

Pinal County Air Quality Index (AQI) Forecasting Program

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September 24, 2013

- The AQI Forecast Program in Pinal County started in 2007
- The forecast covers PM₁₀ and ozone in Pinal County and is in the Air Quality Index format (i.e. Number and AQI category/color code, Good, Moderate, Unhealthy for Sensitive Groups, etc.)
- The forecast is updated Monday through Friday around noon and also on an as needed basis (i.e. nights, weekends, holidays, etc.)
- The forecast is area/site specific in nature (i.e. PM₁₀ in Cowtown, Maricopa, Casa Grande, PCH, Combs, Apache Junction, etc.)
- There is one primary forecaster with two backup forecasters with a significant amount of coordination among the forecasters during periods of tough air quality forecasts (i.e. monsoon)
- A Health Watch for ozone and/or PM₁₀ is issued if the AQI levels are expected to approach the health standards
- A High Pollution Advisory (HPA) for ozone and/or PM₁₀ are issued if the AQI levels are expected to exceed the health standards. When an HPA is issued there is coordination with the ADEQ forecasters to verify if they too are going to issue an HPA. From there the National Weather Service (NWS) is contacted in order for them to issue an air quality alert.
- 829 EnviroFlash subscribers, 286 Twitter Followers
- AQI Flag Program associated with the forecast: Six school districts, 57 locations which include public schools, public school district offices, charter schools and a head start program.
- An example of a HPA forecast is on pages 2-4 below:



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)
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AIR QUALITY FORECAST FOR MONDAY, APRIL 8, 2013

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)
Valid for areas within Pinal County Arizona

	Highest AQI value/Site in Pinal County	Highest AQI forecasted value (see tables below for forecasts by monitoring location)			
		YESTERDAY SAT 4/6/13	TODAY SUN 4/7/13	TOMORROW MON 4/8/13	EXTENDED TUE 4/9/13
OZONE	48 APACHE JUNCTION	50 GOOD	48 GOOD	50 GOOD	49 GOOD
PM-10*	42** SAN TAN VALLEY	55** MODERATE	190** UNHEALTHY	80** MODERATE	60** MODERATE
HEALTH WATCH/ ADVISORY	NONE	NONE	PM ₁₀ HPA  <i>BLOWING DUST</i>	NONE	NONE

*PM-10 = Particles 10 microns and smaller

**Excludes Cowtown monitor. See following page for Cowtown forecast.

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

“PM-10 Health Watch” means that the highest concentration of PM-10 may approach the federal health standard.

“High Pollution Advisory” (HPA) means that the highest concentration of OZONE or PM-10 may exceed the federal health standard.

“DUST” means that short periods of high PM-10 concentrations caused by outflow from thunderstorms are possible.

Health message for Monday, April 8, 2013: Outdoor activities are discouraged due to high particulate pollutant levels.

Discussion

Updated Sunday, April 7, 2013 at 9:30 a.m.

**** PM10 HIGH POLLUTION ADVISORY (HPA) IN EFFECT
MONDAY, APRIL 8, 2013****

Today will be the last day with above normal temperatures as a strong Pacific low pressure system and associated cold front will move through the area Monday and bring windy and cooler conditions. The wind gusts expected with this system may approach 50 mph! Therefore, widespread blowing dust and unhealthy levels of PM₁₀ are expected. Therefore **a PM10 High Pollution Advisory (HPA) has been issued for Monday.** It wasn't quite a year ago on April 14, 2012 where a cold frontal passage caused an exceedance of the PM₁₀ health standard in the City of Maricopa. The PM₁₀ level reached 200 ug/m³ for a 24-hour average which is above the health standard of 150 ug/m³). Another windblown PM₁₀ event took place on April 21, 2010 when a strong cold front caused blowing dust and a PM₁₀ exceedance at the Cowtown monitor. The take home message, PM₁₀ exceedances can and do occur during the month of April, so be prepared and stabilize loose ground surfaces prior to the strong winds and minimize outdoor activities during periods of blowing dust.

The ozone levels for the next several days will be in the good AQI category due to the cooler temperatures. **The PM₁₀ levels will be in the good to low moderate range today and unfortunately reach the Unhealthy AQI category on Monday due to the widespread blowing dust.** Everyone should limit outdoor activities on Monday so as to minimize health impacts. Stay safe, remember pull aside, stay alive if you find yourself driving through areas with reduced visibilities. Forecaster – S. DiBiase

COWTOWN (Twitter: Cowtown AQI)					
	YESTERDAY SAT 4/6/13	TODAY AQI FORECAST SUN 4/7/13	TOMORROW AQI FORECAST MON 4/8/13	EXTENDED AQI FORECAST TUE 4/9/13	EXTENDED AQI FORECAST WED 4/10/13
PM-10*	58	115	250	100	90

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

**AIR QUALITY FORECAST BY LOCATION FOR
PM-10 (PARTICLES)**

SITE NAME	TODAY AQI FORECAST SUN 4/7/13	TOMORROW AQI FORECAST MON 4/8/13	EXTENDED AQI FORECAST TUE 4/9/13	EXTENDED AQI FORECAST WED 4/10/13
Apache Junction (Twitter: AJ AQI)	22	110	50	40
Casa Grande (Twitter: CG AQI)	37	160	60	45
Eleven Mile Corner (Twitter: PC Housing AQI)	44	190	70	50
Maricopa (Twitter: MaricopaCity AQ)	42	180	75	55
San Tan Valley (Twitter: Santan AQI)	43	155	70	55
Stanfield (Twitter: Stanfield AQI)	55	190	80	60

OZONE*

SITE NAME	TODAY AQI FORECAST SUN 4/7/13	TOMORROW AQI FORECAST MON 4/8/13	EXTENDED AQI FORECAST TUE 4/9/13	EXTENDED AQI FORECAST WED 4/10/13
Apache Junction (Twitter: AJ AQI)	49	45	47	48
Casa Grande (Twitter: CG AQI)	49	45	50	49
Pinal Air Park (Twitter: PAP AQI)	50	48	49	49

AIR POLLUTANTS IN DETAIL

PM-10 & PM-2.5 (PARTICLES):

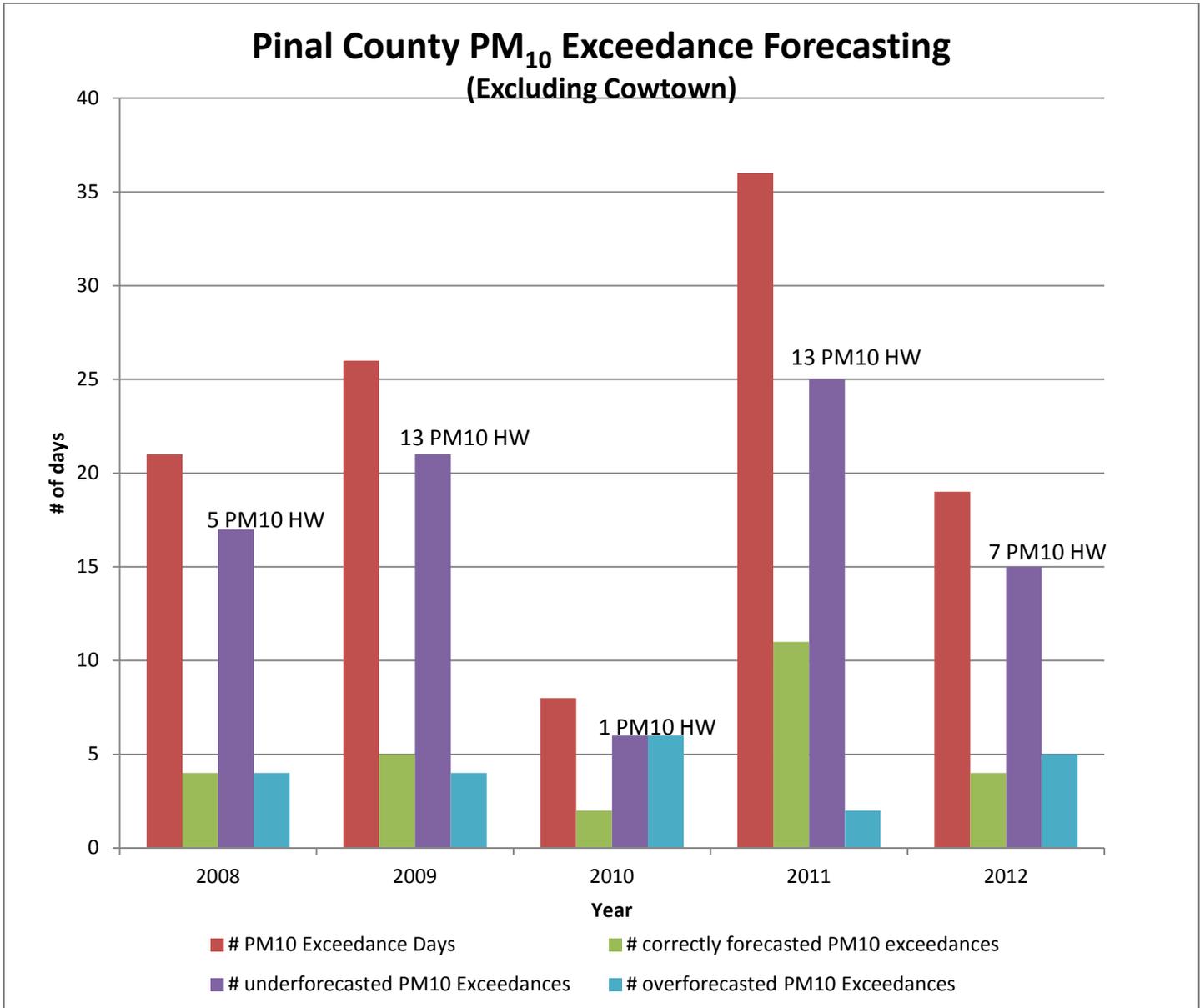
Description – The term “particulate matter” (PM) includes both solid particles and liquid droplets found in air. Many manmade and natural sources emit PM directly or emit other pollutants that react in the atmosphere to form PM. Particles less than 10 micrometers in diameter tend to pose the greatest 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.

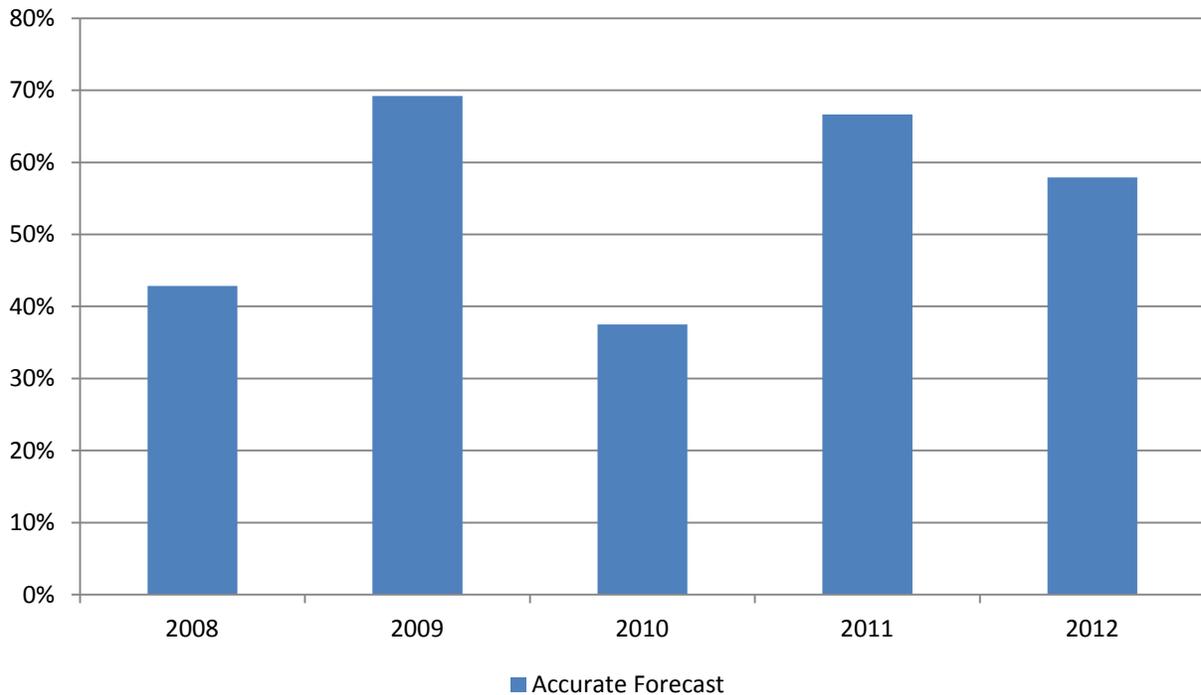
Potential health impacts – PM can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases, such as asthma and chronic bronchitis.

Pinal County Air Quality AQI Forecast Accuracy

- For the years 2008-2012, approximately six out of every ten PM10 Exceedances are accurately forecasted (i.e. PM₁₀ HW or HPA is issued on a PM₁₀ Exceedance day)
- Approximately four days/year are over forecasted (i.e. exceedance forecasted and didn't occur)
- See graphs below



Accurate Pinal County PM10 Exceedance Forecasts (PM10 HW or HPA forecasted on Actual Exceedance Day)



Pinal County PM10 Exceedances vs. High Wind/Low Wind

