

7th Annual Dust Storm Workshop

Feb. 27, 2018

New Polygon Dust Storm Warnings

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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

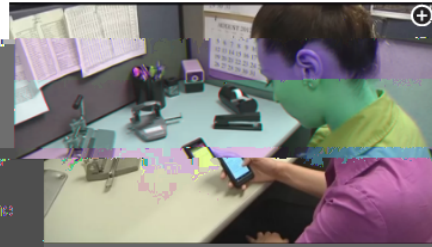
WEA Issues

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.



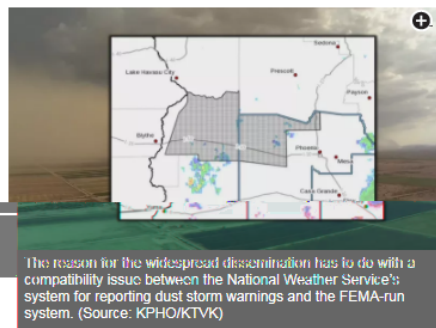
People miles from the storm's path received alerts on their phones that wasn't close to them. (Source: KPHO/KTVK)

...in the San Francisco area reported the emergency alerts on Twitter, with some wondering why the messages were broadcast so widely.

Riverside County folks, if you got a dust storm warning on your 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.



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)

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

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.

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

Ken Waters, NWS Phoenix, ken.waters@noaa.gov, Feb. 27, 2018

Two Big Changes

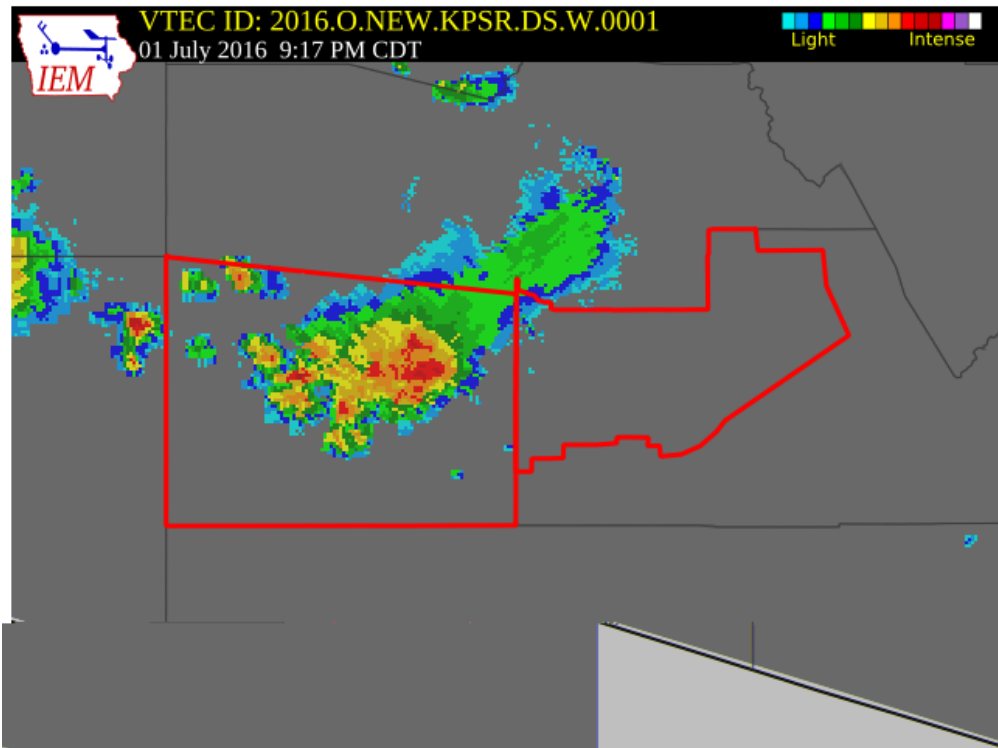
- New Public Zones
 - Established April 4, 2017

- 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.

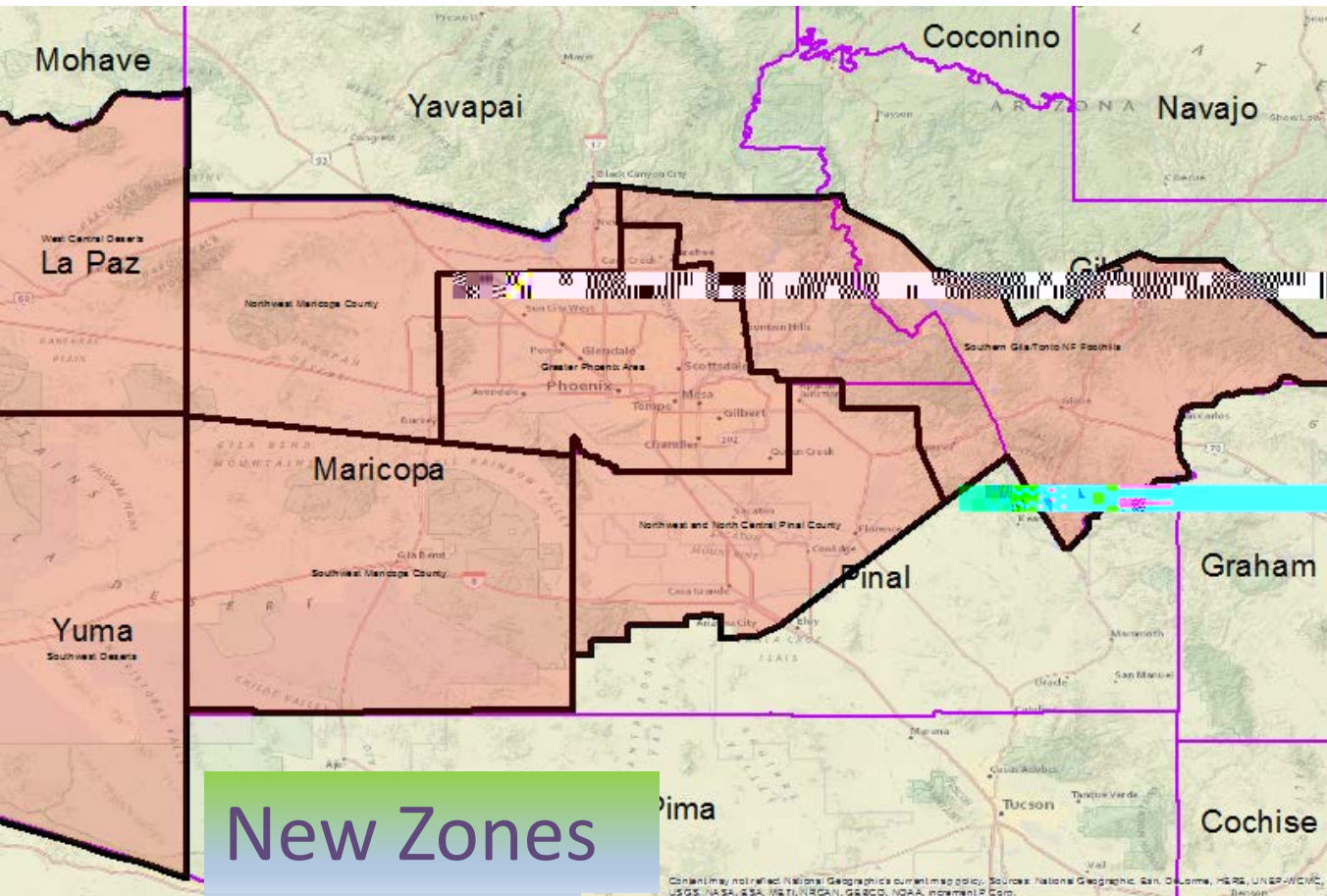
* AFFECTED AREA...SOUTHWEST MARICOPA COUNTY AND WESTERN PINAL COUNTY
INCLUDING GILA BEND...MOBILE...AND MARICOPA. AFFECTED ROADWAYS
INCLUDE HIGHWAY 85 AND INTERSTATE 8.

* TIMING...UNTIL 9 PM

* WINDS...GUSTS OVER 40 MPH.

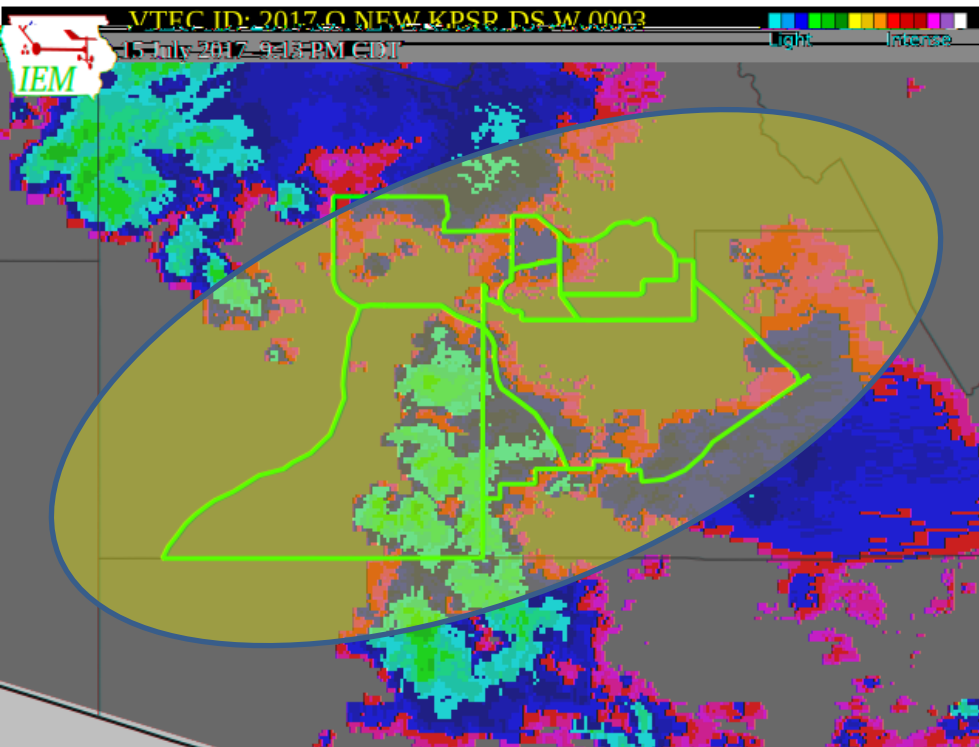
New Zones for NWS Phoenix

- 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...

... 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 20th 2018
 - BUT: has been postponed 4 times so far (was originally set for Oct 2017)

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!

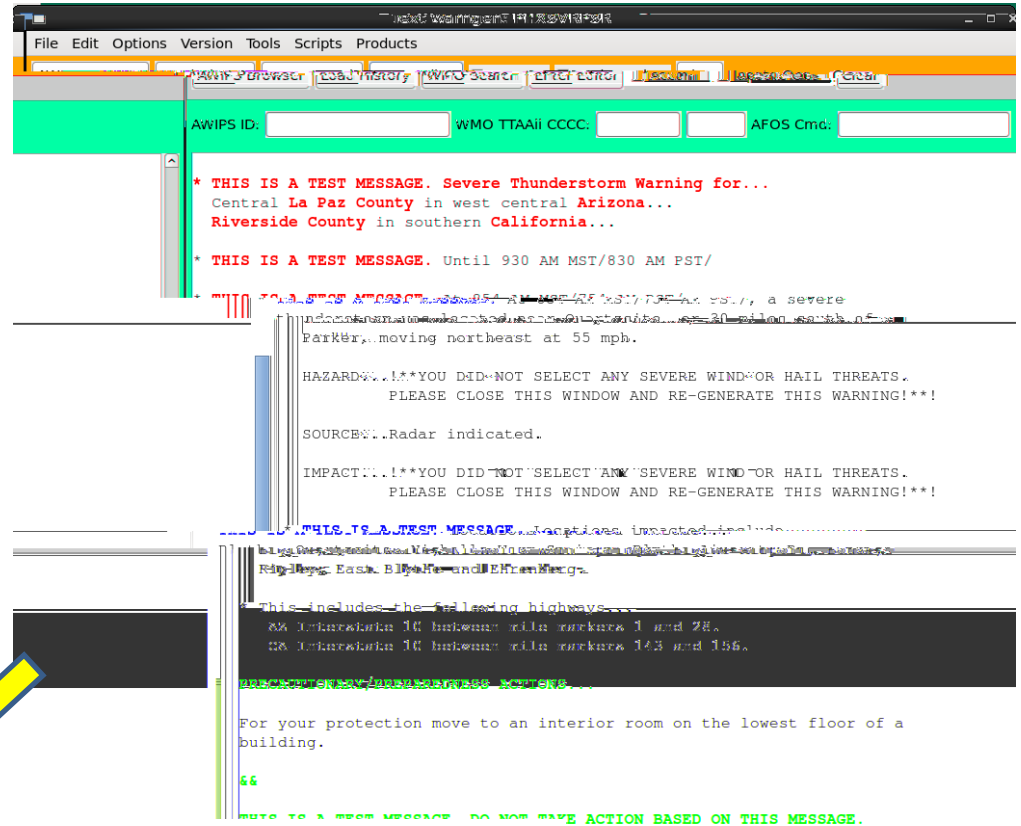
- June 20th, 2018
 - Initial offering will be ONLY Phoenix and Tucson weather offices
 - Nationwide a few months later
- Date occurring right in the onset of the monsoon season could cause some initial confusion, especially for media and emergency managers and responders!
- Assuming it's not delayed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



* 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?

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