In addition to those area specific measures, a number of regulations applicable countywide and an ADOT policy provide further emissions reductions during high wind dust events. These measures are summarized in Table 2-5.

Table 2-5 Control Measures for the West Pinal PM₁₀ Nonattainment Area

Statute/Rule/ Ordinance/Policy	Description
Arizona Revised Statutes (A.R.S.)	
A.R.S. § 49-457	Agricultural best management practices committee; members; powers; permits; enforcement; preemption; definitions
Pinal County Air Quality Control District Rules	

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Statute/Rule/ Ordinance/Policy	Description
Chapter 4. Article 1.	West Pinal PM ₁₀ Moderate Nonattainment Area Fugitive Dust (Emissions reduction requirements in the West Pinal PM ₁₀ moderate nonattainment area for open areas/vacant lots, unpaved roads, unpaved lots and paved public roadways. Approved by EPA into the Arizona SIP, 82 FR 20267, May 1, 2017.)
Chapter 4. Article 2.	Fugitive Dust (Emissions reduction requirements for fugitive dust for the entire Pinal County area (excluding Indian Reservations). SIP approved rules, 75 FR 17307; April 6, 2010 and 72 FR 41896; August 1, 2007.)
Chapter 4. Article 3. Sections 160 through 190	Construction Sites – Fugitive Dust (Emissions reduction requirements for construction sites located within the West Pinal PM ₁₀ nonattainment area. Emission reduction requirements include dust generated during construction activity and also surface stabilization requirements in order to limit blowing dust.)
Arizona Department of Environmental Quality Rules	
R18-2-610	Definitions for R18-2-610.01, R18-2-610.02, and R18-2-610.03
R18-2-610.02	Agricultural PM General Permit for Crop Operations; Moderate PM Nonattainment Areas, Designated After June 1, 2009 (Commercial farmers required to implement at least one best management practice for various crop activities (i.e. harvest, tillage, ground operations, etc.), noncropland, commercial farm roads and significant agricultural earth moving activities.)
R18-2-610.03	Agricultural PM General Permit for Crop Operations; Pinal County PM Nonattainment Area (Measures to reduce particulate matter emissions from crop operations, noncropland operations, farm roads and significant agricultural earth moving activities. Approved by EPA in 82 FR 20267; May 1, 2017.)
R18-2-611	Definitions for R18-2-611.01, R18-2-611.02, and R18-2-611.03
R18-2-611.03	Agricultural PM General Permit for Animal Operations; Pinal County PM Nonattainment Area (Measures to reduce particulate matter emissions from commercial animal operations (feedlots, dairies, poultry and swine).)
R18-2-612	Definitions for R18-2-612.01
R18-2-612.01	Agricultural PM General Permit for Irrigation Districts; PM Nonattainment Areas Designated After June 1, 2009 [Measures to reduce PM emissions from sources associated with irrigation districts (unpaved operation/ maintenance roads, canals, unpaved utility access roads, etc.). Approved by EPA in 82 FR 20267; May 1, 2017.]
Arizona Department of Transportation	

**Exceptional Event Mitigation Plan:
Phoenix, Rillito, West Pinal, and Yuma PM10 Nonattainment Areas**

Statute/Rule/ Ordinance/Policy	Description
Roadway Design Memorandum: Turnout Paving in PM10 Nonattainment Areas, November 3, 2017	<ul style="list-style-type: none"> • Construction projects on the State Highway System within the boundaries of PM₁₀ Nonattainment Areas will provide a surface treatment on permitted turnouts, when paving operations are an integral part of new construction, reconstruction, or pavement rehabilitation projects. • Any turnout or driveway entering a project area to connect to the highway must be permitted by ADOT, as it needs right-of-way; such a permitted connection will be paved.

Short-Term Notifications

In addition to serving as a public notification system, Pinal County’s *Short-Term Notification Program* is also a mechanism to minimize emissions of PM₁₀ from activities that generate dust pollution. When PM₁₀ pollution begin to rise, PCAQCD sends an email message to notify subscribers when hourly and/or short-term (i.e. 5 minute averages) PM₁₀ levels reach certain predetermined (for PM₁₀ exceedances) levels. Short-term notifications are a way to minimize emissions of PM₁₀ by providing the public advance notice that dust emissions are elevated. The notification allows people to modify their behavior in a manner that may lower emissions.

2.2.1.4 Yuma

In an effort to help the Yuma PM₁₀ nonattainment area become eligible for redesignation to attainment, ADEQ is currently analyzing the adequacy of existing control strategies for the area. The focus of the analysis is to ensure that permanent and enforceable controls, sufficient to maintain the NAAQS and allow development of exceptional event demonstrations, are implemented in the area. Table 2-6 provides a list of the current regulations and policies applicable to the Yuma PM₁₀ planning area and summaries of their effect on dust mitigation.

Table 2-6 Control Measures for the Yuma PM₁₀ Nonattainment Area

Statute/Rule/ Ordinance/Policy	Description	Effect on Dust Mitigation
Arizona Revised Statutes (A.R.S.)		
§28-1098	Vehicle loads; restrictions	<ul style="list-style-type: none"> • A person shall not drive a vehicle on a highway unless it is constructed/loaded in a manner to prevent it from dropping, sifting, leaking or escaping from the vehicle; the following are permitted: <ul style="list-style-type: none"> ○ Sand may be dropped to secure traction. ○ Water or other substance may be sprinkled on a roadway to clean or maintain the roadway. ○ Minor pieces of agricultural materials (i.e. leaves and stems) from agricultural loads. • A person shall not operate a vehicle on a highway with a load unless the load and covering are securely fastened to prevent the covering/load from becoming loose, detached or a hazard.

**Exceptional Event Mitigation Plan:
Phoenix, Rillito, West Pinal, and Yuma PM10 Nonattainment Areas**

Statute/Rule/ Ordinance/Policy	Description	Effect on Dust Mitigation
Arizona Administrative Code (A.A.C.)		
R18-2-604	Open Areas, Dry Washes, or Riverbeds	<ul style="list-style-type: none"> • Reasonable precautions shall be taken to minimize dust emissions when constructing, altering, repairing, demolishing, clearing, leveling, or other earth moving or excavation on any vacant or sales lot, urban or suburban open area. Reasonable precautions include using a dust suppressant, soil stabilizer, paving, covering, landscaping, continuous wetting, barring access, or other acceptable means. • Reasonable precautions shall be taken to limit excessive amounts of dust emissions from the use of motor vehicles, trucks, cars, cycles, bikes, buggies; or by animals such as horses on vacant lots and urban or suburban open areas. Reasonable precautions include a dust suppressant, adhesive soil stabilizer, paving, barring access to the property, or other acceptable means • No person shall operate a motor vehicle for recreational purposes in a dry wash, riverbed or open area that will cause/contribute to dust emissions that cross property lines into a residential, recreational, institutional, educational, retail sales, hotel, or business premises.
R18-2-605	Roadways and Streets	No person shall cause, suffer, allow or permit the use, repair, construction or reconstruction of a roadway or alley without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Dust shall be kept to a minimum by employing temporary paving, dust suppressants, wetting down, detouring or by other reasonable means.
R18-2-606	Material Handling	No person shall cause, suffer, allow or permit crushing, screening, handling, transporting or conveying of materials likely to result in significant amounts of airborne dust without taking reasonable precautions, such as using spray bars, wetting agents, dust suppressants, covering the load, and hoods to prevent excessive amounts of particulates from becoming airborne.
R18-2-607	Storage Piles	<ul style="list-style-type: none"> • No person shall cause, suffer, allow, or permit organic or inorganic dust producing material to be stacked, piled, or otherwise stored without taking reasonable precautions such as chemical stabilization, wetting, or covering to prevent excessive amounts of particulate matter from becoming airborne. • Stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents, as to prevent excessive amounts of particulate matter from becoming airborne.

**Exceptional Event Mitigation Plan:
Phoenix, Rillito, West Pinal, and Yuma PM10 Nonattainment Areas**

Statute/Rule/ Ordinance/Policy	Description	Effect on Dust Mitigation
R18-2-608	Mineral Tailings	No person shall cause, suffer, allow, permit construction of, or otherwise own or operate, mineral tailing piles without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne; precautions shall mean wetting, chemical stabilization, revegetation or such other measures as are approved by the Director.
R18-2-613 & 613.01	Yuma PM ₁₀ Nonattainment Area; Agricultural Best Management Practices	<ul style="list-style-type: none"> • Applies to commercial farms with 10 or more contiguous acres of land used for agricultural purposes. • Farmers shall implement 1 BMP per category (tillage & harvest, noncropland, and cropland) to reduce dust emissions from agricultural operations. • Farmers shall maintain records demonstrating compliance. Commercial farmers shall provide the records to the Director within two business days of written notice. • Records shall contain the name of commercial farmer, mailing address/ physical location of farm, and BMPs selected for each category and the date each BMP was implemented.
Arizona Department of Transportation Policy	Roadway Design Memorandum; November 3, 2017	<ul style="list-style-type: none"> • Construction projects on the State Highway System within the boundaries of PM₁₀ Non-Attainment Areas will provide a surface treatment on permitted turnouts, when paving operations are an integral part of new construction, reconstruction, or pavement rehabilitation projects. • Any turnout or driveway entering the project area to connect to the highway must be permitted by ADOT, as it needs right-of-way; these permitted connections will be paved.
Yuma County		
Zoning Ordinances, Article VI, §608.09 and §610.09	Minimum Development Standards	All roadways within manufactured home parks or recreational vehicle parks shall be a minimum of 32 feet wide, they shall be built and continuously maintained in a dust free condition by application of an aggregate base course covered by a penetration and chip seal coat.
Zoning Ordinance, Article VIII, §810.04	Project Information Signs	<ul style="list-style-type: none"> • Requirement that any building or grading permit of 1 acre or greater shall install and maintain a project information sign in accordance with the requirements below. • Ordinance prescribe implementation details for posting a sign that provides the public information about the project and instructions for contacting the Yuma County Dust Control Hotline.

**Exceptional Event Mitigation Plan:
Phoenix, Rillito, West Pinal, and Yuma PM10 Nonattainment Areas**

Statute/Rule/ Ordinance/Policy	Description	Effect on Dust Mitigation
Zoning Ordinances, Article IX, §906.0	Parking Area Paving and Surfacing	<ul style="list-style-type: none"> • Parking areas with lanes for drive-thru windows or have more than 25 required parking spaces shall either: be graded and paved with asphaltic concrete over aggregate base course or have Portland cement concrete over consolidated subgrade. • Parking areas that are not covered with the type of paving specified above that require more than 6 spaces shall be graded and surfaced with a dust-inhibitor treated aggregate base course. The perimeter of such parking areas shall be defined by bricks, stones, railroad ties, or other similar devices. Driveways leading from the street or property line shall be surfaced as provided in Yuma County Public Works Construction Standards.
County Strategic Plan	Street Sweeping	<ul style="list-style-type: none"> • Sweep subdivision streets and designated main arteries 4 times a year. • Sweep collector streets and high volume main arteries on a monthly basis. • Sweep about 1,750 lane miles and collect between 850 - 1200 tons of debris annually. • Maintain sweeping operations to reduce pollution in stormwater runoff, strive to increase the amount of sand/debris removed by 50 tons annually.
City of Yuma Code of Ordinances		
Title 15, Chapter 150	Building Regulations	Requires that dust control plans be submitted prior to construction. This plan outlines the steps taken to minimize and control dust associated with project.
Title 15, Chapter 154, Article 20	Landscape Regulations	<ul style="list-style-type: none"> • Provides minimum standards for landscaping/planting of ground cover for the purposes of erosion control and protecting ambient air quality by reducing dust and loose soil. • Specifies the number and coverage of plant materials.
Title 15, Chapter 156	Erosion & Sediment Control	Control of soil during construction activities to prevent erosion by wind and water by guiding, regulating and controlling the design, construction and use of any development or other activity that disturbs 1 acre or more in public and private projects or one-half acre or more within the City's jurisdiction.
Title 21, Chapter 211, §211-07	Roadways & Street	Same language as Arizona rule R18-2-605
Title 21, Chapter 211, §211-08	Material Handling	Same language as Arizona rule R18-2-606

**Exceptional Event Mitigation Plan:
Phoenix, Rillito, West Pinal, and Yuma PM10 Nonattainment Areas**

Statute/Rule/Ordinance/Policy	Description	Effect on Dust Mitigation
City of Yuma Policy	Standard Procedures for Sweeping	<ul style="list-style-type: none"> • Main arterials and selected collectors are swept a minimum of once a week; 46-52 times per year. • Residential streets are swept a minimum of six times per year; approximately every 2 months. • Teams sweep streets surrounding schools, churches and city parks on a weekly basis.
City of Somerton Code of Ordinances		
Code of Ordinances, Article 9-7	Pollutant Discharge Elimination System, Storm Water Phase II Permit Program	No explicit air quality controls are listed, but soil stabilization is required. This could cause fringe benefits to air quality from the reduction of fugitive dust that result from soil stabilization.
City Policy - Street Sweeping	Sweeping of roads, alleys, and lots	<ul style="list-style-type: none"> • Estimated 46 tons of PM₁₀ removed annually, as of 2011 Conformity Analysis • Sweeper is not PM₁₀ certified, so total debris removed may be much greater than PM₁₀ estimate
Arizona Department of Transportation		
Roadway Design Memorandum; November 3, 2017	Turnout Paving in PM10 Nonattainment Areas	<ul style="list-style-type: none"> • Construction projects on the State Highway System within the boundaries of PM₁₀ Nonattainment Areas will provide a surface treatment on permitted turnouts, when paving operations are an integral part of new construction, reconstruction, or pavement rehabilitation projects. • Any turnout or driveway entering a project area to connect to the highway must be permitted by ADOT, as it needs right-of-way; such a permitted connection will be paved.

2.2.1.5 Statewide

The Arizona Department of Transportation’s dust control activities generally apply uniformly statewide and are tracked statewide. The Dust Mitigation items provided in Table 2-7 are the minimum standards applied everywhere (within attainment and nonattainment areas alike). There may also be circumstances (e.g., projects located in nonattainment areas) where certain active construction projects require additional dust control items (i.e., dust control permits, dust control training requirements, etc.). These conditions are included as special provisions for each individual project. Compliance with existing dust control rules is the responsibility of the county or state air agency. The following listed items are only those programs that ADOT has immediate control and authority for implementing.

Table 2-7 Control Measures Applicable Statewide

**Exceptional Event Mitigation Plan:
Phoenix, Rillito, West Pinal, and Yuma PM10 Nonattainment Areas**

Statute/Rule/ Ordinance/Policy	Description
Arizona Department of Transportation	
<i>Standard Specifications for Road and Bridge Construction, 2008; Sections 104.12, 203-2, and 209</i>	Includes provisions to minimize disturbance and dust emissions during construction.
<i>ADOT Construction Manual, August 2015; Sections 104.08, 206, and various forms.</i>	Manual of administration practices and inspection procedures includes requirements to mitigate disturbance and dust emissions including: 1) Job Site Dust Control Plan (e.g., earthmoving, disturbed surface areas, unpaved roads, trackout, material hauling and storage, etc.), 2) Dust Palliative Agreement, 3) Daily Dust Palliative Form (certification of treatment), and 4) Water Truck Certification.
<i>ADOT Maintenance and Facilities Best Management Practices Manual, 2010; Programs 2, 120, 130, and 140.</i>	Manual of Best Management Practices (BMPs) for district roadway maintenance activities and facilities to integrate a variety of temporary and permanent erosion, sediment, and pollutant control measures into the work methods used to complete these activities. Includes programs for 1) unpaved surfaces (soil stabilization unpaved roads, dust control), 2) shoulders (repair unpaved shoulders), 3) vegetation control (soil stabilization), and 4) sites, yards, and grounds (sediment control – track out).
<i>ADOT Erosion and Pollution Control Manual, for highway Design and Construction, December 2012</i>	The manual provides guidance for highway construction practices and monitoring of erosion and pollution controls to meet the water quality requirements of federal, state and local agencies. Provides secondary air quality benefit through inclusion of provisions related to erosion control (soil binders), sediment control (stabilized construction roadway), and good housekeeping (street sweeping and vacuuming).
ADOT In-House and Contract Sweeping	ADOT Sweeps urban areas statewide.

2.2.2 Methods to Minimize Public Exposure to High Concentrations of PM₁₀

State and local agencies will help minimize public exposure to high concentrations of particulate pollution through implementation of air quality forecasting and public notification programs (see Section 2.1.1), outreach and education programs for increasing public risk awareness (see Section 2.1.2), measures to reduce particulate matter emissions (see Section 2.2.1), and inspections and enforcement actions.

Efforts designed to reduce emissions and minimize public exposure include the following examples.

- *MCAQD’s Rapid Response Notification System.* Air quality permit holders are sent notification that pollution levels are rising at specified air quality monitors and what steps the permittee will need to take to help reduce dust generating activities and prevent an exceedance of the health standard. See Section 3.2.1 for further information on this program.

Exceptional Event Mitigation Plan: Phoenix, Rillito, West Pinal, and Yuma PM10 Nonattainment Areas

- PCAQCD's *Short-Term Notification Program*. Pinal County notifies stakeholders when PM₁₀ pollution begins to rise to allow modification of activities in order reduce dust emissions. See Section 3.2.1 for further information on this program.
- ADEQ's *Agricultural Dust Program*. Agricultural Dust Program compliance officers inspect agricultural operations for use of best management practices (Ag BMPs), respond to public agricultural dust complaints, and work to educate agricultural operations about dust impacts and measures to reduce dust. See ADEQ's webpage regarding the Agricultural Dust Program for more information.²²
- MCAQD's *Air Quality Compliance and Enforcement Program*. Provides compliance assistance and enforcement of fugitive dust reduction programs including earthmoving/dust control, vacant lot stabilization, vehicle parking on unstable lots, and off-road vehicle use. See MCAQD's Webpage on Compliance and Enforcement for more information.²³
- PDEQ's *Fugitive Dust Activity Permit Program*. The program requires a permit for earthmoving, trenching, blasting, and road construction activities to ensure compliance with fugitive dust regulations. The County also provides investigation and enforcement for complaints of excessive dust without controls and dust crossing property boundaries. See PDEQ's website for more information.²⁴
- PCAQCD's *Construction Permitting Program*. The program requires a permit for earthmoving, grading, construction, and other activities associated with land development within the county and West Pinal nonattainment area to ensure ground conditions/disturbance caused by construction activities and windy conditions do not result in elevated particulate matter emissions. The County also provides investigation and enforcement for excessive dust complaints. See Pinal County's Website regarding construction sites and obtaining a permit²⁵ and general information on fugitive dust²⁶ for more information.

2.2.3 Collection and Maintenance of Pertinent Event Data

2.2.3.1 Phoenix/Rillito/Yuma

After an air quality event has been identified in the Phoenix, Rillito, or Yuma area by the ADEQ, the following data are archived to screen whether the event was exceptional in nature:

²² Arizona Department of Environmental Quality, Agricultural Dust Program, <http://www.azdeq.gov/AgriculturalDust>

²³ Maricopa County Air Quality Department, Compliance and Enforcement, <https://www.maricopa.gov/4059/Compliance-and-Enforcement-Information>

²⁴ <http://webcms.pima.gov/cms/one.aspx?portalId=169&pageId=54373>

²⁵ <http://www.pinalcountyz.gov/AirQuality/Dust/Pages/ConstructionSites.aspx>

²⁶ <http://www.pinalcountyz.gov/AirQuality/Dust/Pages/WestPinalNon-AttainmentArea.aspx>

Exceptional Event Mitigation Plan: Phoenix, Rillito, West Pinal, and Yuma PM10 Nonattainment Areas

- hourly pollutant concentration data for exceeding and neighboring monitors,
- surface and upper air weather maps,
- relevant satellite and Doppler radar data,
- hourly weather observations (wind speed, wind gust, and rainfall) at First-order (airports) and Remote Automated Weather Stations (RAWS) near exceeding monitors,
- pertinent NWS statements, watches, advisories, and warnings highlighting event,
- ADEQ Phoenix Air Quality and Maricopa County Dust Risk forecasts, or Tucson area (Rillito) or Yuma Air Quality forecasts,
- agricultural compliance data,
- county compliance and enforcement data,
- available webcam imagery, and
- any relevant social media coverage.

It is preferred that all collected data sources represent the period during and immediately before and after the event in question to capture preexisting, onset, and demise of weather and air quality conditions related to the event being investigated. Data collection efforts may be done by ADEQ or collaboratively with the Maricopa Association of Governments (MAG), Maricopa County Air Quality Department (MCAQD), Pinal County Air Quality Control District (PCAQCD), Pima Association of Governments (PAG), Pima County Department of Environmental Quality (PDEQ), and local tribal nations. A draft “conceptual model” summary narrative may be created if event is reasoned to be exceptional after initial screening. Data collection and any draft narratives are filed electronically with a unique event identifier for future reference.

2.2.3.2 West Pinal

The PCAQCD employs standard processes to collect and maintain data pertinent to events. The forecaster enters the previous day’s air quality and meteorological data into a spreadsheet as part of the morning forecasting process. Additionally, days that are forecasted to be exceedance days and their associated forecast products (discussions, model output statistics, etc.) are saved on a network drive by the forecaster of the day. The day of the forecasted exceedance additional products are compiled such as weather maps, discussions, news stories, social media, etc. in addition to the air quality data which is collected at the PCAQCD monitors. The day(s) following an exceedance, a narrative of the exceedance day is produced and all supporting products/documentation are gathered, filed and organized by the date of the exceedance in preparation for use in exceptional events demonstrations.

2.2.4 Consultation with Air Quality Managers

Arizona Revised Statutes Title 49 – “The Environment,” divides responsibility and encourages cooperation for meeting the requirements of the Clean Air Act among the state, county agencies, and regional planning organizations.²⁷ Currently the State and three county agencies operate air quality control programs under direct or delegated authority. The air pollution control agencies are ADEQ, MCAQD, PDEQ, and PCAQCD. See the map in Figure 1-1 for the locations of the Phoenix, Rillito, West Pinal, and Yuma PM₁₀ nonattainment areas relative to the local jurisdictions.

²⁷ See the ADEQ 1987 PM₁₀ Infrastructure State Implementation Plan, June 30, 2017, for more information on state and local agency’s authority and roles for air pollution control and mitigation.

**Exceptional Event Mitigation Plan:
Phoenix, Rillito, West Pinal, and Yuma PM10 Nonattainment Areas**

Two metropolitan planning organizations, MAG and the Pima Association of Governments (PAG), are certified for the development of certain nonattainment and maintenance area plans and transportation planning within their respective jurisdictions.

ADEQ and local agencies work with their partners and the regulated community to analyze emissions and develop control strategies in order to minimize PM₁₀ emissions and protect public health. Participation is encouraged and technical advice sought through meetings and discussion with governmental departments and agencies, municipalities, members of the regulated community, and other interested parties; and through the public comment process for state implementation plan revisions, rulemakings, and mitigation plans.

Table 3-8 lists the names and roles of governmental entities that participated in the development of this plan. Under the authority noted above, the state and local agencies will continue to consult with other air quality managers in the affected areas regarding appropriate responses to abate and minimize the impacts of exceptional events. Consultation will be initiated by the lead agency upon the occurrence of significant changes in the frequency or magnitude of high wind/PM₁₀ events or activities impacting successful implementation of the mitigation plan. Consultation topics may include but are not limited to identification and evaluation of appropriate mitigation measures, improving notification procedures and education programs, and sharing of exceptional event data and coordination of demonstrations for events that may affect the region.

Additionally, regional air quality events necessitated the development of the Southwest Exceptional Events Working Group. The group consists of air quality agencies in EPA Region 9. The working group conducts quarterly teleconference calls (or more frequently if needed) to discuss air quality events and the various agency’s efforts in exceptional events documentation and planning including coordination of exceptional event demonstrations.

Table 2-8 Participating Governmental Entities

NAME	ROLE
Arizona Department of Environmental Quality (ADEQ)	<p>Coordinate mitigation plan development and public comment process. Provide information and analysis of plan components including public notification and education, identification and implementation of mitigation measures, and periodic review and evaluation of the mitigation plan.</p> <p>Participate in a cooperative ongoing effort with other agencies to notify the public of the risks of elevated pollution levels and to implement programs to help reduce exposure and protect public health.</p>
Arizona Department of Transportation (ADOT)	Consultation/participation in mitigation plan development. Provide information and analysis of plan components including public notification and education and identification and implementation of mitigation measures.
Gila River Indian Community (GRIC)	Consultation/notification regarding mitigation plan development.

**Exceptional Event Mitigation Plan:
Phoenix, Rillito, West Pinal, and Yuma PM10 Nonattainment Areas**

NAME	ROLE
Maricopa Association of Governments (MAG)	<p>Consultation/participation in mitigation plan development. Provide information and analysis of plan components including public notification and education, identification and implementation of mitigation measures, and periodic review and evaluation of the mitigation plan.</p>
Maricopa County Air Quality Department (MCAQD)	<p>Consultation/participation in mitigation plan development. Provide information and analysis of plan components including public notification and education, identification and implementation of mitigation measures, and periodic review and evaluation of the mitigation plan.</p> <p>Participate in a cooperative ongoing effort with other agencies to notify the public of the risks of elevated pollution levels and to implement programs to help reduce exposure and protect public health.</p>
Pima Association of Governments (PAG)	<p>Consultation/participation in mitigation plan development. Provide information and analysis of plan components including public notification and education, identification and implementation of mitigation measures, and periodic review and evaluation of the mitigation plan.</p>
Pima County Department of Environmental Quality (PDEQ)	<p>Consultation/participation in mitigation plan development. Provide information and analysis of plan components including public notification and education, identification and implementation of mitigation measures, and periodic review and evaluation of the mitigation plan.</p> <p>Participate in a cooperative ongoing effort with other agencies to notify the public of the risks of elevated pollution levels and to implement programs to help reduce exposure and protect public health.</p>
Pinal County Air Quality Control District (PCAQCD)	<p>Consultation/participation in mitigation plan development. Provide information and analysis of plan components including public notification and education, identification and implementation of mitigation measures, and periodic review and evaluation of the mitigation plan.</p> <p>Participate in a cooperative ongoing effort with other agencies to notify the public of the risks of elevated pollution levels and to implement programs to help reduce exposure and protect public health.</p>
Salt River Pima-Maricopa Indian Community (SRP-MIC)	<p>Consultation/notification regarding mitigation plan development.</p>

2.3 Periodic Review and Evaluation of Mitigation Plan – 40 CFR 51.930(b)(2)(iii)

“At a minimum, each mitigation plan developed under this paragraph shall contain provisions for the following: ... (iii) Provisions for periodic review and evaluation of the mitigation plan and its implementation and effectiveness by the State and all interested stakeholders.”

The mitigation rules require the state to specify in its plan the periodic review and evaluation process that it intends to follow for reviews following the initial plan development. The Arizona Department of Environmental Quality and local air quality agencies will review and evaluate this dust mitigation plan, including its implementation and effectiveness, every three years. The review will include opportunity for consultation and participation with local governments, municipalities, members of the regulated community, and all interested parties. The dust mitigation plan will be updated accordingly and submitted to EPA Region 9 after consideration of public comment.

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Appendix A – Air Quality Forecasts/Notifications – Phoenix



High Pollution Advisory has been issued for Wednesday, August 8 in Maricopa County for PM-10

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| <p>08/05/18 - COMMENT PERIOD BEGINS Request for No Further Action Determination for Layton Lakes Underground Fuel Tank Remediation VRP Site in Gilbert, Ariz. On Sunday, Aug. 5, 2018, the... See Notice ></p> <p>09/03/18 - COMMENT PERIOD ENDS Proposed Renewal of AZPDES Permit (AZ0025747) Coverage for the Flite Goodyear Facility On Sept. 3, 2018, the public... See Notice ></p> <p>08/06/18 - COMMENT PERIOD BEGINS Proposed Arizona Ozone Infrastructure State Implementation Plan Revision On Aug. 6, 2018, the comment... See Notice ></p> | <p>09/04/18 - COMMENT PERIOD ENDS Request for No Further Action Determination for Layton Lakes Underground Fuel Tank Remediation VRP Site in Gilbert, Ariz. On Tuesday, Sept. 4, 2018,... See Notice ></p> <p>08/02/18 - COMMENT PERIOD BEGINS Proposed Renewal of AZPDES Permit (AZ0025747) Coverage for the Flite Goodyear Facility On Thursday, Aug. 2, 2018,... See Notice ></p> <p>09/06/18 - COMMENT PERIOD ENDS Proposed Arizona Ozone Infrastructure State Implementation Plan Revision On Sept. 6, 2018, the public... See Notice ></p> |
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| <p>08/03/18 - STAKEHOLDER MEETING State Assumption of Underground Injection Controls (UIC) : The purpose of... See Event Details ></p> | <p>08/08/18 - PUBLIC MEETING Preliminary Decision to Issue a Significant Amendment to an APP for Johnson Utilities Section 11 Wastewater Treatment Plant :</p> |
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08/08/18 - PUBLIC HEARING | Preliminary Decision to Issue a Significant Amendment to an APP for Johnson Utilities Section 11 Wastewater Treatment Plant :
ADEQ is holding... [See Event Details >](#)

08/09/18 - PUBLIC MEETING | Preliminary Decision to Issue a Significant Amendment to an APP for Johnson Utilities Section 11 Wastewater Treatment Plant :
ADEQ is holding... [See Event Details >](#)

08/09/18 - PUBLIC MEETING | Preliminary Decision to Issue a Significant Amendment to an APP for Johnson Utilities Section 11 Wastewater Treatment Plant :
ADEQ is holding... [See Event Details >](#)

08/16/18 - PUBLIC MEETING | East Central Phoenix CAB Meeting :
... [See Event Details >](#)

08/20/18 - PUBLIC MEETING | 56th Street and Earll Drive WQARF Site CAB Meeting :
... [See Event Details >](#)

08/22/18 - PUBLIC EVENT | Solid and Hazardous Waste Programs Workshop :
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PRESS RELEASE | ADEQ Issues PM-10 High Pollution Advisory for Maricopa County Effective June 14, 2018

ADEQ has issued a dust High Pollution Advisory (HPA) for June 14, 2018, for coarse particulate matter (PM₁₀) in Maricopa County. This HPA is due to particle pollutant levels expected to accumulate enough to exceed the federal health standard for PM₁₀.

People with heart or lung diseases, older adults and children are most likely to be affected by particle pollution. PM₁₀ particles are so small they are able to travel into the respiratory tract where they can cause short-term health effects such as eye, nose, throat and lung irritation, coughing, sneezing, runny nose and shortness of breath. Exposure to these particles can also affect lung function and worsen medical conditions such as asthma and heart disease.

ADEQ recommends that the general public limit outdoor activity while the HPA is in effect, especially children and adults with respiratory problems.

During this HPA, ADEQ encourages residents and businesses to use these tips and resources to help make the air healthier to breathe:

- Avoid or limit wood burning in residential fireplaces, chimineas, outdoor fire pits and similar outdoor fires (including at hotels and restaurants and individuals/businesses that have permits for open burning)
- Avoid using leaf blowers
- Avoid activities that generate dust, such as driving on dirt roads and using off-road vehicles
- Drive as little as possible, carpool, use public transit or telecommute

ADEQ also urges businesses conducting dust-generating operations to be vigilant in their dust control measures.

Background

High Pollution Advisory (HPA): Notifies the public that the level of an air pollutant is expected to exceed the federal health standard.

Health Watch: Notifies the public that the level of an air pollutant is expected to approach the federal health standard.

Particulate Matter: State and county agencies measure levels of particulate matter (PM) in the air. PM is extremely small solid particles and liquid droplets that circulate in air. PM comes from combustion (cars, industry, wood burning) or dust stirred up into the air. High levels of PM occur when air is especially stagnant or windy. Two types of PM are measured: PM₁₀, commonly called dust, and PM_{2.5}, commonly called soot. PM₁₀ refers to dust particles 10 microns or less and PM_{2.5} to soot particles 2.5 microns or less. For perspective, one strand of human hair is 70 – 100 microns in size.

Resources

The **Arizona Department of Environmental Quality (ADEQ)** provides a daily forecast for air quality and issues HPAs or Health Watches when these conditions exist.

ADEQ daily air quality forecast | [View >](#)

Subscribe to receive air quality forecasts via email and/or text message | [Subscribe >](#)

ADEQ Public Information Officer Erin Jordan | [E-mail >](#) | 602-771-4192 desk | 602-377-0631 cell

The **Maricopa County Air Quality Department (MCAQD)** is a regulatory agency whose goal is to ensure federal clean air standards are achieved and maintained for the residents and visitors of Maricopa County. The department is governed by the Maricopa County Board of Supervisors and follows air quality standards set forth by the federal Clean Air Act. The department offers air quality information and resources on its Clean Air Make More website.

Clean Air Make More | [View >](#)

Bob Huhn | [E-mail >](#) | 602-506-6713 desk/602-526-7307 cell

Valley Metro provides eco-friendly public transit options to residents of greater Phoenix and Maricopa County, including a clean-fuel bus fleet, low-emissions light rail, online carpool matching and bus trip mapping, and bicycle and telework assistance. Funding is provided by local, state and federal revenues; and administered by a board of 16 governments working to improve and regionalize the public transit system.

Valley Metro | [View >](#)

Corinne Holliday | [E-mail >](#) | 602-322-4492 desk | 623-293-0335 cell

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Air Forecasting

Revised on: August 8, 2018 - 6:06am

ADEQ meteorologists provide Air Quality Index (AQI) and Air Quality Risk-Based (AQR) forecasts to serve and assist the public, industry and agricultural operations in Arizona.

Air Quality Index (AQI) Forecast

These forecasts are based on the Environmental Protection Agency (EPA)'s AQI federal health standards and are issued for the following areas:

- Nogales | [View Forecast >](#) or [Download Smartphone Mobile App >](#)
- Phoenix | [View Forecast >](#)
- Tucson | [View Forecast >](#)
- Yuma | [View Forecast >](#) or [Download Smartphone Mobile App >](#)

The AQI Forecast lets the public know expected air quality conditions and provides advice about what they can do to protect their health, especially that of children, seniors and people with respiratory problems.

ADEQ also issues a:

- **Health Watch (HW)** when air pollution levels are expected to approach the federal health standard.
- **High Pollution Advisory (HPA)** when air pollution levels are expected to exceed the federal health standard.

Learn more about EPA's AQI | [View AQI Guide >](#)

Air Quality Risk-Based (AQR) Dust Forecasts for PM-10

ADEQ forecasts for PM₁₀ in the following areas:

- Maricopa County | [View Forecast >](#)
- Pinal County | [View Forecast >](#)

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We All Share the Air



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Dust Risk:
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[Pinal County >](#)

Lead Risk:
[Hayden >](#)

[+ SEE MORE](#)

ADEQ issues these forecasts to assist industrial and agricultural operations with reducing dust pollution through planning work activities.
 Learn more about Particulate Pollution | [View Fact Sheet >](#) | [En español >](#)

Air Quality Risk-Based (AQR) Lead Forecast

ADEQ Lead (PB) forecast for:

- Hayden Area | [View Forecast >](#)

ADEQ studied historical weather patterns as they relate to lead air pollution to develop three lead risk categories – low, moderate and high. The risk-based lead forecast for Hayden predicts the possibility of reduced air quality due to lead. ADEQ monitors for air lead levels in Hayden according to EPA’s requirements (one sample every six days). These samples are analyzed by a certified laboratory and take one month to process. These results are used to refine future lead forecasts.

Air Quality Monitoring Locations & Cameras

- ADEQ Statewide Monitors | [View >](#)
- Maricopa County Monitors | [View >](#)
- Current Visibility in Phoenix Metro via ADEQ Webcams | [View >](#)

Sign Up to Receive Air Quality Forecasts

Receive ADEQ air quality forecast notifications by email or text | [Subscribe >](#)

Unfamiliar with some of the acronyms or technical terms used on this page?

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- [Air Pollutants Defined >](#)
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- [What is Area A? >](#)
- [Contrails Vs. Chemtrails >](#)
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- [Air Quality Monitoring >](#)
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- [ADEQ AQ Monitoring Data >](#)
- [PM Fact Sheet > | En español >](#)
- [Ozone Fact Sheet > | En español >](#)
- [Air Nogales Mobile App >](#)
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< RETURN TO AIR FORECASTING

Air Quality Hourly Forecast | Phoenix

Updated On: 8/8/2018 - 9:13 AM

Click on each day to view forecast.

- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

Wednesday Forecast:



Alert: Ozone and PM₁₀ High Pollution Advisories in effect for Wednesday

Notice: Haze likely early morning and blowing dust during the late afternoon and evening



PM₂₅



AQI FORECAST

- Phoenix >
- Yuma >
- Nogales >
- Tucson >

[Understanding the Hourly Forecast >](#)

AQ RISK-BASED FORECAST

Dust Risk:
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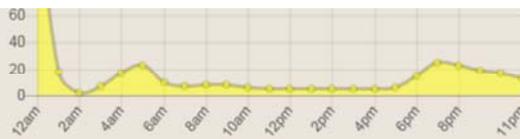
Lead Risk:
[Hayden >](#)

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Concentration: 17.2 µg/m³



Air Quality By Pollutant:

Pollutant	Wednesday 8/8/2018	Thursday 8/9/2018	Friday 8/10/2018	Saturday 8/11/2018	Sunday 8/12/2018
O ₃	133	126	108	105	112
CO	7	8	7	7	8
PM ₁₀	122	91	53	47	35
PM _{2.5}	62	35	31	32	28

O₃ = Ozone, CO = Carbon Monoxide, PM₁₀ = Particles ≤ 10 microns, PM_{2.5} = Particles ≤ 2.5 microns

Forecast Discussion:

Another hazy, muggy morning here in Phoenix! Last night was indeed active in the open deserts between us and Tucson. A dust storm rolled up from the south under high winds to spread excessive amounts of particulates back into the Valley. A few lucky spots in the Phoenix area did receive locally heavy rain with isolated storms that tried to fire along the outflow boundary that brought in the dust. Pinal County has fared better in rainfall coverage in the last 24 hours, which is a good thing to note when considering future dust storm potential in the coming days.

In the end, between the hangover of dust early in the day from Monday night's dust storm and another punch of dust last night we easily exceeded the PM₁₀ standard on Tuesday. Today, is likely to repeat (i.e., lingering haze and then evening blowing dust), so the High Pollution Advisory stands.

The lower elevations of central and southern Arizona are in a great position to see strong to severe thunderstorms through at least Saturday, so be on guard for rapidly changing weather conditions, whether it be from blowing dust or erupting thunderstorms. Steering flow for storms are lining up to be out of the northeast, while timing of storms reaching the Phoenix vicinity favor the late afternoon and early evenings.

As rainfall coverage expands to help stabilize desert soils, dust loading is expected to drop in lieu ongoing powerful thunderstorm outflows crossing through the area. For Thursday, a PM₁₀ Health Watch is issued and then forecasted concentrations beyond that finally drop below the 90 AQI mark required to reach the minimum Health Watch criteria.

Not to forget about ozone! One monitor did exceed the EPA standard on Tuesday at Queen Valley. An Ozone HPA was in place yesterday and continues for today and Thursday. Coverage of exceedances are expected to increase, though, starting today. The largescale weather pattern is a known setup for ozone to stay elevated: poor vertical mixing and predominate northeasterly and easterly winds above the surface that counter our typical mountain-valley winds. The wildcards are local thunderstorms popping up to disperse the ozone plume and lingering debris cloud cover from regional storm blowups blocking sunlight to inhibit new ozone formation. The problem is that these storm influences are more likely after peak afternoon ozone production this week, so an elevated ozone forecast carries on.

Watch those skies! Be air quality and monsoon alert!

- J. Malloy
ADEQ Meteorologist

What Flag Should I Fly?

Wednesday: Orange



Thursday: Orange



What is the Flag Program and how can my school/organization join? | [Learn More >](#)

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Dust Risk-Based Forecast | Maricopa County

Updated On: 8/9/2018 - 9:15 AM

Thursday



Stagnation: Morning stagnation

Wind: Southwest winds 10-15 mph with evening thunderstorm outflows likely

Friday



Stagnation: Morning stagnation

Wind: Southwest winds 5-10 mph with evening thunderstorm outflows possible

Saturday



Stagnation: Morning stagnation

Wind: Southwest winds 10-15 mph with evening thunderstorm outflows possible

Sunday



Stagnation: Morning stagnation

Wind: Southwest winds 10-15 mph with evening thunderstorm outflows possible

Monday



Stagnation: Morning stagnation

Wind: Southwest winds 5-10 mph with evening thunderstorm outflows possible

Forecast Discussion:

Another hazy, muggy morning here in Phoenix! Last night was indeed active in the open deserts between us and Tucson. A dust storm rolled up from the south under high winds to spread excessive amounts of particulates back into the Valley. A few lucky spots in the Phoenix area did receive locally heavy rain with isolated storms that tried to fire along the outflow boundary that brought in the dust. Pinal County has fared better in rainfall coverage in the last 24 hours, which is a good thing to note when considering

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Dust Risk:
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future dust storm potential in the coming days.

In the end, between the hangover of dust early in the day from Monday night's dust storm and another punch of dust last night we easily exceeded the PM₁₀ standard on Tuesday. Today, is likely to repeat (i.e., lingering haze and then evening blowing dust), so the High Pollution Advisory stands.

The lower elevations of central and southern Arizona are in a great position to see strong to severe thunderstorms through at least Saturday, so be on guard for rapidly changing weather conditions, whether it be from blowing dust or erupting thunderstorms. Steering flow for storms are lining up to be out of the northeast, while timing of storms reaching the Phoenix vicinity favor the late afternoon and early evenings.

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- J. Malloy
ADEQ Meteorologist

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Stormy Conditions

Blowing Dust

Storm Outlook: Today & Friday

- Scattered Strong Storms Across Southern AZ – including metro Phoenix.
- Isolated Strong Storms Across Southeast CA

Threats/Impacts:

- Lightning
- Strong Winds
- Blowing Dust
- Localized Flooding

Photo: Courtesy of AZCentral

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NWSPhoenix



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@NWSPhoenix



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Click a location below for detailed forecast.



Last Map Update: Thu, Aug. 9, 2018 at 12:34:24 pm MST

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Stormy Conditions

Blowing Dust

Blowing Dust Advisory

Blowing Dust Advisory
3 PM MST TO 10 PM

Affected area: Shaded in brown.

Timing: This afternoon and evening from 3 PM - 10 PM..

Impacts: Gusty winds and visibility reduced below 1 mile will make traveling difficult and dangerous.

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Air Quality Department

AIR QUALITY **UNHEALTHY** **FOR SENSITIVE GROUPS**

WOOD BURNING **LEAF BLOWING** **OFF-HIGHWAY VEHICLES**

TODAY
Clear
107° High 87° Low
Winds blowing NE at 6 MPH

TOMORROW
HIGH POLLUTION ADVISORY for tomorrow
07/20/18, limit outdoor activity.

HPA

For more air quality information, please visit

CLEAN AIR MAKE MORE

Current Air Quality



Contact Us

Air Quality Department

AQmail@mail.maricopa.gov

Physical Address [View Map](#)

1001 N Central Suite 125
Phoenix, AZ 85004

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- Performance Test Evaluation
- Permits, Certifications & Notifications
- Public Notices

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ADEQ Air Quality Forecast



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AQmail@mail.maricopa.gov

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1001 N Central Suite 125
Phoenix, AZ 85004

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Phone: 602-506-6010

Fax: 602-372-0587

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Tools for the public to help you be informed about and get involved in your air quality

Air Quality News

Thursday's Ozone High Pollution Advisory extended through Friday, July 20

Posted to [Air Quality](#) on July 19, 2018

Ozone High Pollution Advisory in effect Thursday and Friday, July 19-20. This HPA is due to ozone levels expected to accumulate enough to exceed the federal health standard for ozone.

[Read on...](#)

Maricopa County Air Quality Mobile App Reaches Milestone

Posted to [Air Quality](#) on June 13, 2018

Maricopa County Air Quality Department's Clean Air Make More app surpasses 40,000 downloads

[Read on...](#)

Maricopa County Air Quality Department Launches Lawn Mower Replacement Program

Posted to [Air Quality](#) on June 4, 2018

In an effort to improve air quality and reduce air pollution produced by gasoline powered lawn mowers, Maricopa County Air Quality Department introduces 'Mowing Down Pollution' lawn mower replacement program.

[Read on...](#)

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Training

July 2018

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

Department Events

Fri Jul. 20

[Rule 310 Dust Control Training](#)

Fri Aug. 3

[Rule 310 Dust Control Training](#)

Tue Jul. 24

[Rule 316 Dust Control Training](#)

Wed Aug. 8

[Rule 310 Dust Control Training](#)

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Training

July 2018

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
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22	23	24	25	26	27	28
29	30	31	1	2	3	4

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Fri Jul. 20

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Fri Aug. 3

[Rule 310 Dust Control Training](#)

Tue Jul. 24

[Rule 316 Dust Control Training](#)

Wed Aug. 8

[Rule 310 Dust Control Training](#)

Wed Jul. 25

[Rule 310 Dust Control Training](#)

Fri Aug. 17

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Rapid Response Notification System

As Maricopa County strives to meet the federal health limits for dust pollution, the awareness and actions of every individual can go a long way toward clean air. Failing to meet the federal health standard for dust [PM₁₀] pollution threatens public health and ultimately more than \$7 billion in transportation project funding for Maricopa County.

You can help to maintain compliance with air quality standards by signing up for notifications of Rapid Response events. When dust pollution levels begin to rise, the Maricopa County Air Quality Department will send you a message notifying you of where the pollution hot spot is and what steps you will need to do to help prevent an exceedance of the health standard.

How it works

When a Rapid Response notification is broadcast, the department will ask air quality permit holders with dust generating activities to inspect their site as soon as possible and employ Best Available Control Measures to stabilize all disturbed soils to reduce blowing dust.

Air Quality Department inspectors will canvass the area to ensure compliance with its dust control standards. If you see a dust control issue, give us a call and report the air quality violation at 602-372-2703  or [file a report online](#).

Air Monitoring Locations

A Rapid Response notification will be sent from one of 15 air monitoring locations.

[View a Map of the Air Monitoring Stations](#)

Access & Subscribe

Access one or more of the sites provided to opt in to receive notices when PM₁₀ levels begin to rise in areas, including:

- [Buckeye \[BE\] Highway 85 and Maricopa County Highway 85](#)
- [Central Phoenix \[CP\] 16th Street and Roosevelt](#)
- [Durango Complex \[DC\] 27th Avenue and Durango Street](#)
- [Dysart \[DY\] Dysart Road and Bell Road](#)
- [Glendale \[GL\] 59th Avenue and West Olive](#)
- [Higley \[HI\] Higley Road and Williams Field Road](#)

- [Mesa \[ME\] Broadway and Alma School Roads](#)
- [North Phoenix \[NP\] 7th Street and Dunlap Avenue](#)
- [South Phoenix \[SP\] Central Avenue and Broadway](#)
- [South Scottsdale \[SS\] near Scottsdale Road and Thomas Road](#)
- [Tempe \[TE\] air monitoring site near College Avenue and Apache Boulevard](#)
- [West Chandler \[WC\] Ellis Street and Frye Road](#)
- [West 43rd Avenue \[WF\] 43rd Avenue and Broadway Road](#)
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- [Zuni Hills \[ZH\] 109th Avenue and Deer Valley Road](#)

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Environmental Quality



Pima County Department of Environmental Quality (PDEQ), formed in 1989, serves Pima County by protecting public health and the environment. PDEQ operates programs to monitor air and water quality, hazardous waste, solid waste, and assist in waste minimization and pollution prevention. PDEQ also provides public outreach, education, and citizens' assistance; processes environmental permits; and responds to public complaints and inquiries with investigations and enforcement.

Our Mission

Preserve and protect the environment of Pima County for the long-term benefit of residents' health, welfare, safety, and quality of life. Identify and respond to environmental issues by providing public services including monitoring, enforcement, information, education, and solid waste management.

Featured News

- [June 22, 2018 - Air quality exceeds EPA health standard](#)
- [June 22, 2018 - PDEQ issues air quality advisory for third day this week](#)
- [June 21, 2018 - Environmental Quality issues Air Quality Advisory for June 21](#)
- [June 20, 2018 - Air Quality Advisory issued for June 20](#)
- [June 15, 2018 - Keep stormwater clean by picking up after pets](#)

[View more news articles](#)

Special Notice: PDEQ has an [updated plan review procedure](#) that affects submittals for sewer projects, water projects, and the approval of sanitary facilities for subdivision projects.

[Air](#) [Water](#) [Waste & Recycling](#) [Information & Outreach](#) [Complaints](#) [Kids Corner](#) [Fees](#)

Air Program

The [Air Program](#) is comprised of multiple sections which address different issues regarding air quality.

Air Quality Monitoring

- [Current Air Quality](#)
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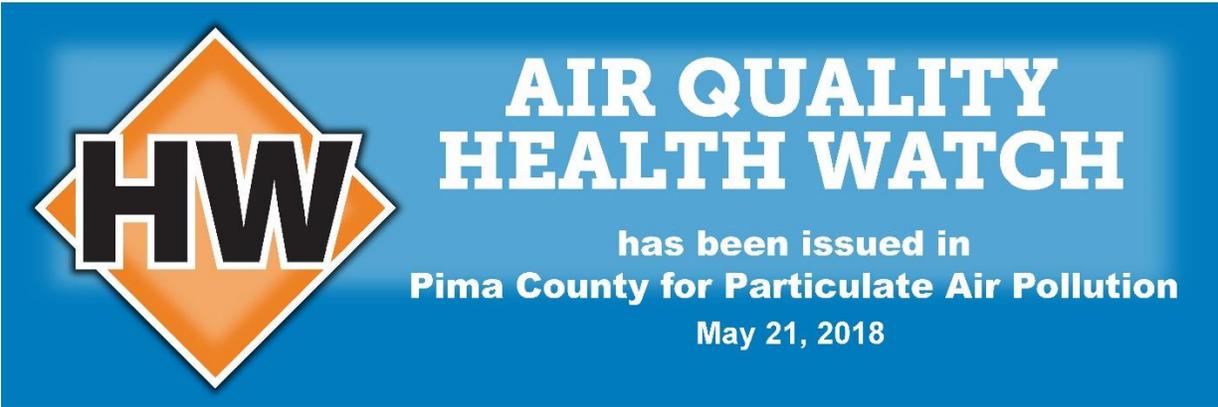
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Contact: Beth Gorman (520) 724 -7446; (520) 603-0358

Pima County, Ariz. - The Pima County Department of Environmental Quality (PDEQ) is issuing an air pollution watch for elevated levels of particulate matter in Pima County. High winds and lack of rain could cause particulate matter to approach “Unhealthy Levels for Sensitive Individuals” later today, especially in dust-prone areas. Residual wind-blown particulates may remain in the air on Saturday.

Individuals with heart disease and respiratory disease, children, older adults and active individuals who are outside should reduce prolonged or heavy exertion to decrease the amount of particulates they breathe into their lungs. Small particles can travel into the respiratory system and cause short-term health effects such as eye, nose, throat, and lung irritation, coughing, sneezing, runny nose and shortness of breath. If they are in dust-prone areas, those most at risk may feel better if they avoid outside exercise and keep windows and doors closed to help reduce exposure to particulate matter.

Particulate matter is made up of tiny specks of soot, dust, and aerosols that are suspended in the air we breathe. Particulate matter can come from disturbed land, dirt roads, construction and mining activity and becomes airborne with high winds. Small particulate matter can also come from combustion sources such as cars, industry, and indoor and outdoor fires.

PDEQ encourages residents and businesses to limit activities that generate dust such as using leaf blowers, driving on dirt roads, using off-road vehicles, and wood-burning. To improve air quality PDEQ recommends driving as little as possible, sharing rides, using public transit and avoiding engine idling.

PDEQ monitors air pollution in our region at 16 air quality monitoring sites in eastern Pima County. Up-to-the-hour air pollution levels are available in the [air monitoring section](#) of the PDEQ website.

Individuals can sign up to receive [Air Quality Advisories](#) and other Pima County Department of Environmental Quality notices via email. In addition, individuals can sign up to receive the Arizona Department of Environmental Quality provides [5-Day Air Quality Forecasts](#) for Pima County.

###

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Visit us at http://webcms.pima.gov/government/environmental_quality/ or follow us on Twitter at <https://twitter.com/PimaDEQ>.

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Pima County » [Newsroom Archive](#) » [Environmental Quality Archived News](#) » Wind-blown particles block mountain views

↑A ↵

Wind-blown particles block mountain views

Apr 17, 2018 | [Read More News](#)

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Pima County Department of Environmental Quality (PDEQ) reports that strong winds throughout southern California and Arizona caused elevated levels of particulate matter in Pima County that are currently obscuring the view of the mountains.

According to meteorologists at the National Weather Service and the Arizona Department of Environmental Quality (ADEQ), the winds caused a widespread area of blowing dust to move into Pima County overnight. The haze should clear later this morning and particulate levels will end up in the Good AQI range by the end of the day. At this time, particulate levels are not high enough for PDEQ to issue an air quality advisory; however, unusually sensitive individuals may want to limit their exposure to outside air until the particles settle out.

Small particles can travel into the respiratory system and cause short-term health effects such as eye, nose, throat, and lung irritation, coughing, sneezing, runny nose and shortness of breath. If they are in dust-prone areas, those most at risk may feel better if they avoid outside exercise and keep windows and doors closed to help reduce exposure to particulate matter.

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Strong winds, increased particulates prompt Air Pollution Watch

May 11, 2018 | [Read More News](#)

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Wondering why the skies are hazy today?

Jul 25, 2018 | [Read More News](#)

 Share

This morning the sky is hazy and our beautiful mountain views are a bit faded. Overnight winds brought smoke westward from the Bruno Fire, which is northeast of Douglas, Arizona. The Pima County Department of Environmental Quality's air quality monitors recorded elevated levels of particulates for several hours overnight. The highest readings were recorded at PDEQ's monitors in the Green Valley area.

The winds changed direction early this morning and smoke is no longer coming into the metropolitan Tucson area. However, residual particulates are still floating in the air causing the haze. Air quality is currently in the moderate range.

Afternoon breezes may help ventilate the area and clear out some of the haze, but the smoke could return as long as the wildfire persists. "If you smell smoke, you are breathing it," said Beth Gorman, Senior Program Manager for PDEQ. "If you are one of the many people in our community who have lung or heart disease and it is smoky where you are, you may want to reduce your level of exertion when you are outside," Gorman said.

For more information on ways to reduce air pollution and to see real-time air pollution levels, visit the [Pima County Department of Environmental Quality](#).



Contact: Beth Gorman
(520) 724-7446
(520) 603-0358 (c)

FOR IMMEDIATE RELEASE

Why Is the Sky Hazy Today?

Pima County, Ariz. (July 25, 2018) – This morning the sky is hazy and our beautiful mountain views are a bit faded. Overnight winds brought smoke westward from the Bruno Fire, which is northeast of Douglas, Arizona. The Pima County Department of Environmental Quality’s air quality monitors recorded elevated levels of particulates for several hours overnight. The highest readings were recorded at PDEQ’s monitors in the Green Valley area.

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TUCSON FORECAST

< RETURN TO AIR FORECASTING

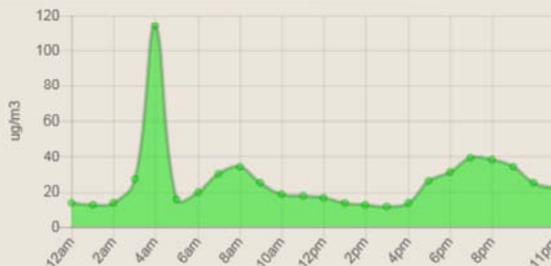
Air Quality Hourly Forecast | Tucson

Updated On: 8/8/2018 - 8:09 AM

Click on each day to view forecast.

Wednesday	Thursday	Friday	Saturday	Sunday
------------------	-----------------	---------------	-----------------	---------------

Wednesday Forecast:



Air Quality By Pollutant:

Pollutant	Wednesday 8/8/2018	Thursday 8/9/2018	Friday 8/10/2018	Saturday 8/11/2018	Sunday 8/12/2018
O ₃	61	50	47	50	58
PM ₁₀	24	20	21	24	31

AQI FORECAST

- Phoenix >
- Yuma >
- Nogales >
- Tucson >

[Understanding the Hourly Forecast >](#)

AQ RISK-BASED FORECAST

- Dust Risk:**
- Maricopa County >
- Pinal County >
- Lead Risk:**
- Hayden >

RELATED LINKS

[Current Weather Hazards & Observations >](#)

O₃ = Ozone, PM₁₀ = Particles ≤ 10 microns

Forecast Discussion:

Thunderstorms moved through Tucson once again yesterday evening with Tucson International picking up 0.26 inches of rain. A rain gauge just north of Davis Monthan AFB measured 0.51 inches, which is the highest reading we could find in the Tucson area.

Active weather is in the forecast again today for Tucson. A complex weather pattern is taking shape with a few features to note: (1) a weak disturbance located along the Arizona/Mexico border near Nogales, (2) Hurricane John is located just SW of the tip of Baja, resulting in a visible moisture surge into Arizona and (3) high pressure is located over southern Nevada setting up a stronger east/northeast flow across the area. All of this will combine to make for an active afternoon/evening in the Tucson area.

By mid-afternoon, expecting storms to form northeast and east of Tucson before moving into the area during the late afternoon/evening hours. Given the amount of moisture available, these storms will be capable of producing very heavy rain in a short period of time.

Tomorrow and Friday, a very similar pattern will hold as the moisture surge continues. This will result in a chance of thunderstorms each day. With how much moisture will be present and weak disturbances moving through the area expecting cloud cover to be thicker from time-to-time which may limit some thunderstorm development but still expecting active weather each day.

As for air quality, with plenty of clouds and storms expected today through at least Friday, forecasting ozone values to drop back into the Good AQI category after today. As for PM-10, values are forecast to remain in the Good AQI category with the exception of some local activity resulting in spikes at the Rillito monitor.

Overall, stay updated with the latest weather conditions in your area over the next several days as strong/severe storms with very heavy rain are possible.

- M. Pace
ADEQ Meteorologist

What Flag Should I Fly?

Wednesday: Yellow



Thursday: Green



What is the Flag Program and how can my school/organization join? | [Learn More >](#)

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COMPLIANCE ASSISTANCE



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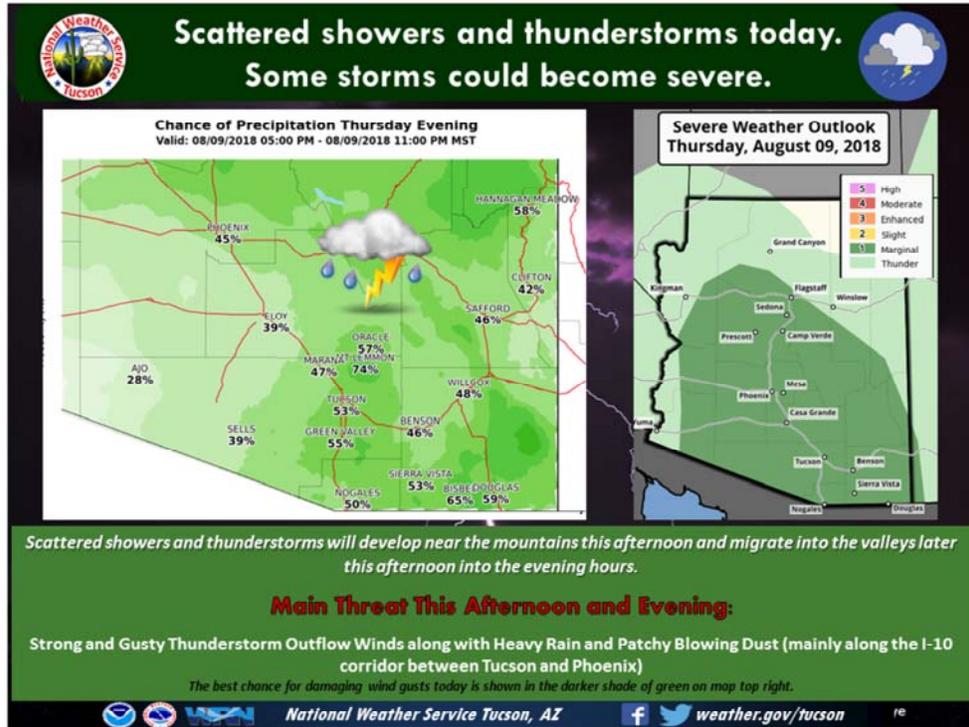
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Blowing Dust Today



[Show Caption](#)

Click a location below for detailed forecast.



Last Map Update: Thu, Aug. 9, 2018 at 12:58:34 pm MST

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[Flash Flood Watch](#) ■

[Blowing Dust Advisory](#) ■

[Air Quality Alert](#) ■

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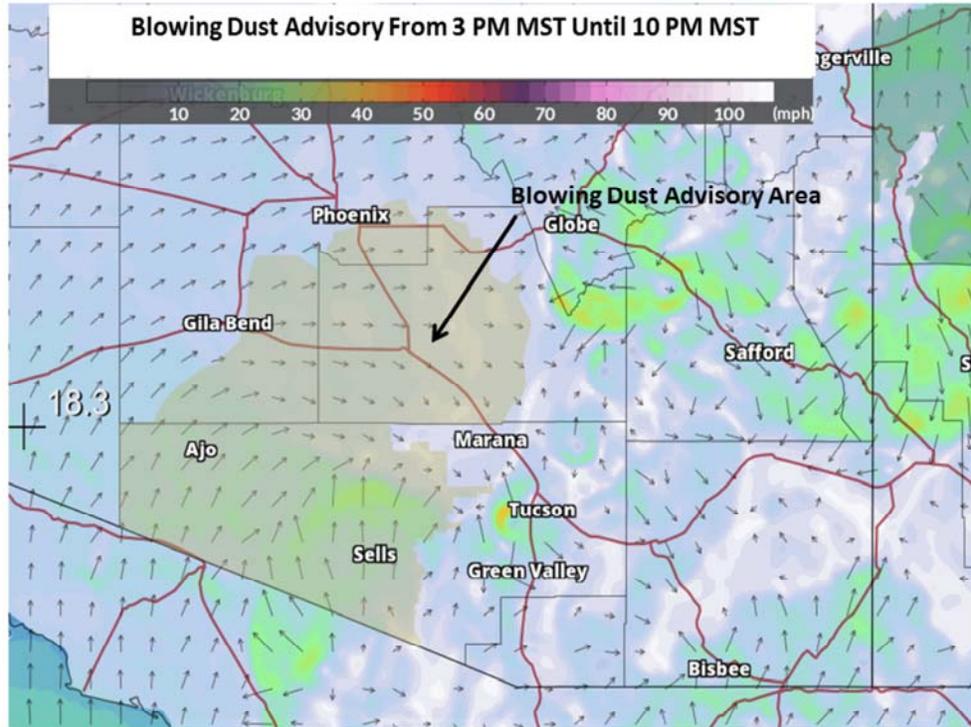
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Air Monitoring

[Current Air Quality Information](#)

The ultimate goal of the Pima County Department of Environmental Quality (PDEQ) air quality control program is to reduce harmful contaminants in ambient air to healthy levels, and maintain those levels. A key process in controlling air pollution is to define the nature and extent of air quality problems through monitoring. Pima County is currently in attainment of all U.S. EPA National Ambient Air Quality Standards, however, this region is very close to non-attainment of the EPA ground-level ozone standard.

PDEQ monitors [six criteria pollutants](#) in the Tucson and Green Valley area in accordance with regulations established by the Environmental Protection Agency (EPA). Data is reported hourly here, to the EPA's Air Now website and other agencies. An Air Index Now report, based on the Air Quality Index (AQI), is generated hourly for public notification of current air quality conditions and possible health effects. Below are the current AQI values.



Current [Visibility Photo](#) - [Large Format](#)

[All Current Photos](#) - [Panorama](#)

Pima County DEQ Visibility Camera

AIR INDEX NOW

Highest Air Index Now Values

Report Generated: 7/19/2018 5:55 PM

Pollutant	Highest Value	Monitoring Site	Air Quality Index Category	Cautionary Statement
CO	1	Alvernon & 22nd	Good	
O3	42	Coachline	Good	
PM10	20	South Tucson	Good	
PM2.5	14	Rose Elementary	Good	

CO = Carbon Monoxide, O3 = Ozone
 PM2.5 = Particulate Matter 2.5 um in diameter and smaller
 PM10 = Particulate Matter 10 um in diameter and smaller

[Carbon Monoxide \(CO\)](#) [Ozone \(O3\)](#) [Particulate Matter \(PM\)](#)

Besides the tabs below the [Information, Education, Public Outreach](#) and the [Clean Air Program](#) area will have additional information about air quality. As part of its role in the community, PDEQ staff offers educational, regulatory and professional group tours of its air quality monitoring facilities. Many schools utilize these tours in their curriculum. Please call our Community Outreach Contact, at (520) 724-7400 for more information on this service. Notify us if you would like to receive [air quality advisories](#) and related information. Thanks to a collaborative effort between the Arizona Department of Environmental Quality (ADEQ) and PDEQ [a 5-day air quality forecast](#) for the Tucson Area is available from ADEQ.

[Air Quality Index](#) [Air Pollution Data](#) [Monitoring Information & Locations](#) [Reports](#)

public. AQI levels are set by the Environmental Protection Agency in accordance with section 319 of the Federal Clean Air Act.

Air quality information is collected by the Pima County Department of Environmental Quality monitors located throughout Eastern Pima County. The monitors collect concentration information in parts per million and parts per billion for gases and micrograms per cubic meter for particulates. The level of pollution in the air and the related health effects are relayed to the public using the Air Quality Index. If a pollutant such as ozone has an AQI value of 59, the corresponding qualitative descriptor would be MODERATE. The AQI value of 100 generally corresponds to the National Ambient Air Quality Standard for the pollutant. AQI values below 100 are considered satisfactory while numbers above 100 are considered to be unhealthy.

The AQI is the highest value for the pollutant in a 24-hour period. The highest 8-hour average for ozone and CO, and the highest 24-hour average for PM10 and PM2.5 . This [report](#) is used for daily statistics and historical summaries.

The [Air Index Now](#) is used for the hourly updates of what the public is breathing at that moment. This index is [calculated](#) using modifications to the AQI to give the most accurate estimate of what is in the air at that particular point in time.

When air quality levels are elevated you can sign up to receive our advisory notifications. Please call our Community Outreach Contact at 724-7400 for this service.

- [Current Air Quality](#)

Appendix C – Air Quality Forecasts/Notifications – West Pinal



- Menu**
- Air Quality Report
- Air Quality Forecast
- Air Quality Map Viewer
- Air Quality News
- Asbestos
- Burn Permits
- Complaint Form
- Customer Survey
- Definitions
- Dust
- Exceptional Events
- Flag Program
- Forms
- Hearing Board
- Industrial
- Monitoring Network
- New Source Review Updates
- Online Payments
- Public Notices
- Rulemaking
- Rules & Regulatory Actions
- Travel Reduction
- Website Tree
- Contact Us
- ePlan Review/ePermitting

Michael Sundblom - Director

Air Quality

31 N Pinal St Bldg F
PO Box 987
Florence, AZ 85132

Office: 520.866.6929
Fax: 520.866.6967
AirQuality@pinalcountyaz.gov



Pinal County Air Quality

Hydrogen Sulfide Readings @ Oasis Magic Ranch

Response to Questions Relating to Handling of Johnson Utilities Hydrogen Sulfide Violations

Ozone High Pollution Advisory (HPA) in effect Tuesday & Wednesday August 7-8, 2018

PM10 High Pollution Advisory (HPA) in effect Wednesday & Thursday, August 8-9, 2018

Air Quality Report

City of Phoenix	Phoenix Station, AZ
Source Mile Counter	Phoenix, AZ
West Air Park	Phoenix, AZ
Southwest	Phoenix, AZ
Green Valley	Phoenix, AZ

View the 24-hour average report from the last day's data.

Measurements are reported by station location. Details include Ozone and Particulate Matter.

MORE INFORMATION

Burn Permits



All outside burning (unless exempt) requires a permit—residential, commercial, agriculture, bonfires, training exercise fires, building demolition, dangerous material, or Air Curtain Burning.

MORE INFORMATION

Dust Permits



Dust kicked up by vehicles, construction, burning and wind events create pollution called particulate matter. Learn about rules and regulations to limit particulate matter produced.

MORE INFORMATION

Complaint Filing

Complaint Date:	State of most recent
Your Name:	Time of most recent
Your Phone:	Description of the
Your Email:	
Your Street Address:	Source of problem (complete address)
Your City:	Phone number of a
Your Zip:	Street address for
Do you want a follow-up phone call or visit?	City for source:

Report Air Quality health hazards such as Asbestos, Burning, Dust, Industrial Emissions, Odors, etc. Fill out the online complaint form to report your concern.

COMPLAINT FILING

Industrial Permits





Any industrial operation that has the potential to emit 5.5 pounds per day or 1 ton per year of any regulated air pollutant is required to obtain a permit from Pinal County Air Quality.

[MORE INFORMATION](#)

Monitoring Stations



View a map of all federally mandated monitoring stations. The address for each site is provided along with the station's details. Click on the DETAILS link, to see picture and trends analysis.

[MORE INFORMATION](#)

Public Notices

Public Notices inform you about proposed changes to Air Quality rules/ordinances, industrial permits to be issued or renewed, and the monitoring network review in Pinal County. Public notices provide an opportunity for public comment.

Have questions or comments?
Email: airquality@pinalcountyaz.gov

Or mail to:

Air Quality/Public Notices
P.O. Box 987
Florence, AZ 85132

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Air Quality Permits
Building Permits
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Pinal County Government
31 N. Pinal Street
Florence, AZ 85132
520.509.3555 (Local)
888.431.1311 (Toll Free)



PINAL COUNTY



FORECAST

GOOD (0-50)	MODERATE (51-100)	UNHEALTHY FOR SENSITIVE GROUPS (101-150)	UNHEALTHY (151-200)	VERY UNHEALTHY (201-300)	HAZARDOUS (301-500)
-------------	-------------------	--	---------------------	--------------------------	---------------------

AIR QUALITY FORECAST FOR WEDNESDAY AND THURSDAY, AUGUST 8-9, 2018

This forecast is updated by 1:00 p.m. Monday through Friday and as needed (AQI Forecast on [Twitter](#) – see tables below for location specific Twitters)

	Highest AQI value/Site in Pinal County	Highest AQI forecasted value (see tables below for forecasts by monitoring location)				
	YESTERDAY MON 8/6/18	TODAY TUE 8/7/18	TOMORROW WED 8/8/18	EXTENDED THU 8/9/18	EXTENDED FRI 8/10/18	EXTENDED SAT 8/11/18
OZONE	108 QUEEN VALLEY	105 UNHEALTHY FOR SENSITIVE GROUPS	105 UNHEALTHY FOR SENSITIVE GROUPS	89 MODERATE	80 MODERATE	85 MODERATE
PM _{2.5}	42 HIDDEN VALLEY	55 MODERATE	125 UNHEALTHY FOR SENSITIVE GROUPS	95 MODERATE	55 MODERATE	55 MODERATE
PM ₁₀	41** SAN TAN VALLEY	65** MODERATE	175** UNHEALTHY	125** UNHEALTHY FOR SENSITIVE GROUPS	75** MODERATE	55** MODERATE
HEALTH WATCH/ ADVISORY *	OZONE HEALTH WATCH 	OZONE HIGH POLLUTION ADVISORY 	OZONE & PM ₁₀ HIGH POLLUTION ADVISORY	OZONE & PM ₁₀ HIGH POLLUTION ADVISORY	NONE	NONE

		DUST	 DUST	 DUST		
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** Excludes the Hidden Valley Monitor, see Hidden Valley PM₁₀ table below

PM₁₀ = Particles 10 microns and smaller; PM_{2.5} = Particles 2.5 microns and smaller

“Ozone Health Watch” means that the highest concentration of OZONE may approach the federal health standard.

“PM_{2.5} and/or PM₁₀ Health Watch” means that the highest concentration of PM_{2.5} and/or PM₁₀ may approach the federal health standard.

“High Pollution Advisory” (HPA) means that the highest concentration of OZONE, PM_{2.5} or PM₁₀ may exceed the federal health standard.

“DUST” means that short periods of high PM₁₀ concentrations caused by outflow from thunderstorms are possible.

Health message for Tuesday-Thursday, August 7-9, 2018: Active children, adults and people with lung disease, such as asthma, should reduce outdoor activities.

Discussion

Updated Tuesday, August 7, 2018

**** OZONE HIGH POLLUTION ADVISORY (HPA) IN EFFECT TUESDAY & WEDNESDAY, AUGUST 7-8, 2018 ****

**** PM10 HIGH POLLUTION ADVISORY IN EFFECT WEDNESDAY AND THURSDAY, AUGUST 8-9, 2018 ****

High pressure will move northward and switch the wind flow to a more favorable direction which will steer mountain storm activity down into the desert locations. Additionally an inverted trough over southern Arizona is projected to kick off significant storms Wednesday afternoon/early evening. Strong outflow winds and significant blowing dust (i.e. Haboob) are likely. Therefore a PM₁₀ High Pollution Advisory (HPA) has been issued for Wednesday and extended into Thursday due to more chances for outflow winds and blowing dust. Ozone also will be elevated the next day or so therefore the ozone High Pollution Advisory (HPA) in effect today remains in effect for Wednesday. Anyone with respiratory and/or heart ailments should limit outdoor activities during the afternoon and evening hours when ozone levels are there highest. Additionally, remain indoors during periods of significant blowing dust.

The ozone levels are forecast to drop for the Thursday and Friday timeframe, just below the ozone health watch criteria (90-100 on the AQI scale). Check back on Thursday for an updated air quality forecast.

Stay up to date with current air pollution levels by checking the near real-time PM₁₀, PM_{2.5} and ozone levels online at <http://www.pinalcountyyaz.gov/AirQuality/Pages/AirQualityReport.aspx>.

Forecaster: S. DiBiase

[HOURLY MONITORING DATA](#) (Draft, preliminary data - subject to change)
[MONITORING NETWORK MAP](#) [YESTERDAY'S AQI LEVELS](#)

	Yesterday's Daily Maximum AQI @ Hidden Valley	HIDDEN VALLEY PM₁₀ AIR QUALITY FORECAST				
SITE NAME	MON 8/6/18	TODAY AQI FORECAST TUE 8/7/18	TOMORROW AQI FORECAST WED 8/8/18	EXTENDED AQI FORECAST THU 8/9/18	EXTENDED AQI FORECAST FRI 8/10/18	EXTENDED AQI FORECAST SAT 8/11/18
Hidden Valley (Twitter: HV_AQI)	52	75	145	115	75	75

<u>AIR QUALITY FORECAST FOR PM_{2.5} (PARTICLES)</u>					
SITE NAME	TODAY AQI FORECAST TUE 8/7/18	TOMORROW AQI FORECAST WED 8/8/18	EXTENDED AQI FORECAST THU 8/9/18	EXTENDED AQI FORECAST FRI 8/10/18	EXTENDED AQI FORECAST SAT 8/11/18
Casa Grande (Twitter: CG_AQI)	46	125	75	48	45
Hidden Valley (Twitter: HV_AQI)	55	125	95	55	55

**AIR QUALITY FORECAST BY LOCATION FOR
PM₁₀ (PARTICLES)**

SITE NAME	TODAY AQI FORECAST TUE 8/7/18	TOMORROW AQI FORECAST WED 8/8/18	EXTENDED AQI FORECAST THU 8/9/18	EXTENDED AQI FORECAST FRI 8/10/18	EXTENDED AQI FORECAST SAT 8/11/18
Apache Junction (Twitter: AJ AQI)	33	90	75	40	35
Casa Grande (Twitter: CG AQI)	55	145	110	50	48
Eleven Mile Corner (Twitter: PC Housing AQI)	60	165	125	52	50
Eloy (Twitter: Eloy AQI)	54	135	100	47	43
Maricopa (Twitter: Maricopa City AQ)	54	155	115	48	45
Pinal Air Park (Twitter: PAP AQI)	44	110	95	44	40
San Tan Valley Twitter: Santan AQI)	55	125	100	55	48
Stanfield (Twitter: Stanfield AQI)	65	175	125	60	55

**AIR QUALITY FORECAST BY LOCATION FOR
OZONE**

SITE NAME	TODAY AQI FORECAST TUE 8/7/18	TOMORROW AQI FORECAST WED 8/8/18	EXTENDED AQI FORECAST THU 8/9/18	EXTENDED AQI FORECAST FRI 8/10/18	EXTENDED AQI FORECAST SAT 8/11/18
Apache Junction (Twitter: AJ AQI)	105	105	89	80	85
Casa Grande (Twitter: CG AQI)	85	80	75	70	75
Pinal Air Park (Twitter: PAP AQI)	80	75	70	65	70

* The symbols used for the Health Watch/Advisory are shown below



- Symbol for Health Watch (HW)



- Symbol for High Pollution Advisory (HPA)

AIR POLLUTANTS IN DETAIL

PM₁₀ & PM_{2.5} (PARTICLES):

Description – The term “particulate matter” (PM) includes both solid particles and liquid droplets found in air. Many manmade and natural sources emit PM directly or emit other pollutants that react in the atmosphere to form PM. Particles less than 10 micrometers in diameter tend to pose the greatest health concern because they can be inhaled into and accumulate in the respiratory system. Particles less than 2.5 micrometers in diameter are referred to as “fine” particles and are responsible for many visibility degradations such as the “Valley Brown Cloud” (see <http://www.phoenixvis.net/>). Particles with diameters between 2.5 and 10 micrometers are referred to as “coarse”.

Sources – Fine = All types of combustion (motor vehicles, power plants, wood burning, etc.) and some industrial processes. Coarse = crushing or grinding operations and dust from paved or unpaved roads.

Potential health impacts – PM can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases, such as asthma and chronic bronchitis.

Units of measurement – Micrograms per cubic meter (ug/m³)

Averaging interval – 24 hours (midnight to midnight).

Reduction tips – Stabilize loose soils, slow down on dirt roads and carpool.

O₃ OZONE:

Description – This is a secondary pollutant that is formed by the reaction of other primary pollutants (precursors) such as VOCs (volatile organic compounds) and NO_x (Nitrogen Oxides) in the presence of heat and sunlight. The ozone “season” generally occurs during the spring and summer months (April-October) when high temperatures and extended daylight hours create the conditions most conducive to ozone formation.

Sources – VOCs are emitted from motor vehicles, chemical plants, refineries, factories, and other industrial sources. NO_x is emitted from motor vehicles, power plants, and other sources of combustion.

Potential health impacts – Exposure to ozone can make people more susceptible to respiratory infection, result in lung inflammation, and aggravate pre-existing respiratory diseases such as asthma. Other effects include decrease in lung function, chest pain, and cough.

Unit of measurement – Parts per billion (ppb).

Averaging interval – Highest eight-hour period within a 24-hour period (midnight to midnight).

Reduction tips – Curtail daytime driving, refuel cars and use gasoline-powered equipment as late in the day as possible.



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Dust Risk-Based Forecast | Pinal County

Updated On: 8/8/2018 - 9:10 AM

Wednesday



Stagnation: Light stagnation

Wind: Light becoming west 5-10 mph, evening outflows possible (30-40 mph)

Thursday



Stagnation: Light stagnation

Wind: Light becoming west to northwest 5-10 mph, Evening outflows possible (25-35 mph)

Friday



Stagnation: Light stagnation

Wind: Light becoming southwest 5-15 mph, slight chance for evening outflows

Saturday



Stagnation: Light stagnation

Wind: Light becoming west-southwest 5-15 mph, slight chance for evening outflows

Sunday



Stagnation: Light stagnation

Wind: Light becoming west-southwest 5-15 mph, slight chance for evening outflows

Forecast Discussion:

The Monsoon will return with a vengeance on Wednesday as the high pressure moves into a favorable location. Additionally an inverted trough over southern Arizona is also expected to provide a necessary kick to help develop strong storms on Wednesday afternoon/evening. Strong outflow winds and blowing dust on Wednesday and Thursday bring high dust risks for both days. However there is expected to be some rain associated with these two active days and so eventually the PM10 levels are expected

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RELATED LINKS

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to drop due to the rain, and so moderate dust risks are forecast for Friday through Sunday.

- S.DiBiase
Pinal County Air Quality Meteorologist

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Stormy Conditions

Blowing Dust

Storm Outlook: Today & Friday

- Scattered Strong Storms Across Southern AZ – including metro Phoenix.
- Isolated Strong Storms Across Southeast CA

Threats/Impacts:

- Lightning
- Strong Winds
- Blowing Dust
- Localized Flooding

Photo: Courtesy of AZCentral

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Click a location below for detailed forecast.



Last Map Update: Thu, Aug. 9, 2018 at 12:34:24 pm MST

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Stormy Conditions

Blowing Dust

Blowing Dust Advisory

Blowing Dust Advisory
3 PM MST TO 10 PM

Affected area: Shaded in brown.

Timing: This afternoon and evening from 3 PM - 10 PM..

Impacts: Gusty winds and visibility reduced below 1 mile will make traveling difficult and dangerous.

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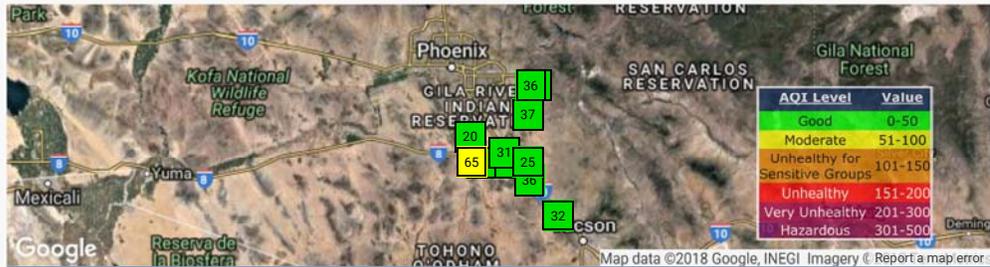
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Pinal County Air Quality Index Report

Climate Zones: Layers:



Link	Description
Air Quality Index Report	AQI values and concentrations for the last 24 hours.
Daily Parameter Report	Ozone, PM2.5 and PM10 (Preliminary and subject to change)
Daily Summary Report	
PM10 5-Minute Daily Summary Report	

[View Current Hourly Ozone, PM2.5 and PM10](#) (preliminary subject to change)

[View Current Air Quality Index Report](#)

[Background Information for Hourly Data](#)

[View Past Air Quality Index Reports](#) (3 days)

[View Current and Past PM10 5-Minute Data](#) (3 days) [Txt/CSV](#)

The Pinal County Air Quality Index map above shows the most recent ozone and particulate matter (PM10 – particulate matter 10 microns and less in size, PM2.5 - particulate matter 2.5 microns and less in size) levels. The AQI is a yardstick that runs from 0 to 500 with the higher the AQI value the greater the level of air pollution and thus a greater health concern. The health standard for each pollutant is represented by 100 on the AQI scale. Any AQI value over 100 represents an exceedance of the health standard for that particular pollutant and the air quality is considered to be unhealthy for either sensitive groups (asthmatics), 101 to 150 on the AQI scale or unhealthy for all people (151+ on the AQI scale). In addition to the AQI values, the ozone and particulate matter concentrations can also be displayed on the map by selecting each pollutant for the "Layers" dropdown menu.

Helpful Information

[Definitions](#)

[Links](#)

Ozone
Particulate Matter 2.5 (PM2.5)
Particulate Matter 10 (PM10)

-  [ADEQ Air Quality Forecast](#)
- [EPA AIRNow Homepage](#)
-  [Current Hourly Ozone and PM10 data \(preliminary results subject to change\)](#)

Pinal County Government
31 N. Pinal Street
Florence, AZ 85132
520.509.3555 (Local)
888.431.1311 (Toll Free)

Appendix D – Air Quality Forecasts/Notifications – Yuma



High Pollution Advisory has been issued for Wednesday, August 8 in the Yuma area for PM-10

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NEW PUBLIC NOTICES

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- | | |
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| <p>08/05/18 - COMMENT PERIOD BEGINS Request for No Further Action Determination for Layton Lakes Underground Fuel Tank Remediation VRP Site in Gilbert, Ariz. On Sunday, Aug. 5, 2018, the... See Notice ></p> | <p>09/04/18 - COMMENT PERIOD ENDS Request for No Further Action Determination for Layton Lakes Underground Fuel Tank Remediation VRP Site in Gilbert, Ariz. On Tuesday, Sept. 4, 2018,... See Notice ></p> |
| <p>09/03/18 - COMMENT PERIOD ENDS Proposed Renewal of AZPDES Permit (AZ0025747) Coverage for the Flite Goodyear Facility On Sept. 3, 2018, the public... See Notice ></p> | <p>08/02/18 - COMMENT PERIOD BEGINS Proposed Renewal of AZPDES Permit (AZ0025747) Coverage for the Flite Goodyear Facility On Thursday, Aug. 2, 2018,... See Notice ></p> |
| <p>08/06/18 - COMMENT PERIOD BEGINS Proposed Arizona Ozone Infrastructure State Implementation Plan Revision On Aug. 6, 2018, the comment... See Notice ></p> | <p>09/06/18 - COMMENT PERIOD ENDS Proposed Arizona Ozone Infrastructure State Implementation Plan Revision On Sept. 6, 2018, the public... See Notice ></p> |

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NEW EVENTS | MEETINGS | HEARINGS

- | | |
|---|--|
| <p>08/03/18 - STAKEHOLDER MEETING State Assumption of Underground Injection Controls (UIC) : The purpose of... See Event Details ></p> | <p>08/08/18 - PUBLIC MEETING Preliminary Decision to Issue a Significant Amendment to an APP for Johnson Utilities Section 11 Wastewater Treatment Plant :</p> |
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What is the AZSERC Program?

Compliance Assistance

Learn More About Air Quality Programs

What are GIS eMaps?

Air Quality Monitoring and Assessments

What is the Water Quality Assurance Revolving Fund (WQARF) Program?

ADEQ is holding... [See Event Details >](#)

08/08/18 - PUBLIC HEARING | Preliminary Decision to Issue a Significant Amendment to an APP for Johnson Utilities Section 11 Wastewater Treatment Plant :
ADEQ is holding... [See Event Details >](#)

08/09/18 - PUBLIC MEETING | Preliminary Decision to Issue a Significant Amendment to an APP for Johnson Utilities Section 11 Wastewater Treatment Plant :
ADEQ is holding... [See Event Details >](#)

08/09/18 - PUBLIC MEETING | Preliminary Decision to Issue a Significant Amendment to an APP for Johnson Utilities Section 11 Wastewater Treatment Plant :
ADEQ is holding... [See Event Details >](#)

08/16/18 - PUBLIC MEETING | East Central Phoenix CAB Meeting :
... [See Event Details >](#)

08/20/18 - PUBLIC MEETING | 56th Street and Earll Drive WQARF Site CAB Meeting :
... [See Event Details >](#)

08/22/18 - PUBLIC EVENT | Solid and Hazardous Waste Programs Workshop :
... [See Event Details >](#)

[See all >](#)

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Air Quality Hourly Forecast | Yuma

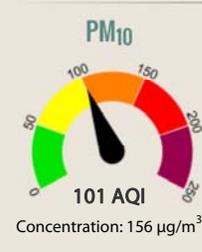
Updated On: 8/8/2018 - 9:09 AM

Click on each day to view forecast.

- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

Wednesday Forecast:

- NPA** Alert: PM₁₀ High Pollution Advisory in effect for Wednesday
- !** Notice: Dust possible overnight



Air Quality By Pollutant:

Pollutant	Wednesday 8/8/2018	Thursday 8/9/2018	Friday 8/10/2018	Saturday 8/11/2018	Sunday 8/12/2018
Ozone	39	39	39	39	39
PM ₁₀	101	101	101	101	101

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O ₃	39	38	40	58	61
PM ₁₀	101	92	68	54	42

O₃ = Ozone, PM₁₀ = Particles ≤ 10 microns

Forecast Discussion:

Yesterday was a dusty day. PM₁₀ (dust) levels were substantially elevated throughout the whole morning, decreased during the afternoon, and then shot back up later in the night. And for several hours early this morning, they were elevated. Of course, gusty winds out of the south-southeast were to blame. Fortunately, as of 8 AM this morning, PM₁₀ levels have been running much lower.

Today, a PM₁₀ High Pollution Advisory is in effect, mainly for this morning's activity. Tonight through at least Friday night/early Saturday morning, overnight outflow winds and accompanying dust will continue to be possible each night in Yuma. PM₁₀ is thus forecast in the mid-to-upper Moderate Air Quality Index (AQI) category over the next several days, with highest levels expected in the early morning hours. A PM₁₀ Health Watch has been issued for tomorrow.

After Saturday morning, the potential for storm outflows looks to decrease and therefore, PM₁₀ levels are forecast to decrease.

Ozone is expected to remain in the Good AQI category through the work week because of southerly winds. Then by the weekend, ozone is forecast in the Moderate AQI category.

Check back tomorrow for the next Yuma air quality forecast.

- M. Graves
ADEQ Meteorologist

What Flag Should I Fly?

Wednesday: Orange



Thursday: Yellow



What is the Flag Program and how can my school/organization join? | [Learn More >](#)

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Stormy Conditions

Blowing Dust

Storm Outlook: Today & Friday

- Scattered Strong Storms Across Southern AZ – including metro Phoenix.
- Isolated Strong Storms Across Southeast CA

Threats/Impacts:

- Lightning
- Strong Winds
- Blowing Dust
- Localized Flooding

Photo: Courtesy of AZCentral

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Appendix E – Education Programs – Phoenix

Air Quality Guide for Particle Pollution

PollutionHarmful particle pollution is one of our nation’s most common air pollutants. Use the chart below to help reduce your exposure and protect your health. For your local air quality forecast, visit <http://www.azdeq.gov/programs/air-quality-programs/air-forecasting>.

Air Quality Index	Who Needs to be Concerned?	What Should I do?
Good (0-50)		It’s a great day to be active outside!
Moderate (51-100)	Some people who may be unusually sensitive to particle pollution.	<p>Unusually sensitive people: Consider reducing prolonged or heavy outdoor exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.</p> <p>Everyone else: It’s a good day to be active outside.</p>
Unhealthy for Sensitive Groups (101-150)	Sensitive groups include people with heart or lung disease, older adults, children and teenagers.	<p>Sensitive groups: Reduce prolonged or heavy exertion. It’s OK to be active outside, but take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath.</p> <p>People with asthma should follow their asthma action plans and keep quick-relief medicine handy.</p> <p>If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.</p>
Unhealthy (151-200)	Everyone	<p>Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling.</p> <p>Everyone else: Reduce prolonged or heavy outdoor exertion. prolonged or heavy exertion. Take more breaks during outdoor activities.</p>

Key Facts to Know About Particle Pollution:

- Particle pollution can cause serious health problems – including asthma attacks, heart attacks, strokes and early death.
- Particle pollution can be a problem at any time of the year, depending on where you live.
- You can reduce your exposure to ozone and still get exercise! Use the Daily Air Quality Forecasts at <http://www.azdeq.gov/programs/air-quality-programs/air-forecasting> to plan your activity.

What is particle pollution?

Particle pollution comes from many different sources. Fine particles (2.5 micrometers in diameter and smaller) come from power plants, industrial processes, vehicle tailpipes, woodstoves, and wildfires. Coarse particles (between 2.5 and 10 micrometers) come from crushing and grinding operations, road dust, and some agricultural operations.

Why is particle pollution a problem?

Particle pollution is linked to a number of health problems, including coughing, wheezing, reduced lung function, asthma attacks, heart attacks and strokes. It also is linked to early death.

Do I need to be concerned?

While it's always smart to pay attention to air quality where you live, **some people may be at greater risk from particle pollution.** They include:

- People with cardiovascular disease (diseases of the heart and blood vessels)
- People with lung disease, including asthma and COPD
- Children and teenagers
- Older adults

- Research indicates that obesity or diabetes may increase risk.
- New or expectant mothers may also want to take precautions to protect the health of their babies.

How can I protect myself?

Use AQI forecasts to plan outdoor activities. On days when the AQI forecast is unhealthy, take simple steps to reduce your exposure:

- Choose a less-strenuous activity
- Shorten your outdoor activities
- Reschedule activities
- Spend less time near busy roads

When particle levels are high outdoors, they can be high indoors – unless the building has a good filtration system.

Keep particles lower indoors by:

- Eliminate tobacco smoke
- Reduce your use of wood stoves and fireplaces
- Use HEPA air filters and air cleaners designed to reduce particles
- Don't burn candles

Can I help reduce particle pollution?

Yes! Here are a few tips:

- Drive less: carpool, use public transportation, bike or walk
- Choose ENERGY STAR appliances
- Don't burn leaves, garbage, plastic or rubber. Keep car, boat and other engines tuned



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Children's Environmental Health Program

Revised on: June 21, 2018 - 1:26pm

The Office of Children's Environmental Health's (OCEH) mission is to protect children from environmental health risks. Since children's bodies and organs are still developing, they are especially susceptible to adverse health effects related to contaminants in the air, water, food and soil.

As part of their mission, OCEH works to develop and implement practical ways to reduce children's exposure to environmental pollutants. They make an effort to identify and help remediate pollutants that put children most at risk and provide information on pollution-specific issues for families, teachers, day care providers and other concerned individuals.

OCEH's Core strategy is CARE:

CARE stands for Coordination, Assessment, Reduction, and Education

OCEH aims to create a cleaner, safer, healthier environment for our children. The CARE strategy involves developing programs and providing tools that address specific types of environmental concerns. Such no-cost programs enable caregivers, educators and parents to mitigate public health risk and take environmentally responsible actions that safeguard children.

OCEH Program's Include:

- [School Air Quality Flag Program >](#)
- [School Idle Reduction Program >](#)
- [Green Schools >](#)

CONTACT

Program Coordinator
602-771-2231
[Email >](#)

SEE MORE

- [School Air Quality Flag Program >](#)
- [School Vehicle Idling Reduction >](#)
- [Green Schools >](#)
- [Environmental Health Risk For Children >](#)

ADDITIONAL RESOURCES

- [Arizona Asthma Coalition >](#)
- [EPA - Asthma >](#)
- [EPA - Healthy Schools, Healthy Kids >](#)

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Air Quality Flag Program

Revised on: January 8, 2018 - 2:36pm

The Air Quality Flag Program is a great way to teach people about local outdoor air quality conditions, how air pollution impacts health, actions we can take to protect ourselves and ways to reduce polluting activities. Available to schools, community health centers, fire departments, parks and recreation centers, environmental education centers, and after-school/early-childcare facilities in Maricopa, Pinal, Yuma and Santa Cruz counties, the program uses different colored flags to notify the public of air quality conditions based on the Environmental Protection Agency's (EPA) Air Quality Index (AQI).

What Do The Flag Colors Mean?

Flags are posted at participating schools and/or community organizations in areas visible to the public. The flags match AQI's warning level colors, indicating the amount of pollution in the air and any possible associated health effects experienced within a few hours or days after breathing polluted air. ADEQ and some local districts calculate the AQI for four major air pollutants regulated by the Clean Air Act: ground-level ozone, PM₁₀, PM_{2.5} and carbon monoxide. For each of these pollutants, the EPA has established National Air Quality Standards to protect public health. If a warning is issued, the flag's purpose is to protect the greater at-risk population.

Green — *Air quality is good.*

Yellow — *Air quality is acceptable, but there might be health concerns for some of the population.*

Orange — *Air quality is unhealthy for sensitive groups, including people with lung or cardiac disease, children, outdoor athletes and older adults.*

Red — *Air quality is unhealthy. Everybody may begin to feel some health effects. Outdoor activity should be limited for all children, and sensitive individuals should stay indoors.*

Want to start a Flag Program at your school or community organization ? | [Learn How >](#)

CONTACT INFORMATION

Program Coordinator
602-771-2231
[Email >](#)

SEE MORE

- [What is Today's Air Quality? >](#)
- [AQ Flag Program >](#)
- [AQ Flag Program FAQs >](#)
- [Flag Colors & Recommended Activity >](#)
- [Flag Program Fact Sheet | En español >](#)
- [Flag Program Handbook >](#)

RESOURCES FOR SCHOOLS

- [Start A Flag Program At Your School >](#)
- [Flag Program Poster >](#)
- [Flag Info Letter to Parents | En español >](#)
- [Outdoor Activity Guide | En español >](#)
- [Air Quality Activities For Teachers >](#)
- [Air Quality Online Curriculum \(Grades K-6\) >](#)
- [Build an Air Quality Monitor \(Grades 7 - 12\) >](#)
- [Pima County Air Quality Curriculum >](#)
- [Maricopa County Air Quality Curriculum >](#)
- [PM10 Pollution & Childhood Asthma >](#)

ADDITIONAL RESOURCES

- [Air Quality Index Guide >](#)
- [Air Quality Index Calculator >](#)
- [PM10 Pollution & Asthma in Children >](#)
- [Children's Health Study >](#)
- [EPA Flag Program >](#)
- [Pinal County Flag Program >](#)
- [Maricopa County Air Quality App >](#)
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Flag Colors and Recommended Activity

Revised on: January 20, 2017 - 6:25pm

Green — Great day to be active outside!

Yellow — Good day to be active outside. Students who are unusually sensitive to air pollution could experience symptoms. If symptoms occur, the student may need to take a break, participate in less intense activities, stop all activity, go indoors or use quick-relief medicine as prescribed. If symptoms don't improve, get medical help.

Orange — It's okay to be active outside, especially for short activities such as recess and physical education or less intense activities. For longer activities, such as sports games, take more breaks. Watch for symptoms and take action as needed. If symptoms occur, the student may need to take a break, participate in a less intense activity, stop all activity, go indoors or use quick-relief medicine as prescribed. If symptoms don't improve, get medical help. Students with asthma should follow their asthma action plans and keep their quick-relief medicine handy.

Red — For all outdoor activities, take more breaks and participate in less intense activities. Consider moving longer or more intense activities indoors or rescheduling them to another day or time. Watch for symptoms and take action as needed. If symptoms occur, the student may need to take a break, participate in a less intense activity, stop all activity, go indoors or use quick-relief medicine as prescribed. If symptoms don't improve, get medical help. Students with asthma should follow their asthma action plans and keep their quick-relief medicine handy.

CONTACT INFORMATION

Program Coordinator
 602-771-2231
[Email >](#)

RESOURCES FOR SCHOOLS

- [Start A Flag Program At Your School >](#)
- [Flag Program Poster >](#)
- [Flag Info Letter to Parents | En español >](#)
- [Outdoor Activity Guide | En español >](#)
- [Air Quality Activities For Teachers >](#)
- [Air Quality Online Curriculum \(Grades K-6\) >](#)
- [Build an Air Quality Monitor \(Grades 7-12\) >](#)
- [Pima County Air Quality Curriculum >](#)
- [Maricopa County Air Quality Curriculum >](#)
- [PM10 Pollution & Childhood Asthma >](#)

ADDITIONAL RESOURCES

- [Air Quality Index Guide >](#)
- [Air Quality Index Calculator >](#)
- [PM10 Pollution & Asthma in Children >](#)
- [Children's Health Study >](#)
- [EPA Flag Program >](#)
- [Pinal County Flag Program >](#)
- [Maricopa County Air Quality App >](#)
- [Facebook Photo Gallery >](#)

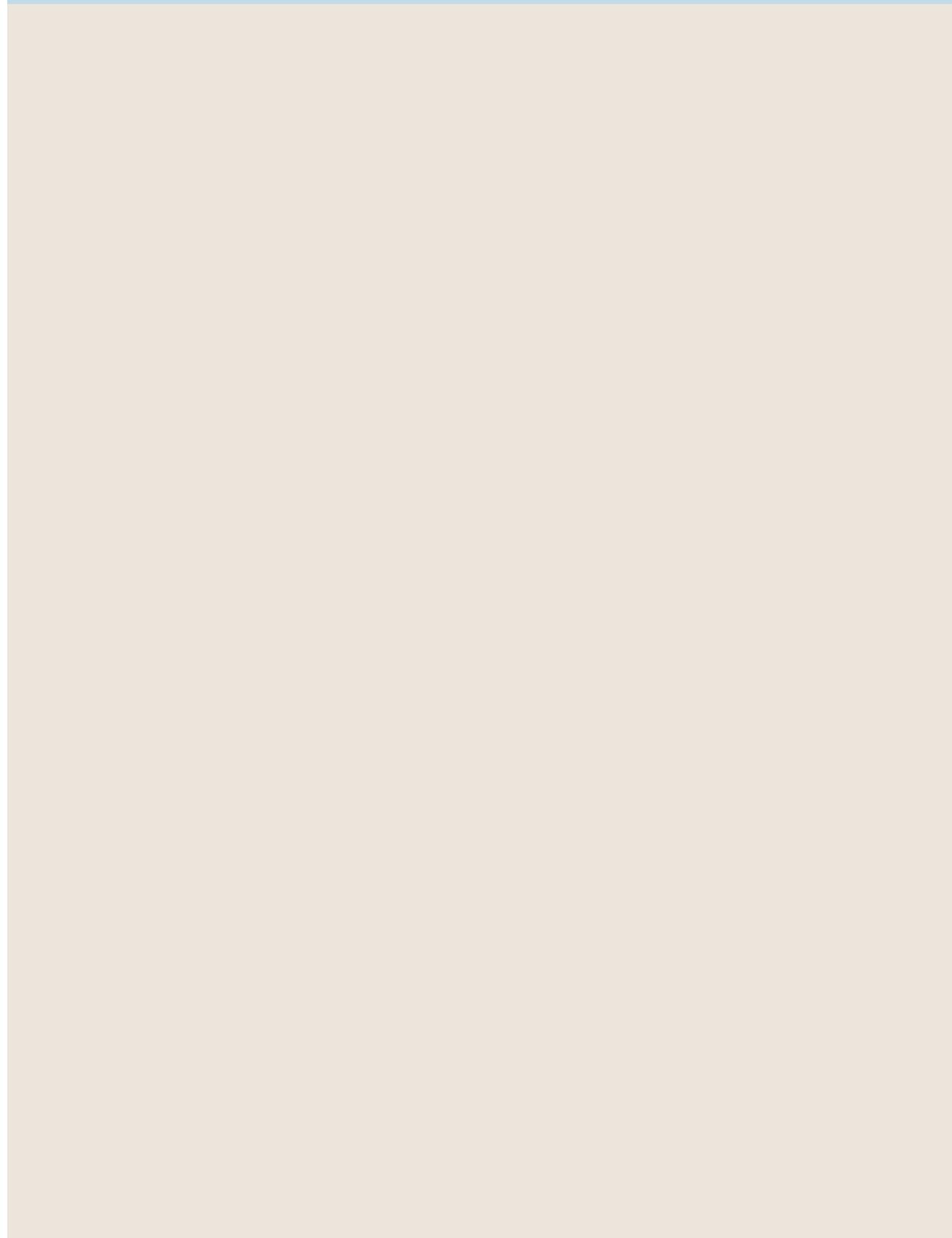
SEE MORE

- [What is Today's Air Quality? >](#)
- [AQ Flag Program >](#)
- [AQ Flag Program FAQs >](#)
- [Flag Colors & Recommended Activity >](#)
- [Flag Program Fact Sheet | En español >](#)
- [Flag Program Handbook >](#)

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SEARCH DATABASES 	COMPLAINT FORM 	COMPLIANCE ASSISTANCE 	FORMS 	PERMIT APPLICATION STATUS 	MEDIA/PRESS RELEASES 	PUBLIC NOTICES 	LAW & RULE
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Select Language



Air Quality Flag Program

WHAT IS THE ADEQ AIR QUALITY FLAG PROGRAM?

The Air Quality Flag Program uses nautical-style flags, based on the Environmental Protection Agency's (EPA) Air Quality Index (AQI), to notify the public of air quality conditions. Flag programs have been successful in the Maricopa, Pima, Pinal, Yuma, and Santa Cruz Counties. The programs fly flags that match warning levels of the AQI.

WHY WAS THE FLAG PROGRAM DEVELOPED?

The purpose of this program is to create public awareness of outdoor air quality conditions so people can modify their behavior to reduce exposure to pollutants. Air quality affects how we live and breathe. Children (including teenagers) are at greater risk from air pollution because their lungs are still developing and they breathe more air per pound of body weight than adults. Chronic exposure to even moderate levels of pollutants may decrease lung function. Therefore, reducing exposure to outdoor air pollutants is a simple way to protect children.

WHAT IS THE AIR QUALITY INDEX?

The AQI tells you how polluted the air is and what associated health effects might be a concern for you. The AQI focuses on health effects you may experience within a few hours or days after breathing polluted air. ADEQ and some local districts calculate the AQI for four major air pollutants regulated by the Clean Air Act: ground-level ozone, PM 10, PM2.5 and carbon monoxide. For each of these pollutants, the EPA has established National Air Quality Standards to protect public health.

WHAT DO THE FLAG COLORS REPRESENT?

The flags represent different pollutants during different times of the year. From April through October, the flags will be for ozone. From October to March, the flags will be for particulate matter pollution. If a warning is issued for both ozone and particulates, the school will fly the flag that protects the greater at-risk population.

WHERE ARE THE FLAGS POSTED?

The flags will be posted at participating schools and/or community centers in an area visible to the public.

WHAT SHOULD I DO IF THE FLAG SHOWS THAT THE AIR QUALITY IS POOR?

If your child has asthma or other respiratory ailments, you should consult with the school nurse or the individual responsible for administering the Flag Program. The administrator or nurse will be able to provide you with the appropriate information so you may act accordingly to the air quality level.

ADEQ Contacts:



Julie Finke,
jac@azdeq.gov
602-771- 2231
or
toll free at
800-234- 5677
Ext. 771-2231

Hearing impaired persons call
ADEQ's TDD line: 602-771-4829



GREEN - the air quality is good.



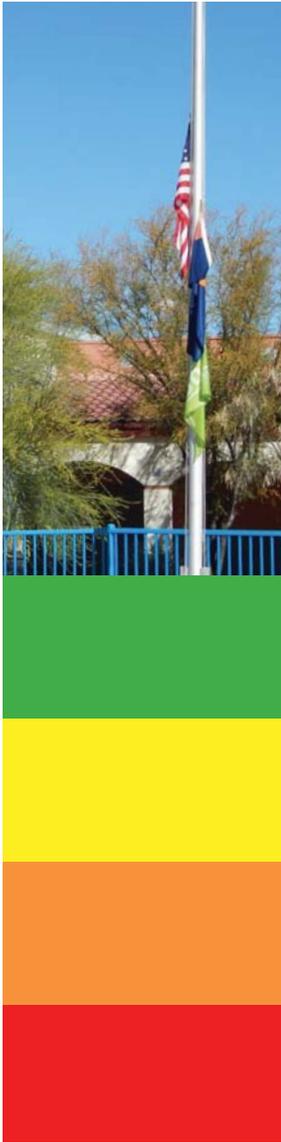
YELLOW - air quality is acceptable, but there might be some health concerns for some.



ORANGE - air quality is unhealthy for sensitive groups—people with lung or cardiac disease, children, outdoor athletes, and older adults.



RED - air quality is unhealthy. Everybody may begin to feel some health effects. Outdoor activity should be limited for all children and sensitive individuals should stay indoors.



Air Quality Flag Program Handbook

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How to Get Started

The School Flag Program uses brightly colored flags to help children, parents, school personnel, and the community be aware of daily air quality conditions. Knowing the air quality conditions can help protect individuals both at school and at home. The flag colors correspond to four of the colors used in the U.S. Environmental Protection Agency Air Quality Index (AQI), which forecasts how clean or polluted the air is for that day. Arizona only uses four colors because our current and historical air quality data have not reached the highest AQI levels.

When members of the school and the surrounding community know what the daily air quality is, they can adjust their activities to reduce their exposure to air pollution and can help people make decisions to minimize polluting activities. Regular physical activity, at least 60 minutes a day, promotes health and fitness. The purpose of a school flag program is to help children continue to exercise while protecting their health when the air quality is unhealthy.

A flag program can also be implemented by before and after school programs, during athletic activities at schools or parks and recreation facilities. ADEQ's Air Quality Flag Program is in place at schools, head start centers, businesses, and community health care facilities. Each day, participants raise a flag that corresponds to the local air quality forecast:



GREEN
- the air quality is good.



YELLOW

- air quality is acceptable, but there might be some health concerns for some.



ORANGE - air quality is unhealthy for sensitive groups – people with lung or cardiac disease, children including teenagers, after older adults add and those participating in lengthy and rigorous outdoor activities. Please follow the Outdoor Activity Guidance (p.14).



RED - air quality is unhealthy. Everybody may begin to feel some health effects. Outdoor activity should be limited for all children and sensitive individuals should stay indoors. Please follow the Outdoor Activity Guidance (p.14).



Air quality can become unhealthy due to pollutants such as ground-level ozone and particle pollution. Ozone is especially damaging to the lungs of children and those who work and play outside. Particle pollution – especially fine particles such as those found in smoke, haze or dust – contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems.

Children (including teenagers) are at greater risk from air pollution because their lungs are still developing and they breathe the more air per pound of body weight than adults. People with asthma are also more likely to have symptoms when pollution is in the air. Children, including those with asthma, can continue to stay active even when air quality is unhealthy by modifying their activities or, in some cases, moving their activities indoors.

The School Flag Program is a great way to teach people about their local air quality, how air pollution impacts our health, and what actions we can take to protect ourselves. You'll find more information about the School Flag Program, the AQI, ground-level ozone and particle pollution, and the health effects of air pollution in the Background Information and Resources sections of this handbook. This handbook describes the four steps a School Flag Program coordinator needs to take to implement a successful flag program.

Step 1: Request Flags from ADEQ

You will need four flags: green, yellow, orange, and red. ADEQ provides, flags, educational material and has developed an online toolkit at <http://www.azdeq.gov/air-quality-flag-program> which includes materials for outreach and a letter to parents and a press template. These can be adapted for your school's or organization's specific need. The ready-made flag program and online resources are provided to help you successfully launch and implement the ADEQ School Flag Program. ADEQ's Office of Children's Environmental Health offers additional training upon request.

Step 2: Educate and inform the school and the community at the start of the program

Choose a date to begin flying your flags then begin to educate and inform your school and the surrounding community. Some suggestions on when to start are Earth Day (April 22), however, the program is flexible and so easy to adapt that any date will do!

Train school personnel about the Air Quality Index and the Flag Program so they can help administer the program and teach the students. You can request help with this training from ADEQ's Air Quality Flag Program coordinator. Give all teachers a copy of the "Air Quality and Outdoor Activity Guidance for Schools" (p.16). It includes not only actions for each air quality color but also includes questions and answers that help explain the program. Encourage teachers to take advantage of the many resources available on ADEQ's School Flag Program website at: <http://www.azdeq.gov/air-quality-flag-program>

You can also visit the Environmental Protection Agency's Air Now interactive school flag program webpage at www.airnow.gov/schoolflag.

Some of the resources available include:

- a children's picture book
- interactive games
- lesson plans about air quality
- an air quality simulator
- asthma resources for schools

Make announcements to the school community through newsletters, emails, flyers, and other communication routes. You can also notify members of the larger community through a local newspaper, newsletter, or radio station. Here is an example of a newsletter announcement:

New Flag Program

How much pollution is in the air outside today? Soon, our entire school community will have a simple way to find out....just look up!

Starting [insert date], we'll be flying a brightly colored flag below our American and Arizona flags that will show how clean or polluted the air is. This new flag program will help us continue to promote exercise while protecting health.

Each colored flag corresponds to an air quality level:

GREEN – good air quality

YELLOW – moderate air quality

ORANGE – unhealthy for sensitive groups, including all children and those with asthma or other respiratory issues

RED – unhealthy for everyone

On green and yellow days, teachers and coaches will encourage students to get outside and get moving! When air quality is orange or red, it is still OK to play outside, but we will encourage kids to take breaks and cut back on activities that involve lots of running. In addition to helping us plan for exercise, the flags will help students and staff with asthma get to know whether their symptoms get worse when air quality is poor and whether they need to take extra steps to protect their health.

The flag program is used in many U.S. cities and we're proud to adopt it. In addition to the new flags, we will have in-class activities [include when] to learn more about air pollution, how it affects us, and what we can do to make the air cleaner.

We will post more information about this exciting new program and our [date] flag raising event on our school website.

Step 3: Find out the daily air quality forecast and fly the corresponding flag

Like the weather, air quality changes from day to day. Visit ADEQ's website to check the daily forecast at:
<http://www.azdeq.gov/programs/air-quality-programs/air-quality-forecasting>

You can also subscribe to receive the daily forecast by email or by receiving text messages at:
<https://public.govdelivery.com/accounts/AZDEQ/subscriber/new>.

The daily air quality forecast predicts the AQI color for both ozone and particle pollution. The forecast appears shortly after noon and predicts the air quality for the next day.

In this example, "Today's High" is forecast to be orange (unhealthy for sensitive groups) so the orange flag should be flown to reflect this. "Tomorrow's High" is forecast to be yellow (moderate) so the yellow flag should be flown. The "Pollutant Details" tell you the specific pollutant that is driving the forecast. For the current day, particles PM-10 is the pollutant that is causing the air quality color to be orange.

FORECAST DATE	YESTERDAY SUN 04/07/2013	TODAY MON 04/08/2013	TOMORROW TUE 04/09/2013	EXTENDED WED 04/10/2013
NOTICES (*SEE BELOW FOR DETAILS)	NONE	PM-10 HIGH POLLUTION ADVISORY NWS WIND ADVISORY NWS BLOWING DUST ADVISORY	PM-10 HEALTH WATCH	NONE
AIR POLLUTANT	Highest AQI Reading/Site (Preliminary data only)			
O3*	64 BLUE POINT & TONTO NAT'L MON	58 MODERATE	45 GOOD	48 GOOD
CO*	09 PHOENIX SUPERNITE	06 GOOD	07 GOOD	07 GOOD
PM-10*	38 CENTRAL PHOENIX	142 UNHEALTHY FOR SENSITIVE GROUPS	90 MODERATE	53 MODERATE
PM-2.5*	34 DURANGO	74 MODERATE	52 MODERATE	37 GOOD

* O3 = Ozone CO = Carbon Monoxide PM₁₀ = Particles 10 microns & smaller PM_{2.5} = Particles smaller than 2.5 microns

This Air Quality Forecast example shows the severity and pollutants for that particular day which determines the color of the flag that needs to be used.



Each morning, assign someone at your school to raise the flag that shows the current day's AQI color. It is a key for the assigned person to check the air quality forecast in the morning before the flag is raised. ADEQ and local air quality agencies will update the current day's forecast by noon to a different color if pollution is worse than originally expected. If you subscribe to emails, you can choose to be notified via email of forecast updates at <https://public.govdelivery.com/accounts/AZDEQ/subscriber/new>.

Fly only the flag showing the current day's forecast. For example, if you receive tomorrow's forecast in the late afternoon, do not change the flag to show tomorrow's color.

Some ideas to involve students and teachers in the flag program:

- Encourage everyone with an email account to sign up for ADEQ's Daily Air Quality Forecast area.
- Establish student teams to be in charge of checking the forecast and raising the flag each morning.
- Have each classroom teacher assign a rotating student to post the day's air quality color in the classroom and learn more about the science of air quality and what they can do to improve air quality.
- Add a message about the day's air quality color to the daily announcements and announcements.
- Get the current AQI forecast link added to your school's website.

Step 4: Know what actions to take when the air quality is unhealthy

General Actions When Ozone or Particle Pollution Levels are Unhealthy

Ozone and particle pollution are the most widespread air pollutants. When either ozone or particle pollution is at an unhealthy level, the chances of being affected increase the longer a person is active outdoors and the more strenuous the activity. Since exercise is good for your health, it's important to stay active and know when to make changes. Children (including teenagers) and those with asthma are two groups EPA considers "sensitive" because they have more health effects at lower pollution levels.

Actions:

As either ozone or particle pollution levels become unhealthy, the general advice is to reduce: (1) how hard you exercise, and (2) the length of time you exercise. For example, on code orange days, it is still acceptable for children to play outside, but they should reduce activities that involve running and take more frequent breaks.

Sensitive groups, including children and people with asthma, should start taking it easier at code orange alert levels. When either ozone or particle pollution is in the air, adults and children with asthma are more likely to have symptoms such as coughing or shortness of breath. Be alert for symptoms and follow the child's asthma action plan. If a child has a quick relief inhaler, be sure it is always handy. Note that even students who do not have asthma could experience symptoms when exposed to unhealthy levels of air pollution.

Specific Actions When Ozone Pollution is at an Unhealthy Level

Ozone is formed when pollutants emitted by industrial facilities and power plants, motor vehicle exhaust, and other sources react in the presence of heat and sunlight. Since heat and sunlight drive ozone formation, warm sunny days have more ozone than cool or cloudy days. Ozone levels are generally much lower in the mornings.

Actions:

- When unhealthy levels of ozone are expected, you can reduce exposure by playing and exercising outdoors before noon.
- For specific guidance on what action to take for each flag color, refer to the Quality and Outdoor Activity Guidance for Schools.



Specific Actions to Reduce Exposure to Particle Pollution

In some locations (such as the western United States) where wood is burned for heat, particle pollution levels can be especially high during wintertime inversions. An inversion occurs when a layer of cooler air is trapped near the ground by a layer of warmer air above. When the air cannot rise, pollution at the surface is trapped and can accumulate, leading to higher pollutant concentrations. A variety of conditions can cause inversions to form. The most common is a nighttime inversion, when cloudless skies allow air at the surface to cool faster than the air above.

Actions:

- Choose areas away from busy streets for children to walk, exercise and play.
- Make sure children avoid standing or playing near vehicles that are idling.
- Implement policies and education programs to limit idling by school buses, delivery vehicles and personal vehicles (parent drop off/pickup) on school grounds.
- Limit outdoor activity when there is smoke in the air.
- Do not burn wood on No Burn days.
- Eliminate the use of leaf blowers and gasoline powered equipment during health alerts and high pollution days.

Use Your Judgment

Based on the recommended actions listed here and the chart provided on the last page of this handbook, school staff should use their judgment to decide how to modify planned outdoor activities when air quality is unhealthy. This should take into account the flag color, the intensity of the activity and the length of time involved.



Additional Information & Resources



What is Ozone?

Ozone is a colorless gas found in the air we breathe. Naturally occurring ozone high above the earth's surface protects our planet from solar radiation. When ozone is created near the ground it is unhealthy to breathe and can also damage trees and crops.

Ozone is created at ground level by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Emissions from industrial facilities and power plants, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NOx and VOC. Because ground-level ozone needs sunlight to form, it is usually highest during the hot, sunny days of summer, spring, and fall.

Within the last decade, however, high ozone concentrations have also been observed under specific circumstances in cold months. Specifically, there are a few high elevation areas in the Western U.S. where high levels of local VOC and NOx emissions have formed ozone when snow is on the ground and temperatures are near or below freezing. Ozone contributes to what we typically experience as "smog" or haze, which still occurs most frequently in the summertime, but can occur throughout the year in some southern and mountain regions.

Health Effects of Ground-level Ozone

- Constriction of airways forcing the respiratory system to work harder to provide oxygen
- Coughing, pain when taking a deep breath, wheezing and inflammation of the airways including the deep portions of the lungs
- Increased fatigue
- Reduced athletic performance
- Aggravated lung disease

For ozone, people with lung disease, children, older adults, and people who are active outdoors are considered sensitive and therefore at greater risk.

What is Particle Pollution?

Particles in the air are a mixture of solids and liquid droplets that vary in size and are often referred to as "particulate matter." Some particles - those less than 10 micrometers in diameter - pose the greatest health concern because they can pass through the nose and throat and get deep into the lungs. Ten micrometers in diameter is just a fraction of the diameter of a single human hair. Particles larger than 10 micrometers do not usually

reach your lungs, but they can irritate your eyes, nose and throat. Particle pollution, unlike ground-level ozone, can occur year-round.

Very small particles with diameters less than 2.5 micrometers are called “fine” particles. They are produced any time fuels such as coal, oil, diesel or wood are burned. Fine particles come from fuel used in everything from power plants to wood stoves and motor vehicles (e.g., cars, trucks, buses and marine engines). These particles are also produced by construction equipment, agricultural burning, trash and brush burning, and forest fires. In fact, forest fires (wildfires) are responsible for some of the worst particle pollution events.

“Coarse” dust particles range in size from 2.5 to 10 micrometers in diameter. Particles of this size are produced during crushing or grinding and from vehicles traveling on paved or unpaved roads.

Health Effects of Particle Pollution

- Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing
- Decreased lung function
- Aggravated asthma
- Development of chronic bronchitis
- Irregular heartbeat
- Heart attacks
- Premature death in people with heart or lung disease

For particle pollution, people with heart or lung disease, older adults, and children are considered sensitive and therefore at greater risk.

What is the Air Quality Index (AQI)?

The Air Quality Index (AQI) is an index for reporting daily air quality. It tells you how clean or polluted your air is, and what associated health effects might be a concern for you. The AQI focuses on health effects you may experience within a few hours or days after breathing polluted air.



How Does the AQI Work?

The higher the AQI value, the greater the level of air pollution and the greater the health concern. For example, an AQI level of 50 represents good air quality with little potential to affect public health, while an AQI value over 201 represents very unhealthy air quality.

An AQI value of 100 generally corresponds to the National Ambient Air Quality Standard (NAAQS) for the pollutant, which is the level EPA has set to protect public health. AQI values below 100 are generally thought of as satisfactory. When AQI levels are above 100, air quality is considered to be unhealthy – at first for certain sensitive groups of people, then for everyone as AQI values get higher.

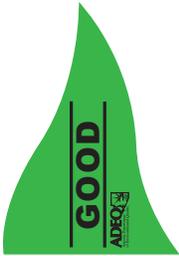
The purpose of the AQI is to help you understand what local air quality means to your health. To make it easier to understand, the AQI is divided into categories. Each category corresponds to a different level of health concern. The levels of health concern and what they mean are:

Air Quality Index (AQI) Values	Levels of Health Concern	Colors
When the AQI is in this range:	... air quality conditions are:	... as symbolized by this color:
0 – 50	GOOD	Green
51 – 100	MODERATE	Yellow
101 – 150	UNHEALTHY for Sensitive Groups	Orange
151 – 200	UNHEALTHY	Red
201 – 300	VERY UNHEALTHY	Purple
... meaning		
Air quality is considered satisfactory, and air pollution poses little or no risk.		
Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.		
Members of sensitive groups may experience health effects. The general public is not likely to be affected.		
Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.		
Health alert: everyone may experience more serious health effects.		

Air Quality and Outdoor Activity Guidance for Schools

Regular physical activity promotes health and fitness. CDC recommends that children get 60 or more minutes of physical activity each day. www.cdc.gov/healthyyouth/physicalactivity/guidelines.htm

The table below shows when and how to modify outdoor physical activity based on the Air Quality Index. This guidance can help protect the health of all children, including teenagers, who are more sensitive than adults to air pollution. Check the air quality daily at: <http://www.azdeq.gov/programs/air-quality-programs/air-forecasting>.

Air Quality Index	
	Great day to be active outside!
	Good day to be active outside! Students who are unusually sensitive to air pollution could have symptoms, so watch for coughing or shortness of breath. These are signs to take it easier.
	It's OK for students to be active outside, especially for short activities such as recess and physical education (PE) class. For longer activities such as athletic practice, students should take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath. Students with asthma should follow their asthma action plans and keep their quick relief medicine handy.
	For all outdoor activities, students should take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath. Consider moving activities indoors or rescheduling. Students with asthma should follow their asthma action plans and keep their quick relief medicine handy.

Frequently Asked Questions

How long can students stay outside when the air quality is unhealthy?

There is no exact amount of time. The worse the air quality, the more important it is to take breaks, do less intense activities, and watch for symptoms. Remember that students with asthma will be more sensitive to unhealthy air.

Why should students take breaks and do less intense activities when air quality is unhealthy?

Students breathe harder when they are active for a longer period of time or when they do more intense activities. More pollution enters the lungs when a person is breathing harder. It helps to:

- reduce the amount of time students are breathing hard (e.g., take breaks; rotate players frequently)
- reduce the intensity of activities so students are not breathing so hard (e.g., walk instead of run)

Are there times when air pollution is expected to be worse?

Ozone pollution is often worse on hot sunny days, especially during the afternoon and early evening. Plan outdoor activities in the morning, when air quality is better and it is not as hot.

Particle pollution can be high any time of day. Since vehicle exhaust contains particle pollution, limit activity near idling cars and buses and near busy roads, especially during rush hours. Also, limit outdoor activity when there is smoke in the air.

How can I find out the daily air quality?

Go to www.azdeq.gov. Many cities have an Air Quality Index (AQI) forecast that tells you what the local air quality will be later today or tomorrow, and a current AQI that tells you what the local air quality is now. The ADEQ forecast also tells you whether the pollutant of concern is ozone or particle pollution. To learn more about Arizona's ADEQ's Air Quality Flag Program please visit <http://www.azdeq.gov/air-quality-flag-program>.

If students stay inside because of unhealthy outdoor air quality, can they still be active?

It depends on which pollutant is causing the problem:

Ozone pollution: If windows are closed, the amount of ozone should be much lower indoors, so it is OK to keep students moving.

Particle pollution: If the building has a forced air heating or cooling system that filters out particles then the amount of particle pollution should be lower indoors, and it is OK to keep students moving. It is important that the particle filtration system is installed properly and well maintained.

What physical activities can students do inside?

Encourage indoor activities that keep all students moving. Plan activities that include aerobic exercise as well as muscle and bone strengthening components (e.g., jumping, skipping, sit-ups, pushups). If a gymnasium or open space is accessible, promote activities that use equipment, such as cones, hula hoops, and sports balls. If restricted to the classroom, encourage students to come up with fun ways to get everyone moving (e.g., act out action words from a story). Teachers and recess supervisors can work with physical education teachers to identify additional indoor activities.

What is an asthma action plan?

An asthma action plan is a written plan developed with a student's doctor for daily management of asthma. It includes medication plans, control of triggers, and how to recognize and manage worsening asthma symptoms. See www.cdc.gov/asthma/actionplan.html for a link to sample asthma action plans. When asthma is well managed and well controlled, students should be able to participate fully in all activities.

For a booklet on "Asthma and Physical Activity in the School," see <http://bit.ly/activewithasthma>.

Additional Tips

For a list of additional resources, visit www.airnow.gov/schoolflag and choose "Teacher, Student and School Resources." The links include lesson plans, student pages, interactive games, asthma resources for schools, and further information on pollutants and health effects.

What is an asthma action plan?

Air pollution can make asthma symptoms worse and trigger attacks. Symptoms of asthma include coughing, shortness of breath, wheezing, and chest tightness. Even students who do not have asthma could experience these symptoms when exposed to unhealthy levels of air pollution.

Plan Ahead for Ozone

There is less ozone in the morning. On days when ozone is expected to be at unhealthy levels, plan outdoor activities in the morning.

Daily Air Pollution Forecast

The heart of the program is the daily air pollution forecast. By 1p.m. Sunday through Friday, ADEQ's meteorologists prepare individualized air pollution forecasts for the pollutants of concern in nonattainment areas in Maricopa, Santa Cruz and Yuma counties. Forecasted air pollution concentrations are expressed consistently with the color-coded AQI, so that recipients know whether air quality will be good, moderate, or unhealthy for sensitive people.

If concentrations are predicted to be close to or exceed health-based standards, ADEQ issues high pollution advisories or health watches that are announced through email subscriptions, press releases and social media (Facebook and Twitter).

With this information, flag program participants know which flag color to raise to indicate the expected air pollution level. By comparing the colored flags to the AQI using the outdoor activity guide and educating the community, teachers, school nurses, coaches and parents will know what actions to take to protect their students' health and learn to take measures to control air pollution.

Strong partnerships have been crucial to the success of the program. ADEQ's Office of Children's Environmental Health coordinates the school and community flag program and provides the ADEQ daily forecast, program training, flags and outreach materials at no cost.

Through its Clean Air Make More campaign, the Maricopa County Air Quality Department promotes business participation in its fee-based program by providing flags, ADEQ daily forecasts, and supporting materials.

The Pinal County Air Quality Department prepares and distributes its own forecast and has implemented the program at more than 50 schools and education-related facilities.

In Santa Cruz County, the Mariposa Community Health Center coordinates local outreach with flags, forecasts and training from ADEQ.

The Yuma County Health and Wellness Coalition implements the program and trains local participants with forecasts, education materials, sets of flags and guidance from ADEQ. Flag participants include three health community centers, Gadsden School District schools, Chicanos Por La Causa Head Start Centers, Desert View Academy and Carver Elementary. Contact Laura Aviles, Program Coordinator at (928) 317-4580 ext. 1663 for more information.

Helpful Links:

ADEQ Daily Air Pollution Forecast

<http://www.azdeq.gov/programs/air-quality-programs/air-forecasting>

Maricopa County's Initiative to Promote Cleaner Air and Healthier Lives
<http://cleanairmakemore.com>

Pinal County Air Quality Department

<http://www.pinalcountyz.gov/airquality/Pages/home.aspx>

Mariposa Community Health Center

<http://www.mariposachc.net/>

Thank you for being a School Flag Program Coordinator. We hope that you find this handbook helpful. Questions and comments about Arizona Department of Environmental Quality (ADEQ) Flag Program should be directed to ADEQ's State Flag Program Coordinator, Julie Finke at jac@azdeq.gov or by calling 602-771-2231.



Arizona Department of Environmental Quality
Office of Children's Environmental Health
1110 W. Washington St. • Phoenix, AZ 85007

CLEAN AIR MAKE MORE

MARICOPA COUNTY'S INITIATIVE TO PROMOTE CLEANER AIR AND HEALTHIER LIVES



[Our Air](#) [Make the Commitment](#) [News & Events](#) [Classroom](#) [Tools/Downloads](#) [About Us](#)

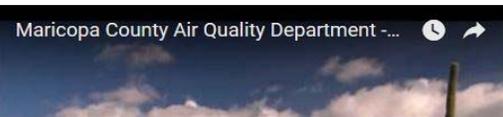


A Pollution Advisory is in effect for Maricopa County.

[View more tips](#) or [Make the Commitment](#) today!

 AIR QUALITY UNHEALTHY FOR SENSITIVE GROUPS	 WOOD BURNING	 LEAF BLOWING	 OFF-HIGHWAY VEHICLES	TODAY Clear 107° High 87° Low Winds blowing NE at 6 MPH	 TOMORROW HIGH POLLUTION ADVISORY for tomorrow 07/20/18, limit outdoor activity.	 Share
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Our Air and How to Keep it Clean



The Effects

What are the effects of air pollution? Maricopa County and the U.S. Environmental Protection Agency have designated six criteria pollutants, but particulate matter (PM) and ozone are the Valley's

100%

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There is one thing that everyone who lives and visits Maricopa County has in common. We all breathe air. The average adult takes about 15 breaths per minute, inhaling nearly two gallons of air. With 21,600 breaths per day that equals 2,880 gallons of air each day.

Maricopa County Air Quality Department is asking everyone to help keep our air clean and our residents healthy. Watch the video to learn what you can do to help take care of our air.

[Learn More >](#)

The Effects

Agency have designated six criteria pollutants, but particulate matter (PM) and ozone are the Valley's toughest to battle. [Learn More >](#)



The Offenders

Human activity is behind most of our top air pollution causes, but there is a way to clean our air. There are plenty of easy changes each of us can commit to do to stop polluting. [Learn More >](#)



Restrictions

Find out what restrictions, if any, are prohibited based on the current air quality status in Maricopa County. Depending on the status of air quality, restrictions will change, so be sure to take note of the differences. [Learn More >](#)

Make the Commitment

[Download the App](#)

[Sign Up for Alerts](#)

[Commit to One Day](#)

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Make the Commitment

Download the App



Download the Clean Air Make More App for iPhone, iPad and Android and receive real-time air quality information and information for reducing air pollution.

[Get the App >](#)

Sign Up for Alerts



Get email and text alerts for High Pollution Advisories, Health Watches and other Maricopa County clean air updates.

<input type="text" value="Your email address..."/>	<input type="button" value="Submit"/>
<input type="text" value="Your mobile number..."/>	<input type="button" value="Submit"/>

Commit to One Day



Make a significant impact on the level of air pollution in Maricopa County and contribute to clean air all week long with these simple, daily actions.

[Learn More >](#)

Support Air Quality Awareness

100%

CLEAN AIR MAKE MORE

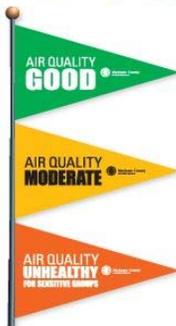
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Support Air Quality Awareness

Air Quality Flag Program



In an effort to raise Maricopa County and metropolitan Phoenix air quality awareness and encourage behavior modification based on air quality conditions, Maricopa County Air Quality Department has initiated an Air Quality Awareness "Flag" Program to increase public and business community recognition of the Air Quality Index rating system. The intent is to highlight the need to take responsible measures to control air pollution during periods when Metropolitan Phoenix air quality is degraded.

[Learn More >](#)

Upcoming Events

Sorry, there are no events currently scheduled...

[All Events >](#)

100%



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- [Our Air](#)
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Metropolitan Phoenix air quality is degraded.

[Learn More >](#)

[All Events >](#)

About Clean Air Make More

Clean Air Make More is an educational outreach initiative created to inform Maricopa County residents about air pollution challenges we face in the county and provide them with the tools they need to take action. Created by the Maricopa County Air Quality Department and funded through fines collected from air quality violations, the primary focus of Clean Air Make More is to reduce the number of days this region exceeds the federal health standard for air pollution. This site will provide you with information on the air quality forecast, current restrictions, no burn day restrictions, air quality news, upcoming events and ways to reduce air pollution. To learn more or download the Clean Air Make More App visit www.CleanAirMakeMore.com/app.

Essential Information

- ▶ [About Our Air](#)
- ▶ [Download the App](#)
- ▶ [Sign Up for Alerts](#)
- ▶ [Report a Violation](#)
- ▶ [Press & Media](#)
- ▶ [Maricopa County Air Quality Department](#)

Connect with Us

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- [Subscribe - Email](#)
- [ShareThis](#)



Appendix F - Education Programs - Rillito

Air Quality Guide for Particle Pollution

PollutionHarmful particle pollution is one of our nation’s most common air pollutants. Use the chart below to help reduce your exposure and protect your health. For your local air quality forecast, visit <http://www.azdeq.gov/programs/air-quality-programs/air-forecasting>.

Air Quality Index	Who Needs to be Concerned?	What Should I do?
Good (0-50)		It’s a great day to be active outside!
Moderate (51-100)	Some people who may be unusually sensitive to particle pollution.	<p>Unusually sensitive people: Consider reducing prolonged or heavy outdoor exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.</p> <p>Everyone else: It’s a good day to be active outside.</p>
Unhealthy for Sensitive Groups (101-150)	Sensitive groups include people with heart or lung disease, older adults, children and teenagers.	<p>Sensitive groups: Reduce prolonged or heavy exertion. It’s OK to be active outside, but take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath.</p> <p>People with asthma should follow their asthma action plans and keep quick- relief medicine handy.</p> <p>If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.</p>
Unhealthy (151-200)	Everyone	<p>Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling.</p> <p>Everyone else: Reduce prolonged or heavy outdoor exertion. prolonged or heavy exertion. Take more breaks during outdoor activities.</p>

Key Facts to Know About Particle Pollution:

- Particle pollution can cause serious health problems – including asthma attacks, heart attacks, strokes and early death.
- Particle pollution can be a problem at any time of the year, depending on where you live.
- You can reduce your exposure to ozone and still get exercise! Use the Daily Air Quality Forecasts at <http://www.azdeq.gov/programs/air-quality-programs/air-forecasting> to plan your activity.

What is particle pollution?

Particle pollution comes from many different sources. Fine particles (2.5 micrometers in diameter and smaller) come from power plants, industrial processes, vehicle tailpipes, woodstoves, and wildfires. Coarse particles (between 2.5 and 10 micrometers) come from crushing and grinding operations, road dust, and some agricultural operations.

Why is particle pollution a problem?

Particle pollution is linked to a number of health problems, including coughing, wheezing, reduced lung function, asthma attacks, heart attacks and strokes. It also is linked to early death.

Do I need to be concerned?

While it's always smart to pay attention to air quality where you live, **some people may be at greater risk from particle pollution.** They include:

- People with cardiovascular disease (diseases of the heart and blood vessels)
- People with lung disease, including asthma and COPD
- Children and teenagers
- Older adults

- Research indicates that obesity or diabetes may increase risk.
- New or expectant mothers may also want to take precautions to protect the health of their babies.

How can I protect myself?

Use AQI forecasts to plan outdoor activities. On days when the AQI forecast is unhealthy, take simple steps to reduce your exposure:

- Choose a less-strenuous activity
- Shorten your outdoor activities
- Reschedule activities
- Spend less time near busy roads

When particle levels are high outdoors, they can be high indoors – unless the building has a good filtration system.

Keep particles lower indoors by:

- Eliminate tobacco smoke
- Reduce your use of wood stoves and fireplaces
- Use HEPA air filters and air cleaners designed to reduce particles
- Don't burn candles

Can I help reduce particle pollution?

Yes! Here are a few tips:

- Drive less: carpool, use public transportation, bike or walk
- Choose ENERGY STAR appliances
- Don't burn leaves, garbage, plastic or rubber. Keep car, boat and other engines tuned



Air

Pima County Department of Environmental Quality (PDEQ) has [regulatory authority](#) for air quality within Pima County including municipalities as an Air Quality Control District, with the exception of the Tohono O'Odham, Pasqua Yaqui and San Xavier Indian Reservations established pursuant to applicable provisions of the Arizona Revised Statutes (A.R.S.), Arizona Administrative Code (A.A.C.), Pima County Code (PCC), Federal Environmental Statutes, delegation from the U.S. Environmental Protection Agency (EPA) via the Clean Air Act, and by delegation from the Arizona Department of Environmental Quality (ADEQ). PDEQ regulates ambient outdoor air quality according to rules codified in [Title 17 of the Pima County Code](#), conducts [Air Quality Monitoring](#) and provides [Community Education](#) about air quality issues.

Pima County is currently in attainment of all EPA National Ambient Air Quality Standards.

Sources of Air Pollution Requiring Permits

PDEQ issues air quality operating permits to facilities known as Stationary Sources which may be any building, structure or installation subject to regulation which emits or may emit air pollution. These facilities must comply with the conditions in their operating permits to limit air pollution. The tab below for **Stationary Sources** includes information regarding **Operating Permits** and **Compliance Guidance** for these sources. Other sources of air pollution include **Fugitive Dust**, **Asbestos** and **Open Burning**, which are also regulated by PDEQ. Air quality regulations lay out the requirements and [process for the application and issuance of an air quality permit](#).



Find a Source and View its Permit

PDEQ maintains searchable tables of stationary sources within Pima County. These tables contain links to view, search and print each permit and other air quality stationary source, permit related documents. **Use the links below to view the tables.** Browser will open documents in a new window.

[Class I Permit Search](#) - [Class II Permit Search](#) - [Class III Permit Search](#)

Permits	Stationary Sources	Asbestos	Fugitive Dust	Open Burning	Air Quality	Em. Inventory
---------	--------------------	----------	---------------	--------------	-------------	---------------

Fugitive Dust

Fugitive dust is particulate matter which becomes airborne, is not emitted from a stack or vent, and has the potential to adversely affect human health or the environment. High levels of dust particles often originate from agricultural, mining, construction and manufacturing activities. PDEQ protects air quality by regulating fugitive dust emissions and inspecting dust-producing activities and sites.

More information on [Fugitive Dust](#) includes:

- [Fugitive dust activity permitting](#)
- [Fugitive dust rules](#)
- [Dust Palliative Guide](#)
- [Dust Palliative Resource List - 2017](#)
- [FAQs](#)
- [Additional information and training](#)
- [Report a dust complaint](#)



Information, Education, Public Outreach

PDEQ offers free environmentally-related presentations, information and tips for a variety of audiences including schools and youth groups, community groups, businesses, associations, agencies, and industries. We co-sponsor and attend [community events](#) and provide environmental information using hands-on exhibits to engage a wide variety of participants. PDEQ also operates the state-mandated [Clean Air Program](#), to improve air quality by increasing public awareness and encouraging community action to reduce air pollution. In addition, PDEQ initiates special programs or campaigns to highlight specific actions that can be taken to reduce vehicle emissions and improve air quality, such as the "[Use The Loop for Your Commute](#)" and the "[Healthy Air Is In Our Hands](#)" campaigns including a "[Drive-Less Pledge for Healthy Air](#)". In addition, there is the "[Pump Up Your MPG](#)" Tire Inflation Education Program which promotes monthly tire checks for improved air quality and reduced waste.



PDEQ works with local organizations to expand the reach of our programs and recently partnered with the Tucson Audubon Society and others to create the "[Desert Dwellers Know](#)" poster and coloring/activity book. The dramatic use of Byrd Baylor's poetry and beautiful images provides inspiration for ways to live gently in the Sonoran Desert.

The goal of PDEQ's Environmental Justice Program is equal and fair treatment of all residents and meaningful involvement of all regardless of race, color, national origin, or income with respect to environmental programs, laws and policies.

If you are looking for information from our department such as records on a specific property or records regarding the day-to-day operations of our Air, Water, Waste Programs, those can be obtained by making a public records request. Other types of general information requests regarding the environment and/or copies of forms, procedures, pamphlets, or other printed information designed for public distribution can be obtained by calling (520) 724-7446.

[Business](#)
[School & Youth](#)
[General Public](#)
[Environmental Justice](#)
[Public Records Request](#)
[FAQs](#)

General Public

Free presentations are available at neighborhood association and community group meetings regarding air quality, stormwater, pollution prevention and general eco issues. Visit our booth at various community events to discuss environmental concerns or learn more ways to be eco-friendly.

- [Air Quality Advisories](#)
- [Airville](#) 
- [Benefits of Driving Less](#)
- [Current Air Quality Information](#)
- [Clean Air Program Activities](#)
- [EcoKids](#)
- [EcoNook for Desert Dwellers and Eco Kids Corner Public Library and Community Center Resources](#) 
- [Health and Wellness Related to Air Pollution](#)
- [Little Green Riding Hood](#)
- [Presentations](#)
- [Public Service Announcements](#)
- [Reports and Publications](#)
- [Rules and Regulations](#)
- [Stormwater Information, Rules and Regulations](#)
- [Wildfire Smoke and Your Health](#) 
- ["Use The Loop for Your Commute" Campaign](#)
- [Vehicle Idle Reduction](#) 







Fugitive Dust

Fugitive dust is particulate matter which becomes airborne, is not emitted from a stack or vent, and has the potential to adversely affect human health or the environment. High levels of dust particles often originate from agricultural, mining, construction and manufacturing activities. PDEQ protects air quality by regulating fugitive dust emissions and inspecting dust-producing activities and sites. The Fugitive Dust Activity Permit Program ensures that those involved in activities likely to generate dust are aware of fugitive dust regulations and requires them to provide information regarding the location and types of dust-generating activities.

Who needs a Fugitive Dust Activity Permit?

Find out if your construction or other activity requires a Fugitive Dust Activity Permit by reviewing [Pre-Application Guidance](#).

How much does the permit cost?

Permit fees are based on the type and quantity of work conducted for each project, and can be determined from the [Fee Schedule](#).

How to apply for a Fugitive Dust Activity Permit

If your work requires a Fugitive Dust Activity Permit, you can apply for the permit online, in person, or by mail/fax. Payment may be cash, check or credit card. [Apply for a Fugitive Dust Activity Permit](#).

What are the Fugitive Dust Rules?

Even if you don't need a Fugitive Dust Activity Permit for your work, you still must maintain controls for dust during activities likely to create dust. Find out what your responsibilities are by reading the [Fugitive Dust Rules](#) contained in Pima County Code Title 17.

FAQs

Find answers to most [Frequently Asked Questions](#) concerning dust.

Additional Information & Training

Have more questions regarding specific situations, or want more detailed information on construction sites? PDEQ provides brochures and [Additional Information](#) on dust from vacant lands, off-highway vehicles, leaf blowers, dirt roads, sand blasting, concrete or brick cutting and other specific sources and training on opacity.

Report a Complaint

If you are observing excessive dust without controls, dust crossing property boundaries or other dust issues subject to Pima County Code Title 17, you may [File a Complaint](#) with PDEQ.



Additional Information & Training

Construction Activity

For more information and brochures for methods of dust control at construction sites:

- [Dust Control and Construction Activity](#)
- [Dust Control Methods \(English\)](#)
- [Dust Control Methods \(Spanish\)](#)
- [Dust Palliative Guide](#)
- [Dust Palliative Resource List](#)
- [Hauling Companies](#)

Find out what inspectors look for by checking the [Fugitive Dust Inspection Report](#) form. To obtain additional information, or to arrange for a presentation on dust control, please contact PDEQ at (520) 724-7400.

Training

Opacity Certification, also known as Smoke School, is the formal training required to determine the opacity of visible emissions, including fugitive dust. The test method to determine opacity is EPA Method 9, as provided in 40 CFR Appendix A. For more information about opacity:

- [EPA Emissions Measurement Center - Method 9 Test](#)
- [Visible Emission Observation Form](#)
- [The Arizona Smoke School](#)
- [California Air Resources Board](#)
- [Carl Koontz Associates](#)
- [AeroMet Engineering, Inc.](#)
- [Compliance Assurance Associates, Inc.](#)

Other Fugitive Dust Sources

Sources of fugitive dust which do not require a permit must also follow the dust rules in Pima County Code Title 17.

Homeowners
Vacant Land
OHV Use
Leaf Blowers
Dirt Roads
Sand Blasting
Concrete C

Homeowners may have sources of dust which include:

- Horse corrals
- Driveways and parking areas
- Home improvement projects
- Yard maintenance
- ATV Tracks

Title 17 of the Pima County Code, Section 17.16.070.A states in part, *"No person shall cause, suffer, allow, or permit a vacant lot, or an urban or suburban open area, to be driven over or used by motor vehicles, trucks, cars, cycles, bikes, or buggies, or by animals such as horses, without taking reasonable precautions to limit excessive amounts of particulates from becoming airborne."*

Homeowners need to ensure that these types of activities do not create excessive dust. Learn how [Homeowners](#) can control dust at home.



Pima County Department of Environmental Quality

33 North Stone Avenue, Suite 700
Tucson, AZ 85701
(520) 724-7400
www.pima.gov/deq

Board of Supervisors:

District 1 Ann Day
District 2 Ramón Valadez
District 3 Sharon Bronson
District 4 Ray Carroll
District 5 Richard Elias, Chair

County Administrator:

C.H. Huckelberry



Look What the Wind Blew In! Homeowners, Got Dust? Keep it Down!

Airborne Dust is Particulate Matter Pollution

Particulate Matter (PM) is simply airborne dust. It consists of complex microscopic solid particles or liquid droplets that become airborne from many types of sources. PM is harmful to human health, is a public nuisance, and is a regulated pollutant that must be minimized.

Particulate Matter is Hazardous

Airborne dust affects human health in significant ways. Children, the elderly, and people with existing heart and respiratory disease are most at risk from breathing particulates. Healthy individuals are affected as well, especially outdoor workers and exercisers. Breathing PM can cause:

- Reduced lung function;
- Aggravated heart and respiratory disease;
- Irritations to the nose, throat, and ear canal;
- Chronic bronchitis;
- Difficulty breathing;
- Heart attacks;
- Weakened immune system; and even
- Premature death (by 1-8 years).

In addition, the quality of life of neighbors exposed to airborne dust may also be compromised. Besides health affects, neighbors complain about the inability to have backyard barbecues, needing to keep windows and doors closed, and having to dust more frequently than usual during airborne dust episodes caused by human activity.

Homeowners Are Responsible for Airborne Dust

Title 17 of the Pima County Code, Section 17.16.050 states in part, *“No person shall cause, suffer, allow, or permit activities likely to result in excessive amounts of airborne dust without taking reasonable precautions to prevent particulate matter from becoming airborne.”*

This means that you must take action to prevent too much dust from becoming airborne on your property, no matter what the activity is that is causing the dust. Some areas of concern include horse corrals and arenas, home improvement projects, all-terrain vehicle tracks, yard maintenance, and dirt roads and driveways.

Horse Corrals and Arenas

Special Concerns: Soil in areas used regularly is disturbed. Dust may become airborne during activity and later during wind events.

Solutions to Consider:

- Make sure the base is properly compacted.
- Water heavily (at least 2” down) and seldom (as opposed to lightly and frequently) to coat particles and make them stick together.
- Apply stable/wood shavings, wood chips, mulch, compost, or fiber additives to footing to help retain moisture and prevent footing breakdown.
- Use environmentally friendly dust suppressant products
- Do your research. Check the internet and read articles to learn about costs, advantages, and limitations of these methods.





Home Improvement Projects

Special Concerns: Earthmoving activity kicks up dust. Untreated disturbed soil is vulnerable to wind. Wind may pick up dust from stockpiles and blow it into neighboring homes or property.

Solutions to Consider:

- Water effectively before and during activity as necessary.
- Water after activity to form a temporary crust to combat wind.
- Keep stockpiles away from neighboring property.
- Cover stockpiles with a tarp



ATV Tracks

Special Concerns: Fast, repetitive action kicks up dust and disturbs the topsoil crust, leaving the soil vulnerable to future wind events.

Solutions to Consider:

- Avoid riding in residential areas.
- Keep tracks away from property boundaries.
- Avoid riding on windy days.
- Reduce speed in dry areas, or if you see too much dust kicking up.
- Water or use another dust suppressant effectively before, during as necessary, and after activity.



Yard Maintenance

Special Concerns: Leaf blowers can relocate leaves, debris, and dirt into the street or neighboring property instead of removing them. Not only are emissions of gas-powered blowers thick in a concentrated area, swirling clouds of airborne debris, dust, pollen, and mold spores may pollute the air. Earthmoving activity disturbs the soil crust, leaving it vulnerable to wind.

Solutions to Consider

- Use manual rakes and brooms instead of blowers.
- Use electric vacuum blowers instead of gas-powered units, and limit the power or air speed to keep dirt from getting picked up.
- Refrain from using commercial sized blowers that are employed for blowing off large areas.
- Use water before and during earth moving activity as necessary, and afterwards to create a soil crust.
- Use native, drought-tolerant vegetation or rocks.



Dirt Driveways and Roads

Special Concerns: Frequent traffic continually breaks down the soil into smaller particle sizes. The act of driving kicks up dust and makes the area more vulnerable to later wind events.

Solutions to Consider:

- Pave, gravel, or apply dust suppressant products on driveways and private right-of-ways.
- Drive slower on dirt roads.
- Be considerate of homes that are likely to get the most dust depending on bends in the road, wind direction, and condition of the road.

Atención Propietarios de Terrenos

Como propietario(a) de un terreno baldío o abierto, usted debe tomar medidas para que el polvo (partículas de fracción respirable) no se suspenda en el aire sobre su propiedad.

¿Cómo se suspende en el aire el polvo de mi terreno?

La capa superior del suelo de su propiedad puede ser perturbada por los vehículos de motor que ingresan ilegalmente, actividad de construcción, o actividades de corte o arado en su terreno.

El desierto es polvoriento por naturaleza. ¿Cuál es el problema?

Si no son perturbados, los suelos de terrenos desérticos se entremezclan formando una corteza. Esta corteza es resistente al viento y ayuda a prevenir que el polvo quede suspendido en el aire. Al ser perturbadas, las partículas pequeñas son suspendidas en el aire cuando hay vientos fuertes y crean problemas a la salud humana y al medio ambiente.

Título 17 del Código del Condado de Pima

El Artículo III, Sección 17.16.080 declara que:

"Ninguna persona permitirá el uso de un terreno abierto urbano o suburbano sin tomar las precauciones razonables para limitar la concentración excesiva de partículas suspendidas en el aire".

¿Qué son los supresores de polvo?

Existen varios tipos de supresores de polvo, o paliativos, que se encuentran disponibles a través de compañías a lo largo de los EE.UU. Las categorías básicas de supresores incluyen: agua, productos que absorben agua, productos a base de petróleo, productos orgánicos que no son a base de petróleo, productos electroquímicos, productos de polímeros, y productos aditivos de arcilla.

Póngase en contacto con El Departamento de Calidad Ambiental del Condado de Pima para obtener más información sobre la selección y fabricantes de productos.



Para Obtener las Reglas del Condado de Pima sobre el Polvo, Quejas, o Información sobre el Aire:

Departamento de Calidad Ambiental del Condado de Pima

33 N. Stone Ave, Suite 700

Tucson, AZ 85701

520.243.7400 • Fax: 520.243.7370

www.deq.pima.gov

www.AirInfoNow.org

Supervisores del Condado de Pima

Ann Day, Supervisora, Distrito 1

Ramón Valadez, Supervisor, Distrito 2

Sharon Bronson, Supervisora, Distrito 3

Ray Carroll, Supervisor, Distrito 4

Richard Elias, Supervisor, Distrito 5

Administrador del Condado

C.H. Huckelberry



Impreso en papel reciclado.



Control de Polvo en Terrenos Abiertos y Baldíos

Se requiere que los propietarios de terrenos controlen las partículas suspendidas en el aire

Temas de Control del Polvo

¿Qué son las Partículas de Fracción Respirable?

Las partículas de fracción respirable (PM) son uno de los principales contaminantes del aire en el Condado de Pima. PM está compuesto de partículas diminutas (una fracción del grosor de un cabello humano) que flotan en el aire que respiramos. Las sustancias químicas tóxicas y cancerígenas pueden adherirse a PM. Las partículas finas pueden pasar a través del sistema de defensa de su cuerpo, viajar hasta las partes más profundas de sus pulmones, y causar daño.

¿Qué pueden causar las Partículas de Fracción Respirable?

- Dificultad de respirar
- Dolor respiratorio
- Reducción en la función pulmonar
- Sistemas inmunológicos debilitados
- Mayor seriedad de la bronquitis aguda, neumonía, asma, y enfisema
- Ataques al corazón
- Muerte prematura (1-8 años)

Asimismo PM reduce la visibilidad lo cual puede ser peligroso al manejar, e interfiere con las vistas maravillosas del paisaje.

¿Cuáles son las fuentes principales de Partículas de Fracción Respirable?

- Terrenos baldíos o abiertos perturbados
- Construcción y actividad minera
- Estacionamientos no pavimentados
- Actividad de vehículos de todo terreno
- Fuentes industriales
- Calles no pavimentadas
- Calles pavimentadas
- Humo de escape de diesel

¿Qué sucede si no controlo el polvo de mi propiedad?

Como propietario(a) del terreno, usted es responsable del polvo suspendido que se genera en su terreno, aunque USTED no lo esté generando personalmente. Si usted no controla el polvo:

- El Departamento de Calidad Ambiental del Condado de Pima podrá emitir infracciones.
- El Departamento del Sheriff del Condado de Pima y el Departamento de Policía de la Ciudad de Tucson podrán emitir avisos para que usted comparezca ante la corte.
- La continuación del uso del terreno y quejas posteriores por parte de ciudadanos pueden resultar en mayores medidas de aplicación de la ley, incluyendo multas.

Además, en 1999 el Condado de Pima excedió las normas nacionales de salud establecidas por la Agencia de Protección del Medio Ambiente (EPA, en inglés) para PM. Actualmente, estamos manteniendo las normas de calidad del aire bajo nuevas reglas y reglamentos del Condado de Pima. Si no controlamos las partículas PM suspendidas en el aire, tendremos reglas federales más estrictas, multas más costosas, y existe la posibilidad de que perdamos fondos federales para proyectos de transporte.

PROHIBIDO EL PASO

El ingreso ilegal a esta propiedad será castigado por la ley.



Las siguientes medidas pueden ayudar a controlar el polvo en su terreno:

- Prevenga el ingreso ilegal de vehículos de motor. Instale:
 - barreras
 - bordes
 - postes
 - árboles
 - vallas o cercos
 - portones
 - arbustos
 - letreros de “Prohibido el Paso”
- Reporte a toda persona que ingrese ilegalmente a su terreno, al Departamento del Sheriff del Condado de Pima o al Departamento de Policía de la Ciudad de Tucson.
- Use rompevientos como cercos o árboles.
- Siembre vegetación nativa o cobertura vegetal como zacate o pasto, arbustos, árboles, o enredaderas.
- Utilice agua, supresores de polvo, o grava de manera efectiva.

¡Actúe ahora!

Evite multas más adelante.



Leaf Blowing Matters

Leaf Blowers can be cost-effective for professional gardeners and landscapers, government maintenance crews, and homeowners by reducing the time and labor required to remove leaves and debris from property.

Leaf blowers, however, are also health hazards, they impact neighbors' quality of life, and create a noisy controversy. In 1999, Pima County exceeded the Environmental Protection Agency's national air quality health standards. In order to avoid non-attainment and prescriptive regulations, we need to keep particulate matter air pollution levels low. Avoiding using leaf blowers, or using them properly, can help Pima County maintain acceptable air quality levels and protect human health.

Leaf Blowers and Air Quality

Leaf blowers:

- generate as much tailpipe emissions from their engines (two-stroke) in one hour as a newer automobile does in driving over 350 miles. While a car will emit that pollution over a long stretch of road, the leaf blower may concentrate it all in one yard;
- emit dense clouds of oily smoke (two-stroke engines);
- kick up more than just leaves. Swirling clouds of airborne debris, including soil or dust, and possibly fragments of pollen or mold spores, pollute the air;
- produce a high grinding whine that disturbs residential neighborhoods and employees in commercial and office buildings; and
- oftentimes displaces trash and debris from private property onto public rights of way, creating problems for the community and government maintenance crews.



How Can Particulates Affect Your Health?

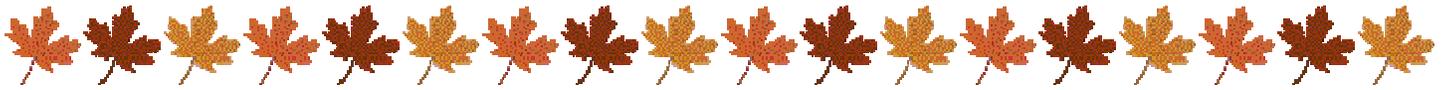
The smoke and airborne debris from leaf blowers contribute to **Particulate Matter** pollution. Particles of smoke and dust are suspended in the air, and can be inhaled. Particles less than 10 micrometers in size (one seventh the thickness of a human hair) can be deposited in the airways or reach deep into the lungs where they may accumulate, or be absorbed into the underlying tissues.

People with respiratory or heart disease, diabetics, older adults, and children are at a greater risk when breathing **Particulate Matter**. When exposed to high levels of particulates, these individuals have increased:

- admissions to hospitals and visits to emergency rooms;
- death from heart or lung diseases;
- aggravation of lung diseases (asthma attacks, acute bronchitis);
- susceptibility to respiratory infections; and
- heart attacks and irregular heart rhythms (in people with heart disease).

In healthy people, short-term exposure to elevated particle levels may cause minor irritations and temporary symptoms such as irritation of the eyes, nose, and throat; coughing; phlegm; chest tightness; shortness of breath; wheezing; and fatigue. Most will recover quickly and are unlikely to experience long-term consequences. Long-term exposure, even in healthy adults however, has been associated with lasting consequences including:

- reduced lung function; and
- development of chronic bronchitis.



Taking Reasonable Precautions

The use of leaf blowers can cause a violation of the Pima County Title 17 regulations. Responsible parties can be held accountable if reasonable precautions are not taken to prevent excessive amounts of dust or particulates from becoming airborne.

What Are Reasonable Precautions?

Reasonable precautions are actions taken that control dust and particulate matter effectively in order to protect human health and quality of life. Effective options vary depending upon each specific situation under current conditions.



Effective options *may* include the use of:

- manual rakes and brooms;
- vacuum type equipment with dust collection device attachments;
- water or other wetting agents;
- dust suppressants;
- limiting the power or air speed to keep dirt from blowing;
- refraining from using commercial sized blowers that are employed for blowing off large areas;
- temporarily ceasing the activity or operation; or
- electric vacuum blowers to help reduce volatile organic compound (VOC) emissions.

If you choose to use a two-stroke engine, measure the oil-gas mixture accurately – too much oil produces excess smoke and reduces engine life.

Your Choices Affect Our Community

Leaf blowers are hazards to health, affect our standard of living, disrupt neighborhoods, and can lead to violations of Pima County regulations. Taking reasonable precautions to eliminate excessive airborne dust, particulates, and emissions will help maintain a healthy community.

Questions? Want more information? Contact:
Pima County Department of Environmental Quality
33 North Stone Ave., 7th Floor • Tucson, AZ 85701 • (520) 243-7400 • www.deq.pima.gov



El Soplado de Hojas Importa

Las Sopladoras de Hojas pueden ser económicas para los jardineros y decoradores profesionales de jardines, personal de servicios del gobierno, y propietarios de casa, reduciendo el tiempo y el trabajo requeridos para remover las hojas y los residuos de la propiedad.

Sin embargo, las sopladoras de hojas también presentan un peligro para la salud, tienen un impacto en la calidad de vida de los vecinos, y generan una controversia ruidosa. En 1999, el Condado de Pima excedió las normas nacionales de calidad del aire de la Agencia de Protección del Medio Ambiente. Para poder evitar que se impongan reglamentos prescritos y por falta de cumplimiento, necesitamos mantener los niveles de contaminación por partículas a niveles bajos. Evitar el uso de sopladoras de hojas, o utilizándolas de manera apropiada, puede ayudar al Condado de Pima a mantener niveles aceptables de calidad del aire y proteger la salud humana.



Las Sopladoras de Hojas y la Calidad del Aire

Las sopladoras de hojas:

- Generan en una hora la misma cantidad de emisiones de escape a través de sus motores (de dos ciclos) que un automóvil al ser manejado por más de 350 millas. Mientras que un carro emite dicha contaminación a través de un largo trecho de camino, es posible que una sopladora de hojas lo concentre todo en un lote;
- Emiten densas nubes de humo aceitoso (motores de dos ciclos);
- No solamente levantan hojas. Las nubes de torbellino de residuos en el aire, que contienen suelo o polvo, y posiblemente fragmentos de polen o esporas de moho, contaminan el aire;
- Producen un chillido que causa molestia en los vecindarios residenciales y a los empleados en edificios comerciales y de oficinas; y
- A menudo desplazan basura y residuos de propiedades privadas a derechos de vía públicos, generando problemas para las cuadrillas de mantenimiento de la comunidad y del gobierno.

¿En qué Manera Pueden Afectar su Salud las Partículas?

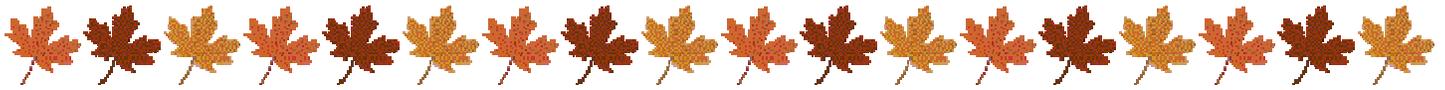
El humo y los residuos en el aire producidos por las sopladoras de hojas contribuyen a la contaminación por **Partículas**. Las partículas de humo y polvo son suspendidas en el aire, y pueden ser inhaladas. Las partículas menores de 10 micrómetros de diámetro (una séptima parte del grosor de un cabello humano) pueden ser depositadas en las vías respiratorias o llegar hasta lo más profundo de los pulmones donde pueden acumularse, o ser absorbidas en los tejidos subyacentes.

Las personas con problemas respiratorios o del corazón, individuos diabéticos, ancianos, y niños se encuentran en un mayor riesgo al respirar **Partículas**. Al estar expuestos a niveles elevados de partículas, estos individuos tienen un aumento en:

- admisiones a hospitales y visitas a salas de emergencia;
- muerte a causa de enfermedades del corazón o de los pulmones;
- agravamiento de enfermedades pulmonares (ataques de asma, bronquitis aguda);
- susceptibilidad a infecciones respiratorias; y
- ataques al corazón y ritmos irregulares del corazón (en personas con problemas del corazón).

En las personas sanas, una exposición a corto plazo a niveles elevados de partículas puede causar irritaciones menores y síntomas temporales tales como irritación de los ojos, nariz, y garganta; tos; flema; tensión pectoral; falta de aire; silbido; y fatiga. La mayoría de ellas se recuperarán rápidamente y improbable que experimenten consecuencias a largo plazo. Sin embargo, la exposición a largo plazo, aun en los adultos sanos, ha sido asociada con consecuencias duraderas que incluyen:

- reducción en la función pulmonar; y
- desarrollo de bronquitis crónica.



Tomando Precauciones Razonables

El uso de sopladoras de hojas puede causar una violación de los reglamentos del Título 17 del Condado de Pima. Los infractores pueden ser considerados responsables al no tomar las precauciones razonables para prevenir que se eleven en el aire cantidades excesivas de polvo o partículas.

¿Qué Son Precauciones Razonables?

Precauciones razonables son acciones que se toman para controlar efectivamente el polvo y las partículas con el propósito de proteger la salud y calidad de vida de las personas. Las opciones efectivas varían dependiendo de cada situación específica bajo las condiciones actuales.

Las opciones efectivas *pueden* incluir el uso de:

- Rastrillos y escobas manuales;
- Equipo tipo aspiradora con accesorios para recolección de polvo;
- Agua u otros agentes para humedecer;
- Supresores de polvo;
- Limitar la energía o velocidad del aire para evitar soplar la suciedad;
- Abstenerse a usar sopladoras de tamaño comercial que se utilizan para soplar áreas amplias;
- Cesar temporalmente la actividad u operación; o
- Sopladoras eléctricas tipo aspiradora para ayudar a reducir las emisiones de compuestos orgánicos volátiles (COVs).

Si decide utilizar un motor de doble ciclo, mida exactamente la mezcla aceite-gas – demasiado aceite produce un exceso de humo y reduce la vida del motor.



Sus Decisiones Afectan a Nuestra Comunidad

Las sopladoras de hojas representan un peligro para la salud, afectan nuestra norma de vida, son una molestia en los vecindarios, y pueden llevar a violaciones de los reglamentos del Condado de Pima. El tomar precauciones razonables para eliminar polvo, partículas, y emisiones excesivas en el aire ayudará a mantener una comunidad saludable.

¿Preguntas? ¿Necesita más información? Póngase en contacto con el:

Pima County Department of Environmental Quality /

Departamento de Calidad Ambiental del Condado de Pima

33 North Stone Ave., 7th Floor • Tucson, AZ 85701 • (520) 243-7400 • www.deq.pima.gov

What is Particulate Matter?

There are things floating around in the air. Most of them, you cannot even see. They are a kind of air pollution called particles or particulate matter. In fact, particulate matter may be the air pollutant that most commonly affects people's health.

Have a Look.

Particles can come in almost any shape or size, and can be solid particles or liquid droplets. We divide particles into two major groups. These groups differ in many ways. One of the differences is size, we call the bigger particles PM10 and we call the smaller particles PM2.5.

BIG. The big particles are between 2.5 and 10 micrometers (from about 25 to 100 times thinner than a human hair). These particles are called PM10 (we say "P M ten", which stands for Particulate Matter up to 10 micrometers in size). These particles cause less severe health effects.

SMALL. The small particles are smaller than 2.5 micrometers (100 times thinner than a human hair). These particles are called PM2.5 (we say "P M two point five", as in Particulate Matter up to 2.5 micrometers in size).

Where particulate matter comes from ...

Size isn't the only difference. Each type of particle is made of different material and comes from different places.

	Coarse Particles (PM ₁₀)	Fine Particles (PM _{2.5})
What they are	<ul style="list-style-type: none">• smoke, dirt and dust from factories, farming, and roads• mold, spores, and pollen	<ul style="list-style-type: none">• toxic organic compounds• heavy metals
How they're made	crushing and grinding rocks and soil then blown by wind	<ul style="list-style-type: none">• driving automobiles• burning plants (brush fires and forest fires or yard waste)• smelting (purifying) and processing metals

These particles get around.

Which particles do you think travel farther?

PM₁₀ (big) **OR** PM_{2.5} (small)

How far do you think PM₁₀ particles can travel?

100 feet 25 miles 500 miles

How far do you think PM_{2.5} particles can travel?

100 feet 25 miles 500 miles

The smaller particles are lighter and they stay in the air longer and travel farther. PM10 (big) particles can stay in the air for minutes or hours while PM2.5 (small) particles can stay in the air for days or weeks. And travel? PM10 particles can travel as little as a hundred yards or as much as 30 miles. PM2.5 particles go even farther; many hundreds of miles.

Particulate Matter and Your Health

Getting into your body.

When you inhale, you breathe in air along with any particles that are in the air. The air and the particles travel into your respiratory system (your lungs and airway). Along the way the particles can stick to the sides of the airway or travel deeper into the lungs.

The farther particles go, the worse the effect.

Which particles can go farther into the lungs?

PM₁₀ (big) **OR** PM_{2.5} (small)

Answer: the smaller PM2.5 particles. Smaller particles can pass through the smaller airways. Bigger particles are more likely to stick to the sides or get wedged into one of the narrow passages deep in the lung.

Other factors that affect how deep into the lungs particles can go:

- **Mouth or nose breathing.** Breathing through your mouth allows particles to travel deeper into your lungs.
- **Exercise.** While exercising, particles can travel deeper.
- **Age.** Older people breath less deeply so particles may not get as deep.
- **Lung disease.** If lung disease causes shallow breathing, particles will remain in the upper sections of the airways and lung.
- **Weather** (temperature).
- **Other pollutants in the air.**

Your body responds to the particulate invasion!

Your lungs produce mucous to trap the particles, and tiny hairs wiggle to move the mucous and particles out of the lung. You may notice something in the back of your throat (this is

the mucous); the mucous leaves the airway by coughing or swallowing. If the particle is small and it gets very far into the lungs, special cells in the lung trap the particles and then they can't get out and this can result in lung disease, emphysema, lung cancer.

Health Effects

Both PM10 (big) and PM2.5 (small) particles can cause health problems; specifically respiratory health (that's the lungs and airway). Because the PM2.5 **travels deeper** into the lungs AND because the PM2.5 is made up things that are **more toxic** (like heavy metals and cancer causing organic compounds), PM2.5 can have worse health effects than the bigger PM10.

Exposure to particulate matter leads to increased use of medication and more visits to the doctor or emergency room. Health effects include the following:

- Coughing, wheezing, shortness of breath
- Aggravated asthma
- Lung damage (including decreased lung function and lifelong respiratory disease)
- Premature death in individuals with existing heart or lung diseases

Particulate Matter -- Air Quality Index (AQI) and Health Concerns

AQI Values	Air Quality Descriptor	Health Concerns*	
		PM _{2.5}	PM ₁₀
0 - 50	Good	None	None
51 - 100**	Moderate	None	None
101 - 150	Unhealthy for Sensitive Groups	People with respiratory or heart disease, the elderly, and children should limit prolonged exertion.	People with respiratory disease, such as asthma, should limit outdoor exertion.
151 - 200	Unhealthy	People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion.	People with respiratory disease, such as asthma, should avoid outdoor exertion; everyone else, especially the elderly and children, should limit prolonged outdoor exertion.

201 - 300	Very Unhealthy	People with respiratory or heart disease, the elderly, and children should avoid any outdoor activity; everyone else should avoid prolonged exertion.	People with respiratory disease, such as asthma, should avoid any outdoor activity; everyone else, especially the elderly and children, should limit outdoor exertion.
301 - 500	Hazardous	Everyone should avoid any outdoor exertion; people with respiratory or heart disease, the elderly, and children should remain indoors.	Everyone should avoid any outdoor exertion; people with respiratory disease, such as asthma, should remain indoors.

* PM has two sets of cautionary statements, which correspond to the two sizes of PM that are measured:

- Particles up to 2.5 micrometers in diameter (PM_{2.5})
- Particles up to 10 micrometers in diameter (PM₁₀)

**

- An AQI of 100 for PM_{2.5} corresponds to a PM_{2.5} level of 35 micrograms per cubic meter (averaged over 24 hours).
- An AQI of 100 for PM₁₀ corresponds to a PM₁₀ level of 150 micrograms per cubic meter (averaged over 24 hours).

Appendix G - Education Programs - West Pinal

Air Quality Guide for Particle Pollution

Harmful particle pollution is one of our nation's most common air pollutants. Use the chart below to help reduce your exposure and protect your health. For your local air quality forecast, visit www.airnow.gov

Air Quality Index	Who Needs to Be Concerned?	What Should I Do?
Good (0-50)	No one. Air quality is good for everyone.	It's a great day to be active outside!
Moderate (51-100)	Some people may be unusually sensitive to particle pollution and may need to take precautions.	Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it a little easier. Everyone else: It's a good day to be active outside!
Unhealthy for Sensitive Groups (101-150)	Sensitive groups include people with heart or lung disease, older adults, children and teenagers.	Sensitive groups: Reduce prolonged or heavy exertion. It's OK to be active outside, but take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath. People with asthma should follow their asthma action plans and keep quick relief medicine handy. If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.
Unhealthy (151-200)	Everyone can be affected.	Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling. Everyone else: Reduce prolonged or heavy exertion. Take more breaks during all outdoor activities.
Very Unhealthy (201-300)	Everyone	Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. Everyone else: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better.
Hazardous (301-500)	Everyone	Everyone: Avoid all physical activity outdoors. Sensitive groups: Remain indoors and keep activity levels low. Follow tips for keeping particle levels low indoors.

Key Facts to Know About Particle Pollution:

- Particle pollution can cause serious health problems – including asthma attacks, heart attacks, strokes and early death.
- Particle pollution can be a problem at any time of the year, depending on where you live.
- You can reduce your exposure to pollution and still get exercise! Use daily Air Quality Index (AQI) forecasts at www.airnow.gov to plan your activity.

What is particle pollution?

Particle pollution comes from many different types of sources. Fine particles (2.5 micrometers in diameter and smaller) include power plants, industrial processes, vehicle tailpipes, woodstoves, and wildfires. Coarse particles (between 2.5 and 10 micrometers) come from crushing and grinding operations, road dust, and some agricultural operations.

Why is particle pollution a problem?

Particle pollution is linked to a number of health problems, including coughing, wheezing, reduced lung function, asthma attacks, heart attacks and strokes. It also is linked to early death.

Do I need to be concerned?

While it's always smart to pay attention to air quality where you live, **some people may be at greater risk from particle pollution.** They include:

- People with cardiovascular disease (diseases of the heart and blood vessels)
- People with lung disease, including asthma and COPD
- Children and teenagers
- Older adults
- Research indicates that obesity or diabetes may increase risk.
- New or expectant mothers may also want to take precautions to protect the health of their babies.

How can I protect myself?

Use AQI forecasts to plan outdoor activities. On days when the AQI forecast is unhealthy, take simple steps to reduce your exposure:

- Choose a less-strenuous activity
- Shorten your outdoor activities
- Reschedule activities
- Spend less time near busy roads

When particle levels are high outdoors, they can be high indoors – unless the building has a good filtration system.

Keep particles lower indoors:

- Eliminate tobacco smoke
- Reduce your use of wood stoves and fireplaces
- Use HEPA air filters and air cleaners designed to reduce particles
- Don't burn candles

Can I help reduce particle pollution?

Yes! Here are a few tips.

- Drive less: carpool, use public transportation, bike or walk
- Choose ENERGY STAR appliances
- Set thermostats higher in summer and lower in winter
- Don't burn leaves, garbage, plastic or rubber
- Keep car, boat and other engines tuned





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Air Quality Flag Program

The Air Quality Flag Program helps children with asthma/chronic respiratory disease, their parents, and school personnel be prepared to take action when air pollution levels are high using color-coded flags. Every day, a flag is raised in front of participating schools that signals how healthy the air is that day. If your child/student has asthma, start the Flag Program at your school because air pollution can make asthma symptoms worse.

[VIEW CURRENT AIR QUALITY FORECAST](#)

Contact [Scott DiBiase](#) at Pinal County Air Quality to raise your flag today.



- **Green Flag:** Good! Clean air, have fun!
- **Yellow Flag:** The air is okay, but not the best for everyone. If you need to, just play easy.
- **Orange Flag:** Pollution levels may be unhealthy for sensitive groups, such as children with asthma.
- **Red Flag:** Outdoor activity should be limited for all children & children with lung disease should stay indoors.

AQI Flags provided to Pinal County by the Arizona Department of Environmental Quality (ADEQ) through an Environmental Protection Agency (EPA) Grant.



Schools participating in the Flag Program will, after receiving the daily forecast, raise the colored flag that corresponds to the daily forecast so teachers, children, parents and the community can easily know what the forecasted air quality conditions are for that day.

Click [Pinal County Schools](#) for a list of participating schools in the Flag Program.
Click [here](#) for a map of participating schools.

	<p>Click on the EnviroFlash logo to sign up for your daily automated email!</p>
	<p>Clicking on "AirNow" will provide information about the AQI and what it means for your local air quality as well as your health.</p>
	<p>The Arizona Children's Environmental Health Program provides answers to many air pollution questions and what you can do to help.</p>
<p>EPA's Student Environmental Center</p>	



Educational

Documents



 [AQI Flag Program Coordinator Handbook](#)

Click on picture to view!

Pinal County Government
31 N. Pinal Street
Florence, AZ 85132
520.509.3555 (Local)
888.431.1311 (Toll Free)



Menu

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- Dust Storms
- Dust Storms Tips
- General Area
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Pinal County Air quality accepts dust permits online or in-person at any of our outlying offices.

There are 3 versions of a dust permit. To choose one, will depend on where you are building.

- **Apache Junction Non-Attainment**
 - **General Area**
 - **West Pinal Non-Attainment**
- The options for each are located within the menu on the left-side of this page. Each webpage has a map to view to provide assistance in locating the dust permit that pertains to the location of your construction activity. If you are not sure, call our office for assistance.**



Dust kicked up by vehicles traveling on roads, construction, agriculture, burning and wind events create a type of air pollution called particulate matter. Particulate matter is classified into two categories PM10 and PM2.5. Rules and regulations have been adopted to limit the amount of particulate matter produced by certain types of activities.



Outdoor Pollution Education
(Flash Movie)

Title	Address	Phone	Weekdays	Time
Apache Junction Pinal County Complex	575 N Idaho Rd. Suite 800	520-866-6929	Monday & Thursday only	8:30 a.m.-03:30p.m. 8:30a.m.-12:30pm
Casa Grande Pinal County Complex	820 E Cottonwood Ln. Bldg A	520-866-6929	Wednesday October - April only	8:30a.m. - 12:30p.m.
Florence Pinal County Complex	31 N Pinal St. Bldg F	520-866-6929	Monday - Friday	8:00 a.m.-4:30p.m.

What is Particulate Matter (PM10)?

PM10 is particulate matter where the size of the actual particles is 10 microns in



diameter or less. PM10 is a type of air pollution that includes dust, soot, and tiny bits of solid materials that are released and move around in the air. This includes



burning of diesel fuels, incineration of garbage, mixing and applying fertilizers and pesticides, road construction, steel making, mining, field burning, forest fires, fireplaces and woodstoves. It causes eye, nose and throat irritation and respiratory problems.

What is PM 2.5?

The term PM2.5 includes both solid particles and liquid droplets (excluding water droplets) that are found in outdoor air. Particulate matter may be emitted directly into the air or can form from pollutants that react in the atmosphere. PM2.5 refers to the size of the actual particles as 2.5 microns in diameter or less. Fine particles tend to pose the greatest health concern because they can be inhaled into and accumulate in the respiratory system.

Sources of fine particle emissions include all types of combustion (motor vehicles, power plants, wood burning, etc.) and some industrial processes. Organic compounds, nitrogen oxides, ammonia and sulfur dioxide can react in the atmosphere to form secondary PM2.5.

What is Fugitive Dust?

Fugitive dust are particles lifted into the air caused by man-made and natural activities such as the movement of soil, vehicles, equipment, blasting, and wind. Fugitive dust is emitted into the air by activities that disturb the soil, such as earthmoving and vehicular/equipment traffic on unpaved surfaces.

Dust Information

-  [Air Quality Guide 2013](#)
Particulate Matter
-  [Special Event Application](#)
{PDF Fill-In}

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Fugitive Dust

Fugitive Dust

There are many reasons, both environmental and health related, why you should control fugitive dust. Fugitive dust is made up of fine particles. When inhaled, fine particles can accumulate in the respiratory system causing various respiratory problems including persistent coughs, wheezing and physical discomfort. Additionally, breathing these fine particles can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. Even short-term exposure to dust can increase the severity of respiratory problems.

West Pinal PM10 Nonattainment Area - Control fugitive dust from open areas (vacant lots), unpaved roads, unpaved lots, paved public roadways by requiring preventive measures to reduce dust emissions.

Countywide - Regulate operations which periodically may cause dust emissions. The focus is on emissions from process activity, site activity and a lack of adequate surface stabilization, all associated with construction, earthwork or land development.

Apache Junction PM10 Nonattainment Area - To avoid violations of the PM10 standard and improve control of excessive fugitive emissions from unpaved parking lots.

Countywide Fugitive Dust



[Countywide Fugitive Dust Rules](#)

[Horse and ATVs](#)

West Pinal PM10 Nonattainment Area



[Fugitive Dust Brochure](#)

[W Pinal Fugitive Dust Rules](#)

Apache Junction Nonattainment Area



[Residential & Commercial Property Owners](#)

[Leaf Blower Training](#)

[Pointers Operating Leaf Blower](#)

[Leaf Blowers](#)

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 31 N. Pinal Street
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 888.431.1311 (Toll Free)

Paved Public Roads

Trackout standards (continued)

2. Don't cause another source of fugitive dust during removal of trackout.
3. If the Control Officer is notified and approves the following: The 24 hour timeframe for cleanup of trackout can be extended if unsafe travel would result from restricting traffic during cleanup and if cleanup isn't possible within 72 hours due to a weekend or holiday.

Unpaved shoulders standards

The owner and/or operator of a paved public road will take the following actions prior to, during and after work on unpaved road shoulders:

1. Apply a dust suppressant (s) to the total area of disturbance on the unpaved shoulder in sufficient quantity and frequency to maintain a stabilized surface.
2. Prevent trackout by using one of the following:
 - A) Manually sweeping and picking up; or
 - B) Operating a rotary brush or broom while sufficiently wetting the road in order to limit opacity to 20% or less; or
 - C) Operating a PM10 efficient street sweeper; or
 - D) Flushing with water, if curb and gutter aren't present and where use of the water won't result in adverse impacts on storm water drainage systems or violate any national pollutant discharge elimination system permit program.

Definitions

Fugitive Dust

The regulated particulate matter, which is not collected by a capture system, which is entrained in the ambient air, and which is caused from human and/or natural activities, such as but not limited to, movement of soils, vehicles, equipment, blasting, and wind.

Open Areas/Vacant Lots

1. Vacant portions of residential or commercial lots and contiguous parcels that are immediately adjacent to and owned and/or operated by the same individual or entity are considered one open area.
2. All land whether or not it is adjoining a developed or partially developed residential, industrial, institutional, governmental, or commercial area.
3. A subdivided residential, industrial, institutional, governmental or commercial lot that contains no approved or permitted buildings or structures of a temporary or permanent nature.
4. A partially developed residential, industrial, institutional, governmental, or commercial lot and contiguous lots under common ownership.

Unpaved Lots

Any area that isn't paved and that is used for parking, maneuvering (excluding military maneuvers on federal facilities), material handling, or storing motor vehicles and equipment. An unpaved lot includes, but is not limited to, automobile impound yards, wrecking yards, automobile dismantling yards, salvage yards, material handling yards, and storage yards.

Exemptions

- ◆ Vehicle test and development facilities
- ◆ Emergency response activities
- ◆ Normal farm cultural practices
- ◆ Construction activities (regulated by the W Pinal PM10 Non-attainment Area construction dust rules)
- ◆ Establishment of initial landscapes without use of mechanized equipment, landscape maintenance without mechanized equipment, playing on or maintaining a field used for non-motorized sports.

PINAL COUNTY AIR QUALITY CONTROL DISTRICT



WEST PINAL PM10 NONATTAINMENT AREA FUGITIVE DUST

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www.pinalcountyaz.gov/airquality

In 2012 EPA designated a large portion of Pinal County as moderate nonattainment for PM10 (West Pinal PM10 Nonattainment Area). The map for this area is located at www.pinalcountyz.gov/airquality.

Open Areas/Vacant Lots Standards

All open areas/vacant lots will comply with the following:

1. 20% opacity standard
2. For trespassing in open areas/vacant lots, an owner and/or operator will install one of the following:
 - A) No trespassing signs
 - B) Physical barriers (i.e. curbs, fences, gates, etc.)
3. Open areas/vacant lots 1 acre or larger that have at least 0.5 acres or more of disturbed surface area will implement at least one of the following control measures to stabilize disturbed surface area.
 - A) Apply and maintain water or dust suppressants; or
 - B) Establish vegetation; or
 - C) Install and maintain pavement; or
 - D) Apply and maintain gravel uniformly; or
 - E) Apply and maintain chemical/organic stabilizers/suppressants; or
 - F) An alternative control measure approved in writing by the Control Officer and EPA Administrator
4. Open areas/vacant lots 1 acre or larger that have 0.5 acres or more of disturbed surface area will within 30 days of initial discovery of disturbed surface area sign up to receive the Pinal County dust control forecast (<https://public.govdelivery.com/accounts/AZDEQ/subscriber/new>) and ensure their open areas/vacant lots are stabilized the day leading up to and the day that has a high risk forecast.

Open Areas/Vacant Lots

Removal of vegetation

1. When removing vegetation from any open area/vacant lot by blading, disking, plowing under or other means the owner and/or operator will implement all of the following control measures:

A. Apply a dust suppressant (s) to the total disturbed area immediately prior or during the weed removal

B. Prevent or eliminate trackout onto paved surfaces and access points adjoining paved surfaces with one of the following control measures:

- * Manually sweeping and picking up; or
- * Operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit opacity to 20% or less; or
- * Operating a PM10 efficient street sweeper; or
- * Flushing with water, if curb and gutters are not present and where the use of water will not result as a source of trackout material or result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program.
- * Apply a dust suppressant (s), gravel, compaction or an alternative control measure immediately following weed abatement to the entire disturbed surface area such that the surface is stabilized.

Stabilization determined by one of the following:

1. Observation of visible crust, determined by the drop ball test.
2. Threshold Friction Velocity (TFV) 100 cm/second or higher
3. Flat vegetative cover equal to at least 50%
4. Standing vegetative cover equal to or greater than 30%
5. Standing vegetative cover equal to or greater than 10% where TFV is equal to or greater than 43 cm/second.

Unpaved Lots

Standards

Unpaved lots greater than 5,000 square feet will comply with the following:

1. 20% opacity standard
2. Silt loading less than 0.33 oz/ft², however if silt loading is equal or greater than 0.33 oz/ft², then silt content shall not exceed 8%.
3. Implement one of the following control measures:
 - A) Pave; or
 - B) Apply dust suppressant in sufficient quantity and frequency to maintain a stabilized surface; or
 - C) Apply and maintain surface gravel uniformly to maintain a stabilized surface; or
 - D) Apply and maintain an alternative control measure, approved in writing by the Control Officer and EPA Administrator
4. The control measure used will be considered effective when the unpaved lot doesn't exceed 20% opacity and meets the silt loading and/or silt content standards.

Paved Public Roads

Trackout standards

When trackout extends 50 feet or more from the nearest unpaved surface, the owner and/or operator from where the trackout came will:

1. Remove trackout within 24 hours of discovery with one of the following control measures (can restrict vehicles from traveling over trackout until it's removed) :
 - A) Manually sweeping and picking up; or
 - B) Operating a rotary brush or broom while sufficiently wetting the road in order to limit opacity to 20% or less; or
 - C) Operating a PM10 efficient street sweeper; or
 - D) Flushing with water, if curb and gutter aren't present and where use of the water won't result in adverse impacts on storm water drainage systems or violate any national pollutant discharge elimination system permit program.

Appendix H – Education Programs – Yuma

Air Quality Guide for Particle Pollution

PollutionHarmful particle pollution is one of our nation’s most common air pollutants. Use the chart below to help reduce your exposure and protect your health. For your local air quality forecast, visit <http://www.azdeq.gov/programs/air-quality-programs/air-forecasting>.

Air Quality Index	Who Needs to be Concerned?	What Should I do?
Good (0-50)		It’s a great day to be active outside!
Moderate (51-100)	Some people who may be unusually sensitive to particle pollution.	<p>Unusually sensitive people: Consider reducing prolonged or heavy outdoor exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.</p> <p>Everyone else: It’s a good day to be active outside.</p>
Unhealthy for Sensitive Groups (101-150)	Sensitive groups include people with heart or lung disease, older adults, children and teenagers.	<p>Sensitive groups: Reduce prolonged or heavy exertion. It’s OK to be active outside, but take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath.</p> <p>People with asthma should follow their asthma action plans and keep quick-relief medicine handy.</p> <p>If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.</p>
Unhealthy (151-200)	Everyone	<p>Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling.</p> <p>Everyone else: Reduce prolonged or heavy outdoor exertion. prolonged or heavy exertion. Take more breaks during outdoor activities.</p>

Key Facts to Know About Particle Pollution:

- Particle pollution can cause serious health problems – including asthma attacks, heart attacks, strokes and early death.
- Particle pollution can be a problem at any time of the year, depending on where you live.
- You can reduce your exposure to ozone and still get exercise! Use the Daily Air Quality Forecasts at <http://www.azdeq.gov/programs/air-quality-programs/air-forecasting> to plan your activity.

What is particle pollution?

Particle pollution comes from many different sources. Fine particles (2.5 micrometers in diameter and smaller) come from power plants, industrial processes, vehicle tailpipes, woodstoves, and wildfires. Coarse particles (between 2.5 and 10 micrometers) come from crushing and grinding operations, road dust, and some agricultural operations.

Why is particle pollution a problem?

Particle pollution is linked to a number of health problems, including coughing, wheezing, reduced lung function, asthma attacks, heart attacks and strokes. It also is linked to early death.

Do I need to be concerned?

While it's always smart to pay attention to air quality where you live, **some people may be at greater risk from particle pollution.** They include:

- People with cardiovascular disease (diseases of the heart and blood vessels)
- People with lung disease, including asthma and COPD
- Children and teenagers
- Older adults

- Research indicates that obesity or diabetes may increase risk.
- New or expectant mothers may also want to take precautions to protect the health of their babies.

How can I protect myself?

Use AQI forecasts to plan outdoor activities. On days when the AQI forecast is unhealthy, take simple steps to reduce your exposure:

- Choose a less-strenuous activity
- Shorten your outdoor activities
- Reschedule activities
- Spend less time near busy roads

When particle levels are high outdoors, they can be high indoors – unless the building has a good filtration system.

Keep particles lower indoors by:

- Eliminate tobacco smoke
- Reduce your use of wood stoves and fireplaces
- Use HEPA air filters and air cleaners designed to reduce particles
- Don't burn candles

Can I help reduce particle pollution?

Yes! Here are a few tips:

- Drive less: carpool, use public transportation, bike or walk
- Choose ENERGY STAR appliances
- Don't burn leaves, garbage, plastic or rubber. Keep car, boat and other engines tuned

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Air Quality Flag Program

Revised on: January 8, 2018 - 2:36pm

The Air Quality Flag Program is a great way to teach people about local outdoor air quality conditions, how air pollution impacts health, actions we can take to protect ourselves and ways to reduce polluting activities. Available to schools, community health centers, fire departments, parks and recreation centers, environmental education centers, and after-school/early-childcare facilities in Maricopa, Pinal, Yuma and Santa Cruz counties, the program uses different colored flags to notify the public of air quality conditions based on the Environmental Protection Agency's (EPA) Air Quality Index (AQI).

What Do The Flag Colors Mean?

Flags are posted at participating schools and/or community organizations in areas visible to the public. The flags match AQI's warning level colors, indicating the amount of pollution in the air and any possible associated health effects experienced within a few hours or days after breathing polluted air. ADEQ and some local districts calculate the AQI for four major air pollutants regulated by the Clean Air Act: ground-level ozone, PM₁₀, PM_{2.5} and carbon monoxide. For each of these pollutants, the EPA has established National Air Quality Standards to protect public health. If a warning is issued, the flag's purpose is to protect the greater at-risk population.

Green — *Air quality is good.*

Yellow — *Air quality is acceptable, but there might be health concerns for some of the population.*

Orange — *Air quality is unhealthy for sensitive groups, including people with lung or cardiac disease, children, outdoor athletes and older adults.*

Red — *Air quality is unhealthy. Everybody may begin to feel some health effects. Outdoor activity should be limited for all children, and sensitive individuals should stay indoors.*

Want to start a Flag Program at your school or community organization ? | [Learn How](#) >

CONTACT INFORMATION

Program Coordinator
602-771-2231
[Email >](#)

SEE MORE

- [What is Today's Air Quality? >](#)
- [AQ Flag Program >](#)
- [AQ Flag Program FAQs >](#)
- [Flag Colors & Recommended Activity >](#)
- [Flag Program Fact Sheet | En español >](#)
- [Flag Program Handbook >](#)

RESOURCES FOR SCHOOLS

- [Start A Flag Program At Your School >](#)
- [Flag Program Poster >](#)
- [Flag Info Letter to Parents | En español >](#)
- [Outdoor Activity Guide | En español >](#)
- [Air Quality Activities For Teachers >](#)
- [Air Quality Online Curriculum \(Grades K-6\) >](#)
- [Build an Air Quality Monitor \(Grades 7 - 12\) >](#)
- [Pima County Air Quality Curriculum >](#)
- [Maricopa County Air Quality Curriculum >](#)
- [PM10 Pollution & Childhood Asthma >](#)

ADDITIONAL RESOURCES

- [Air Quality Index Guide >](#)
- [Air Quality Index Calculator >](#)
- [PM10 Pollution & Asthma in Children >](#)
- [Children's Health Study >](#)
- [EPA Flag Program >](#)
- [Pinal County Flag Program >](#)
- [Maricopa County Air Quality App >](#)
- [Facebook Photo Gallery >](#)

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