

# 7<sup>th</sup> Annual Dust Storm Workshop

## Feb. 27, 2018

### New Polygon Dust Storm Warnings

**Ken Waters**

**Warning Coordination Meteorologist  
National Weather Service, Phoenix**

# Long-time Problems with NWS Dust Storm Warnings

- Covered very large areas
- Warning text mixed in with other unrelated weather alerts (e.g., wind, heat) creating user confusion
- Internally they were difficult and time-consuming to issue for NWS forecasters (many steps and text often had to be edited, making it error-prone)
- When Wireless Alerts started in 2012 NWS was plagued with extreme over-warning and targeting problems

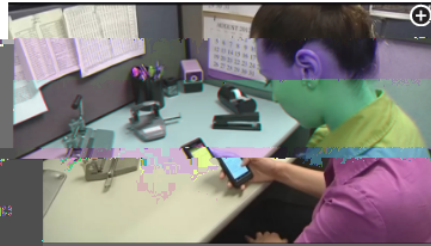
# WEA Issues

## Why people miles from Arizona's dust storm got alerts on their cell phones

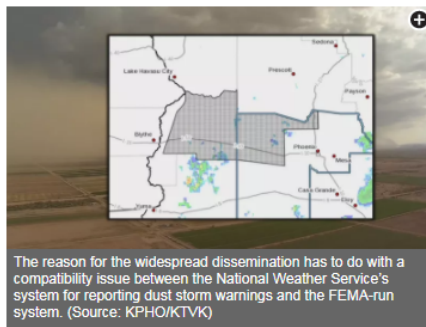
Posted: Jul 20, 2016 11:00 PM  
Updated: Jul 20, 2016 11:43 PM

By Derek Staahl [CONNECT](#)

**MESA, AZ (3TV/CBS 5)** - As a dust storm rolled through western Maricopa and Coconino counties, heading toward the Arizona border, people seemingly nowhere near the storm's path received weather alerts on their cell phones.



People miles from the storm's path received weather alerts on their cell phones that wasn't close to them. (Source: KPHO/KTVK)



The reason for the widespread dissemination has to do with a compatibility issue between the National Weather Service's system for reporting dust storm warnings and the FEMA-run system. (Source: KPHO/KTVK)

Riverside County folks, if you got a dust storm warning on our phone, Blythe is the area of concern. The Coachella valley is not affected!" wrote the [National Weather Service office in San Diego on Twitter](#).

People in the Valley of the Sun first got an alert at 5:10 p.m., followed by a second message a few minutes later with corrected information about limited visibility.

The reason for the widespread dissemination has to do with a compatibility issue between the National Weather Service's system for reporting dust storm warnings and the FEMA-run [Wireless Emergency Alert system](#), according to NWS meteorologist James Sawtelle.

During weather events like flash flood and tornado warnings, NWS meteorologists will draw a shape – a

**SOURCE: <http://www.azfamily.com/story/32495057>**

LOCAL NEWS **SOURCE: <https://www.pe.com/2013/08/23> (The Press-Enterprise)**

## RIVERSIDE: Weather warning sends wrong message



By **CASSIE MACDUFF** | Press-Enterprise  
August 23, 2013 at 7:57 pm

Did you get the dust-storm warning from the National Weather Service on your smart phone on Thursday, Aug. 22?

A little before 6 p.m., my iPhone blared the long, loud, emergency tone. When I read the text, it didn't say where the storm was but it warned, "avoid travel" and "check local media."

Local media? That's us.

I asked our weather gurus about this dangerous storm.

They hadn't received any kind of news release from the weather service, and a check of the NWS website didn't yield anything. Googling finally revealed the problem was around Blythe and western Arizona.

Why were people in downtown Riverside being warned of a dust storm in Blythe and told to avoid travel?

That was the new wireless emergency alert system at work, National Weather Service spokeswoman Susan Buchanan told me on Friday. In service a year, it's coming to a smart phone near you.

When there's severe weather — dust storm, tornado, hurricane — or danger of flash flooding, wireless carriers voluntarily broadcast the warnings to their customers, Buchanan said.



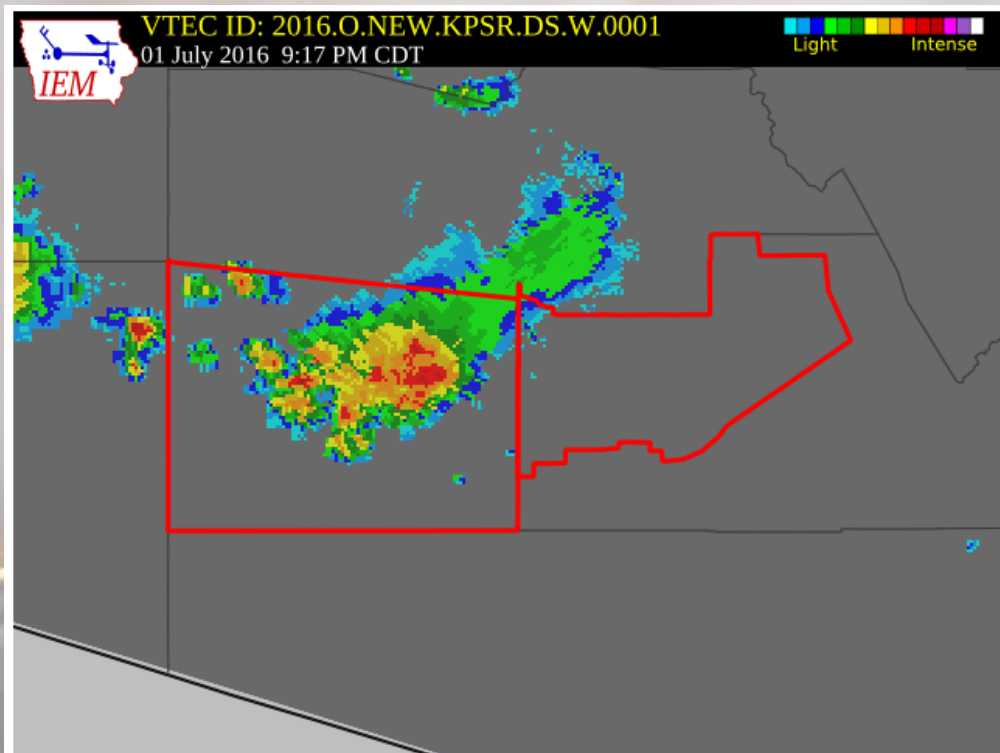
# Two Big Changes

- New Public Zones
  - Established April 4, 2017
- New Polygon Dust Storm Warnings
  - Coming Soon

# The Old...

## Before Apr 2017

- Dust storm warnings issued by public “zones”



WWUS75 KPSR 020217  
NPWPSR

URGENT - WEATHER MESSAGE  
NATIONAL WEATHER SERVICE PHOENIX AZ  
717 PM MST FRI JUL 1 2016

AZZ027-028-020400-  
/O.NEW.KPSR.DS.W.0001.160702T0217Z-160702T0400Z/  
SOUTHWEST MARICOPA COUNTY-  
NORTHWEST AND NORTH CENTRAL PINAL COUNTY-  
INCLUDING THE CITIES OF...GILA BEND...APACHE JUNCTION...  
CASA GRANDE...COOLIDGE...FLORENCE  
717 PM MST FRI JUL 1 2016

...DUST STORM WARNING IN EFFECT UNTIL 9 PM MST THIS EVENING...

THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A DUST STORM  
WARNING...WHICH IS IN EFFECT UNTIL 9 PM MST THIS EVENING.

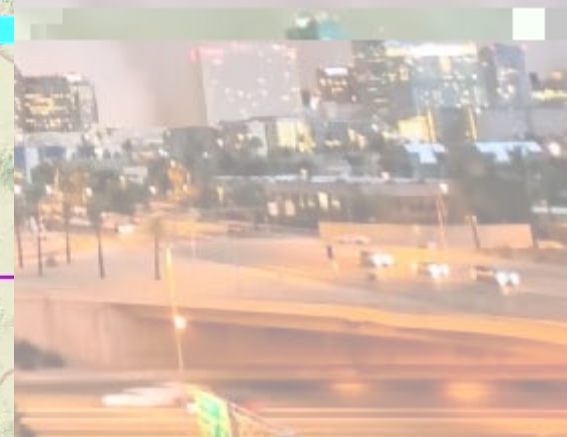
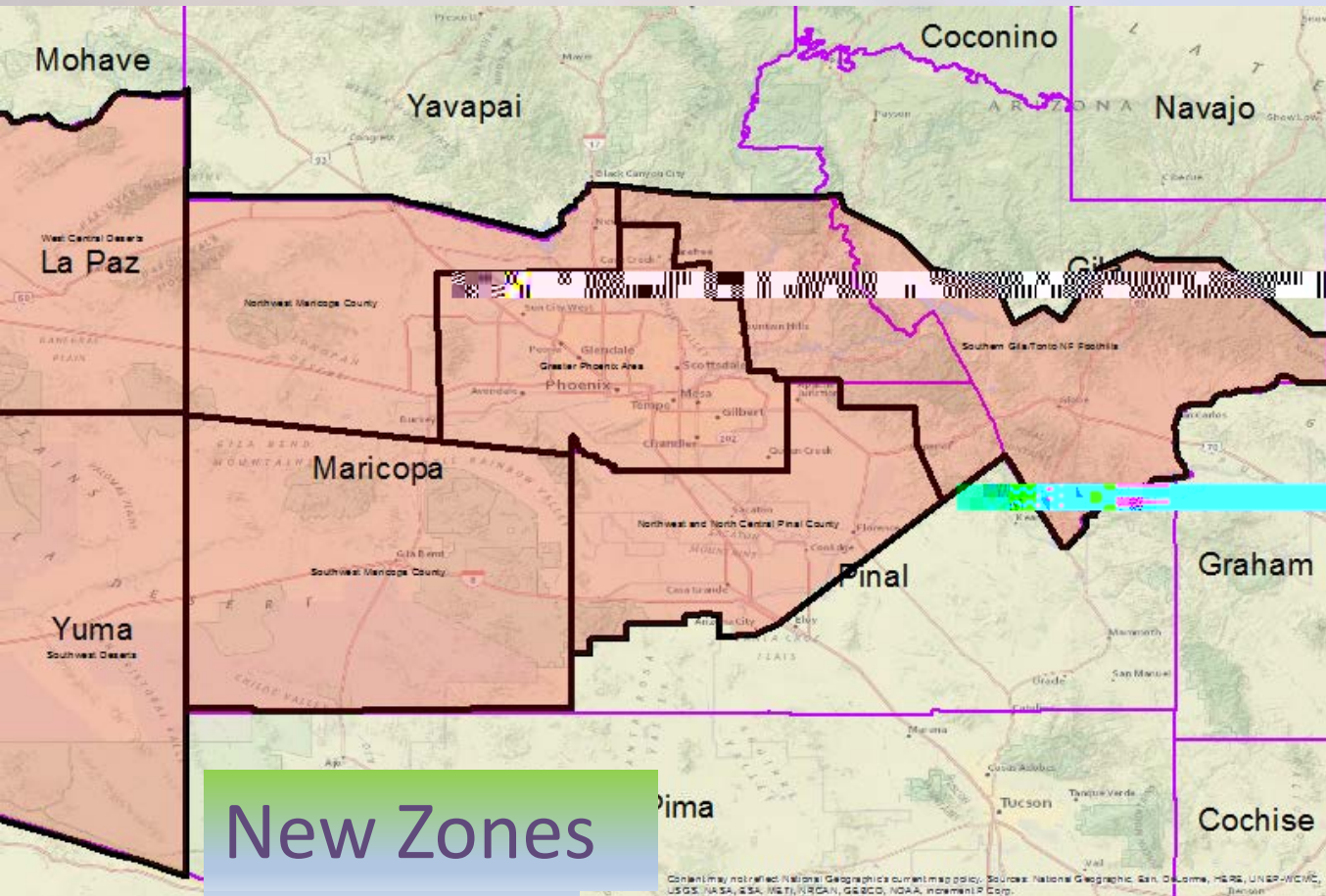
\* AFFECTED AREA...SOUTHWEST MARICOPA COUNTY AND WESTERN PINAL COUNTY  
INCLUDING GILA BEND...MOBILE...AND MARICOPA. AFFECTED ROADWAYS  
INCLUDE HIGHWAY 85 AND INTERSTATE 8.

\* TIMING...UNTIL 9 PM

\* WINDS...GUSTS OVER 40 MPH.

# New Zones for NWS Phoenix

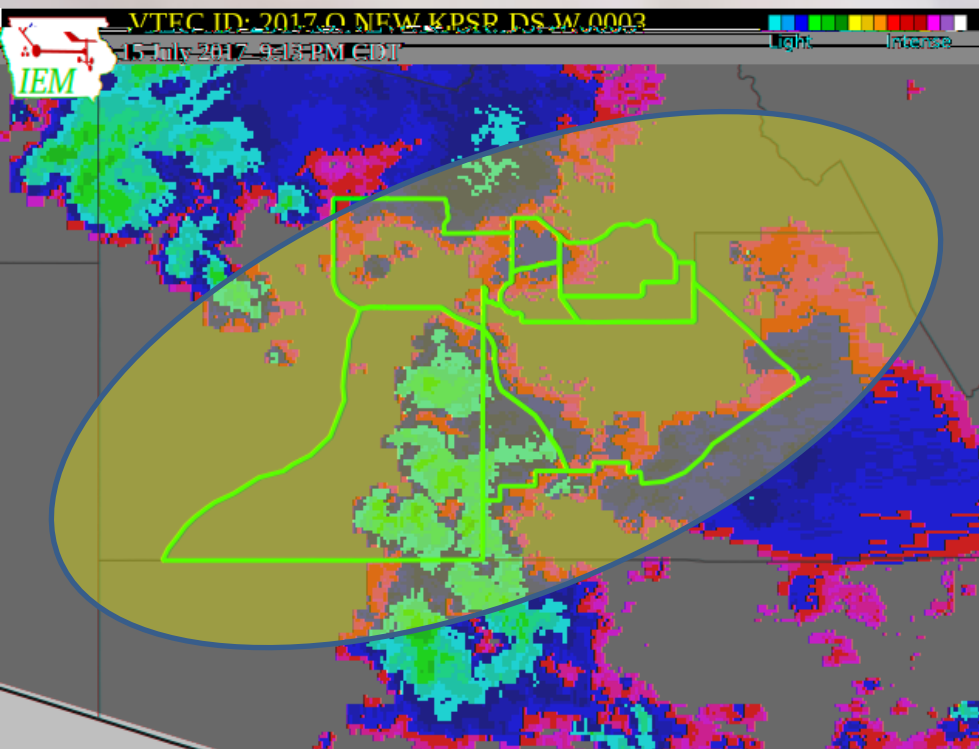
- Changed April 4, 2017





# The Now...

## April 2017 – Now +



WWUS75 KPSR 160213  
NPWPSR

URGENT - WEATHER MESSAGE  
National Weather Service Phoenix AZ  
713 PM MST Sat Jul 15 2017

AZZ540-543-548-550-551-160315-  
/O.EXA.KPSR.DS.W.0003.000000T0000Z-170716T0300Z/  
Buckeye/Avondale-Central Phoenix-East Valley-  
South Mountain/Ahwatukee-Southeast Valley/Queen Creek-  
Including the cities of Avondale, Cashion, Goodyear, Liberty,  
Mesa, Chandler, Tempe, Gilbert, Sun Lakes, and Queen Creek  
713 PM MST Sat Jul 15 2017

...DUST STORM IMPENDING IN EFFECT UNTIL 8 PM MST THIS EVENING...

The National Weather Service in Phoenix has issued a Dust Storm Warning, which is in effect until 8 PM MST this evening.

AFFECTED AREA...The Phoenix Metro Area...

- \* TIMING...Through 8 pm.
- \* WINDS...Gusts as high as 40 mph.
- \* VISIBILITY...As low as one quarter of a mile.
- \* IMPACTS...Low visibilities in dust will produce hazardous driving conditions.

# Better?

- Well, yes.....
- Warnings can now be issued for smaller areas
- **BUT**.... How are these getting to the public?
- Unless people check NWS website or watch media --- they don't get the advantage
- **Cell Phones STILL fire off across entire counties, sometimes hundreds of miles away**

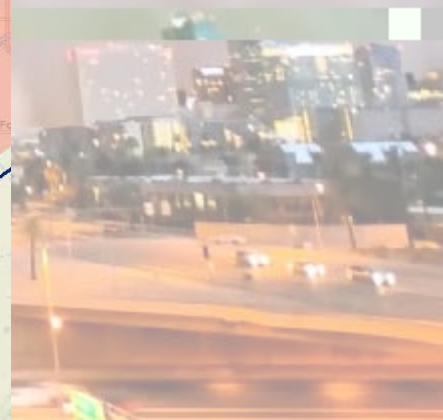
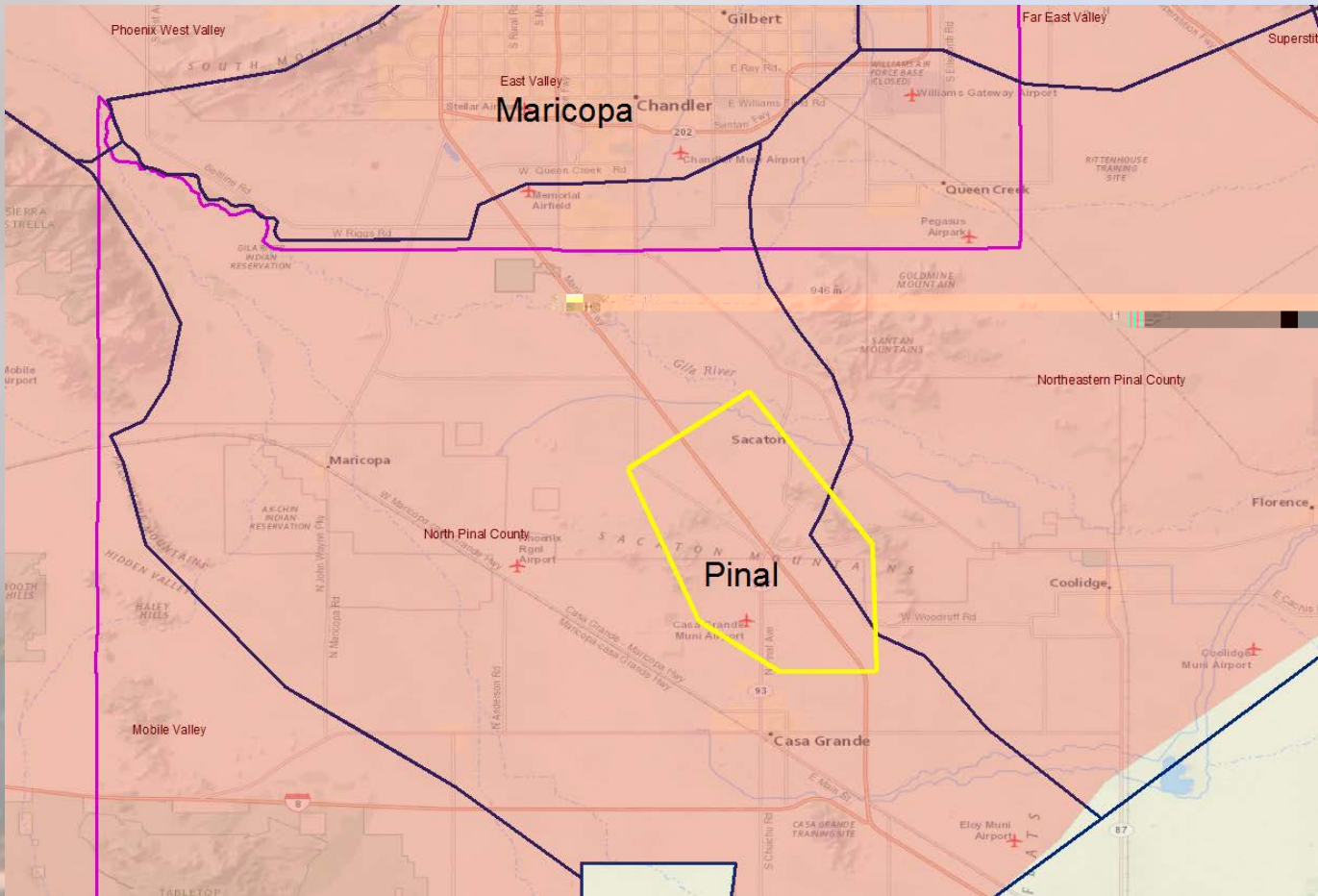




# The Future...

June 2018 [???] +

- Currently set for June 20<sup>th</sup> 2018



# Why is This Important?

- Very quick for NWS to issue, thus providing more warning
- Less confusion--- it's now a Dust Storm Warning and not mixed in with other unrelated weather phenomenon
- Smaller warning footprint thus **dramatically** reducing the number of cell phone alerts sent

# Why is This Important?

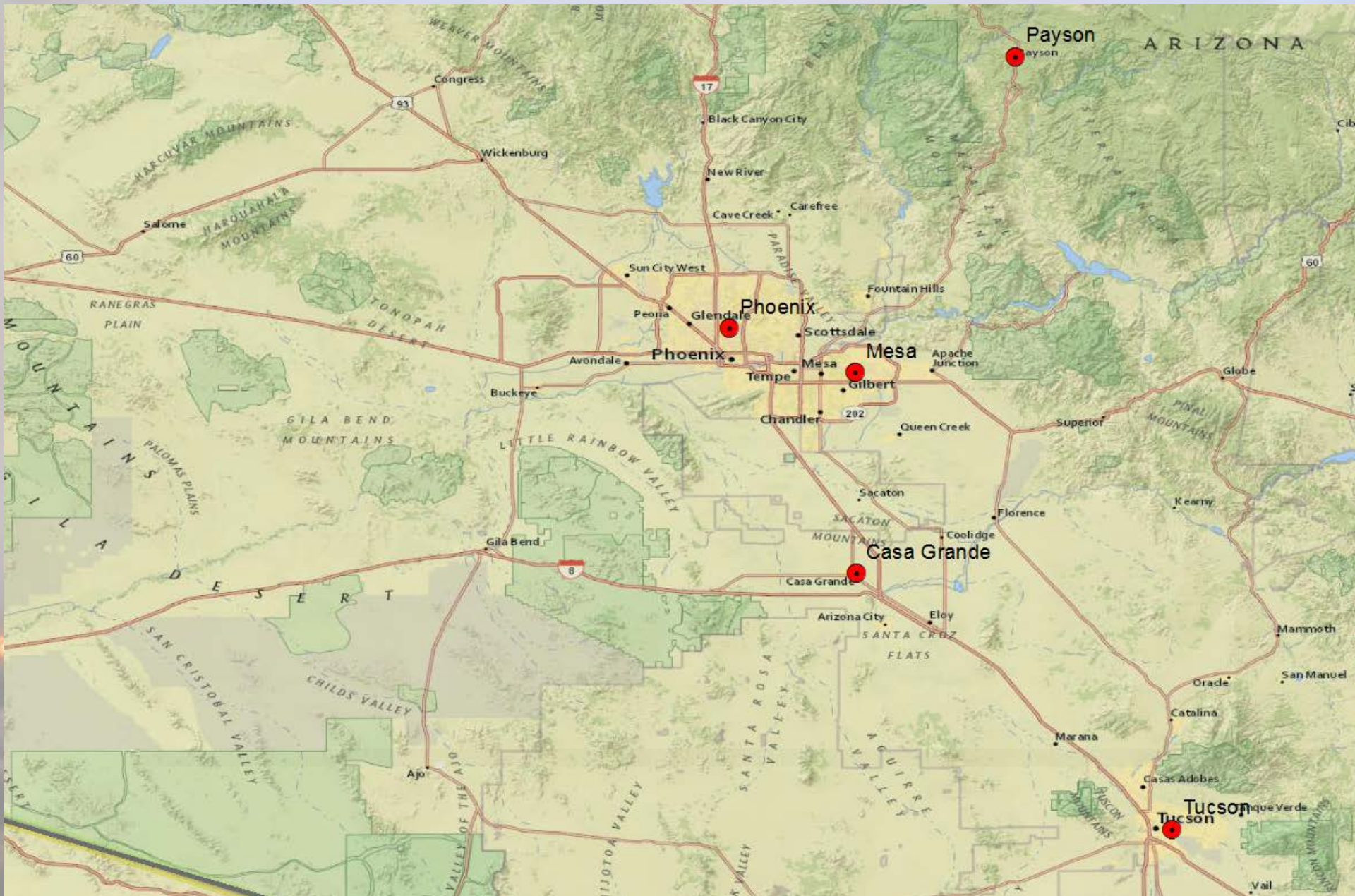
- Wireless Emergency Alerts (PSA [link](#))
- Once polygon warnings established the number of those alerted by cell phone will be dramatically reduced





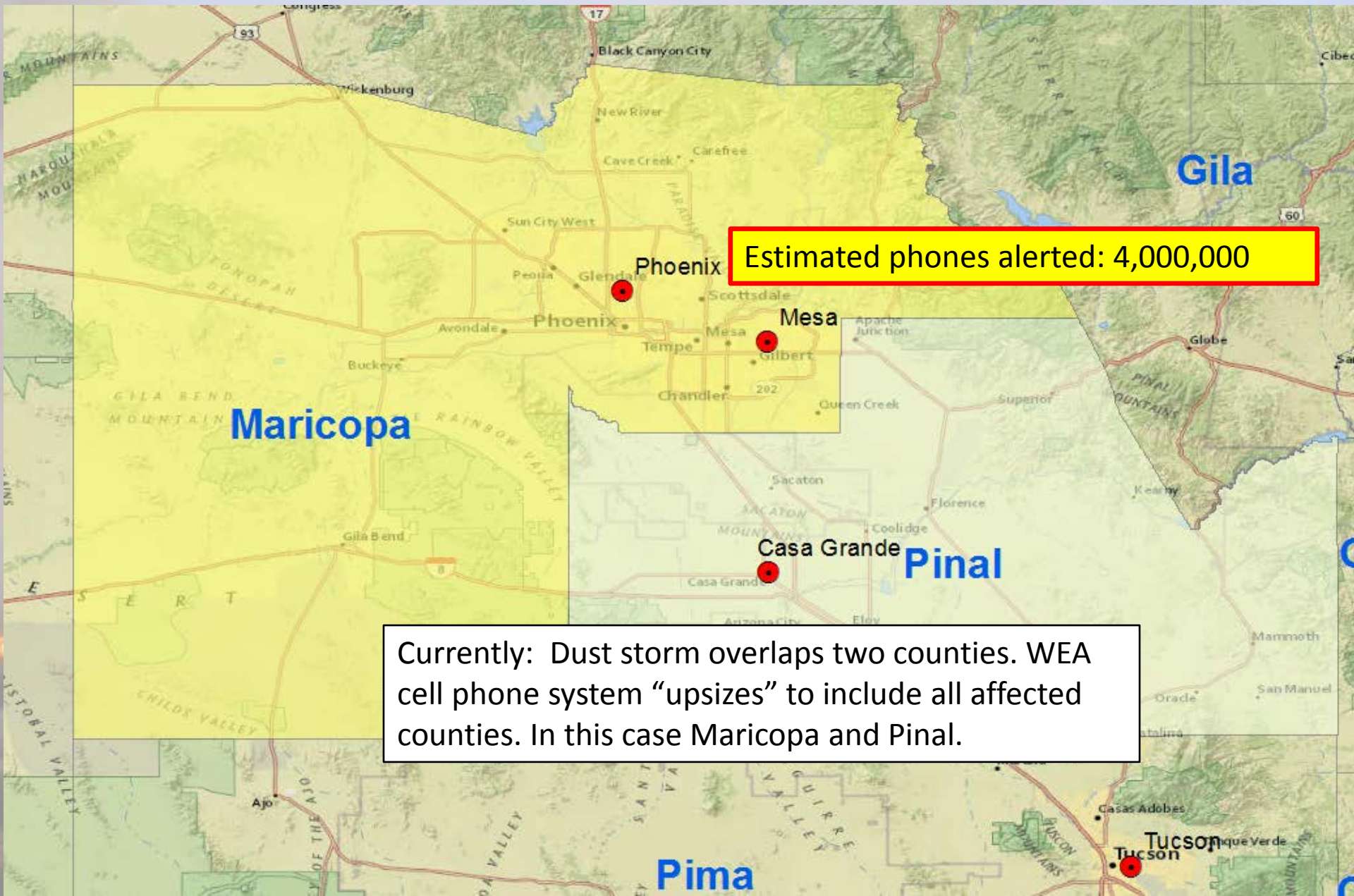
Put another way...

# New Polygon Dust Storm Warnings





# New Polygon Dust Storm Warnings

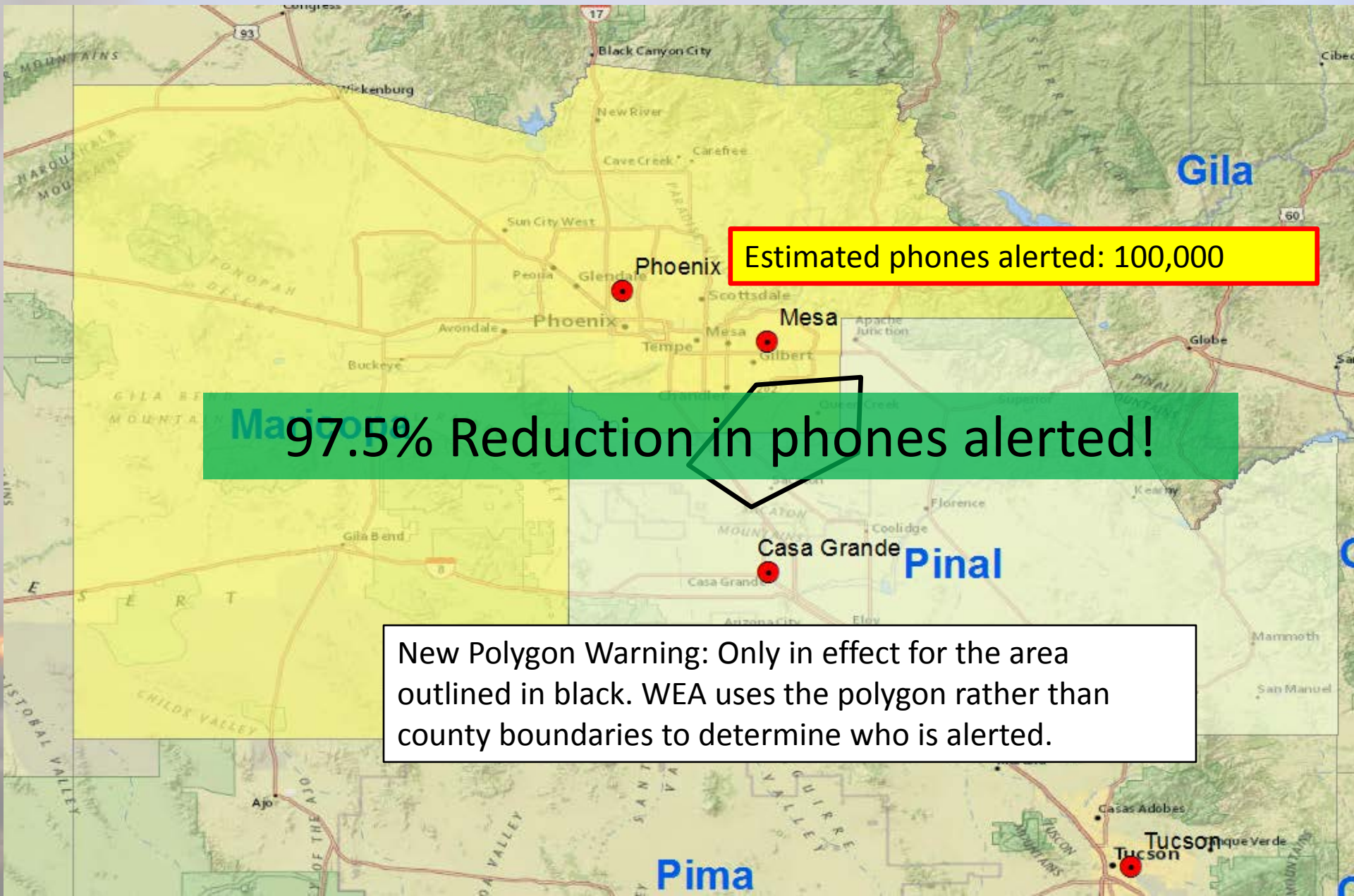


Estimated phones alerted: 4,000,000

Currently: Dust storm overlaps two counties. WEA cell phone system “upsizes” to include all affected counties. In this case Maricopa and Pinal.



# New Polygon Dust Storm Warnings



Estimated phones alerted: 100,000

97.5% Reduction in phones alerted!

New Polygon Warning: Only in effect for the area outlined in black. WEA uses the polygon rather than county boundaries to determine who is alerted.

# Mark the Date!

- June 20<sup>th</sup>, 2018
  - Initial offering will be ONLY Phoenix and Tucson weather offices
  - Nationwide a few months later
- Date occurring right in the onset of the monsoon season could cause some initial confusion, especially for media and emergency managers and responders!
- Assuming it's not delayed for the 5<sup>th</sup> time....!



# WEA Changes

- System started 2012
- Programmed changes:
  - By Nov 2019
  - Reduced “overspill”
  - Increase from 90 chars up to 360
  - Spanish language
  - Map links
  - Additional enhancements being worked on by new NWS team





# Mile Markers Added to Warnings

- New polygon warnings from NWS Phoenix will include mile markers beginning this summer!

Text Warngen: PHXSVRPSR

File Edit Options Version Tools Scripts Products

AWIPS ID: WMO TTAaii CCCC: AFOS Cmc:

\* THIS IS A TEST MESSAGE. Severe Thunderstorm Warning for...  
Central La Paz County in west central Arizona...  
Riverside County in southern California...

\* THIS IS A TEST MESSAGE. Until 930 AM MST/830 AM PST/  
TO A SEVERE THUNDERSTORM... a severe  
thunderstorm was located near Quartzsite, or 30 miles south of  
Parker, moving northeast at 55 mph.

HAZARD...! \*\*YOU DID NOT SELECT ANY SEVERE WIND OR HAIL THREATS.  
PLEASE CLOSE THIS WINDOW AND RE-GENERATE THIS WARNING! \*\*!

SOURCE...Radar indicated.

IMPACT...! \*\*YOU DID NOT SELECT ANY SEVERE WIND OR HAIL THREATS.  
PLEASE CLOSE THIS WINDOW AND RE-GENERATE THIS WARNING! \*\*!

\* THIS IS A TEST MESSAGE. Locations impacted include...  
Blythe, Quartzsite, Nicholls Warm Springs, Blythe Airport, Bouse,  
Ripley, East Blythe and Ehrenberg.

\* This includes the following highways...  
AZ Interstate 10 between mile markers 1 and 28.  
CA Interstate 10 between mile markers 143 and 156.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

For your protection move to an interior room on the lowest floor of a  
building.

&&

THIS IS A TEST MESSAGE. DO NOT TAKE ACTION BASED ON THIS MESSAGE.

1368

\* This includes the following highways...  
AZ Interstate 10 between mile markers 1 and 28.  
CA Interstate 10 between mile markers 143 and 156.

# Weather-Ready Nation

- The NWS is looking for Weather Ready Nation Ambassadors!
- Formal recognition of our partners to improve readiness, responsiveness, and resilience against extreme weather events.
- Sign up sheets are on the table up front.



# Questions?

Ken Waters

[Ken.waters@noaa.gov](mailto:Ken.waters@noaa.gov)

Personal Twitter: @wxphx

Office Twitter:

@nwsPhoenix

602-275-7002 x223

