

**Experimental Severe Weather Impact Graphics
Product Description Document (PDD)
May 2020**

Part I - Mission Connection

- a. **Product Description** – This experimental product displays certain watches and short-fuse warnings issued by National Weather Service (NWS) Weather Forecast Offices (WFOs) and the Storm Prediction Center (SPC) in an infographic depicting the watch or warning area as well as GIS-informed exposure information.

The original version of this product included only the watches and warnings related to tornadoes, severe thunderstorms, and flash flooding. The latest update of this product expands the suite of warning-related infographics for additional hazard types, each focusing on impacts unique to that hazard type in addition to the geographical area representation. A full listing of the included short-fuse watch and warning products can be found in the Presentation Format section and the Technical Description section below.

- b. **Purpose** – The purpose of providing NWS graphical depictions of certain short-fuse warnings and watches is to increase accessibility to these life-saving products via interfaces that are not conducive to the display of long fuse products. The initial iteration of these experimental and publicly-available infographics on social media platforms has gained unprecedented exposure for real-time viewing and sharing of NWS watches, warnings, and warning update products, primarily convective threats (tornadoes, flash floods, and severe wind and hail). The success and exposure of these infographics has led to requests for an expanded suite that includes other short-fuse NWS warnings.

The ability to automatically update the news feeds of social media accounts with these infographics allows for a wide reach to external users that specifically subscribe to receive this information. Interested parties also have the capability to further distribute this information to potentially larger audiences by instantiating sharing “retweeting” or posting to other social media platforms (i.e. Facebook).

- c. **Audience** – The graphical product is intended for general use by the public and NWS Core Partners in the broadcast/electronic media, the community of emergency managers, and other government agencies.

d. **Presentation Format**

- 1) During the experimental period, three dedicated Twitter accounts, @NWSTornado, @NWSSevereTstorm, and @NWSFlashflood will continue to provide their unique watch and warning infographics. The added NWS warnings (a full listing is in the next section) will automatically post on the Twitter account of the issuing WFO. This is to reduce the number of total individual accounts that would need to be maintained and monitored and so that the relevant graphics will be highlighted on the account of that issuing office.

A list of current NWS WFO Twitter accounts can be found through this link: <https://twitter.com/NWS/lists/noaa-aws-offices/members>. The rapid dissemination of these infographics provide critical life-saving warning and watch information to NWS Twitter account followers without the need for further intervention.

- 2) For this experimental period, the four new warning product graphics will be added to the current suite are as follows:

- Dust Storm Warning (polygon-based only)
- Snow Squall Warning
- Special Marine Warning and Marine Weather Statement updates to the appropriate and associated Special Marine Warning

- Extreme Wind Warning and updates (issued for land-falling tropical cyclones; namely focused on the the “eye wall” region over land)
- e. **Feedback Method** – Comments are requested on national availability of the Experimental Severe Weather Impact Graphics. These infographics support short-fuse warnings and watches produced by all local offices, and for Twitter-based dissemination from all local office accounts. Web-based feedback will be solicited via an NWS Customer Survey link at <https://www.surveymonkey.com/r/SevereWeatherImpactGraphics>, from May 18, 2020 through April 30, 2021. Comments during this period will also be accepted via email to nws.ipwg@noaa.gov. Comments may also be provided to:

Greg Schoor
NWS Severe Weather Program Leader, NWS Headquarters
Norman, OK 73069

Derek Deroche
Emerging Tech and Weather Services Program Manager, NWS Central Region Headquarters
Kansas City, MO 64153

Part II – Technical Description

- a. **Format and Science Basis** – The experimental graphical product is in Portable Network Graphic (PNG) format. The standard layout of the infographic that applies for each of the included watch, warning, or warning update is as follows:
 - A color-coded headline section, displaying the watch or warning name (e.g. Tornado Warning, Flash Flood Watch, Dust Storm Warning).
 - A single large main panel, encompassing roughly the right side two-thirds of the graphic that depicts the geographical area of the watch or warning area with a basic map background. Polygon-based warnings will have the exact geographic area of the polygon (initial issuance and updates), zoomed-in on the map-view in a way to display the entire polygon area, regardless of size. This map view displays county/parish boundaries, selected communities, interstate highways, and U.S. highways.
 - Interstate highway, U.S. highway, and railroad information are derived from the [National Transportation Atlas](#) 2014 Edition. Counts of public schools and hospitals in the warning area are derived from the Homeland Security Information Network Freedom data set, 2013 Edition. The actual locations and names of schools and hospitals will not be included in the graphic.
 - A smaller secondary panel provides a regional (zoomed-out) overview of the area depicted with the warning area in the center, as well as area interstate highways and US states within that inset view panel. This panel inhabits the lower left-hand corner of the graphic.
 - Timing specifics of the watch, warning, or warning update appear in the top left-hand portion of the graphic, under the headline portion. This area of the graphic displays the following information: “Valid Until [local time] [time zone] [day] [full date (e.g. April 16, 2019)].”
 - The “Threat Information” section is located below the timing section. Storm information is displayed on warning graphics associated with Severe Thunderstorm Warnings and Tornado Warnings. Maximum forecast hail size, maximum expected wind gusts, and the basis for the Tornado Warning (i.e., radar indicated vs. observed), are included when this information is also

available in the text version of the warning. For the watch graphics, maximum forecast hail size, maximum expected wind gusts and potential tornado intensity are displayed.

- “Ambient” population count data on the graphics derived from the [Landscan Ambient Population Dataset](#) 2017 Edition. Ambient population refers to the population expected to be present in a grid box at any given time, regardless of residency. Therefore, the ambient population is not necessarily equal to the census population. Scientific discussion of the Landscan data set is available from: Bhaduri, B., Bright, E., Coleman, P., Urban, M. "LandScan USA: A High Resolution Geospatial and Temporal Modeling Approach for Population Distribution and Dynamics" *GeoJournal*. 2007. 69: 103-117.
- The “Potential Exposure” section is located below the “Threat Information” section. Statistics in this section, designated to be “impact statistics” based on their inclusion in the watch or warning area are displayed as printed information, not included in the textual versions of the watch and warning products themselves. These statistics include an approximate population count in the warning area and approximate counts of public schools and hospitals within the warning area.

During the experimental period, the graphical products will only be produced for warnings issued within the CONUS. Special Marine Warnings and their updates will be available for OCONUS. Upon analysis of comments during this experimental period, the programmatic addition of short-fuse warning graphics issued by additional NWS Weather Forecast Offices inside and outside of the CONUS will be considered.

Example products are included at the end of this document.

All warning graphics include printed information about the warning. This information includes the type of watch or warning, portions of states, the expiration time, included counties/parishes or other pertinent location-based information such as interstate highways and their nearest intersecting city.

- b. Availability – The experimental graphic will be generated upon first issuance of the text warning product and updated upon issuances of follow-up Severe Weather Statements, Flash Flood Statements, and Marine Weather Statements. The graphics will generally be available on Twitter accounts within about a minute after the text product issuance. Watch graphics for Tornado and Severe Thunderstorm watches will only be generated for the initial watch issuance. At the discretion of WFOs, some of the individual product graphics may not be generated and posted on their Twitter account.

For the suite of products that are associated with the three individual Twitter accounts (@NWSTornado, @NWSSevereTstorm, and @NWSFlashflood), graphics translated into Spanish will also be available during the experimental period. The Spanish formatted graphics and tweets will be available on select WFO twitter accounts where there is a high percentage of Spanish speaking individuals.

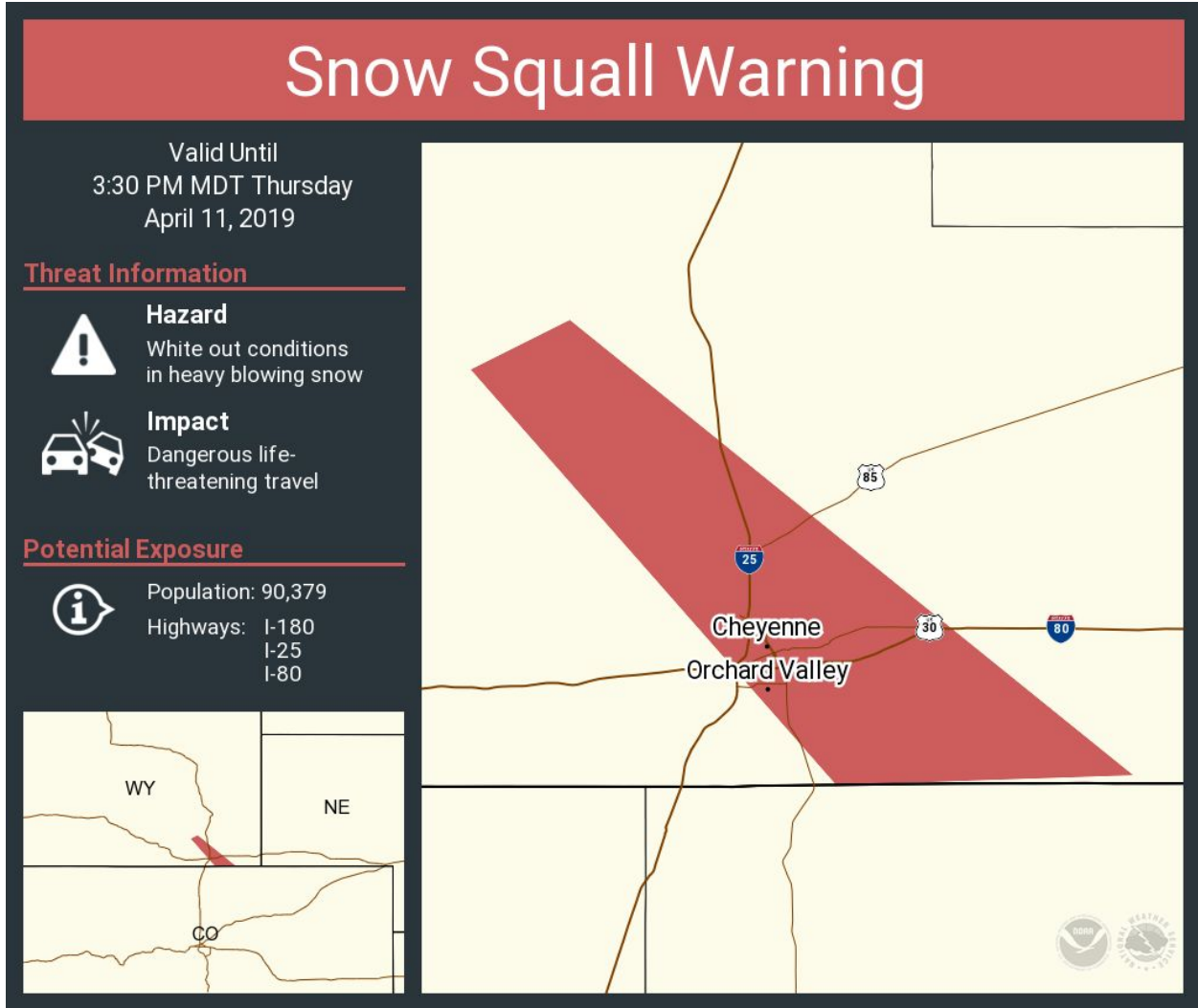
During the experimental period the Twitter dissemination and associated graphics will not be supported during non-business hours, and may become unavailable in the event of software or hardware failure or during periods of Federal Government furlough/closure.

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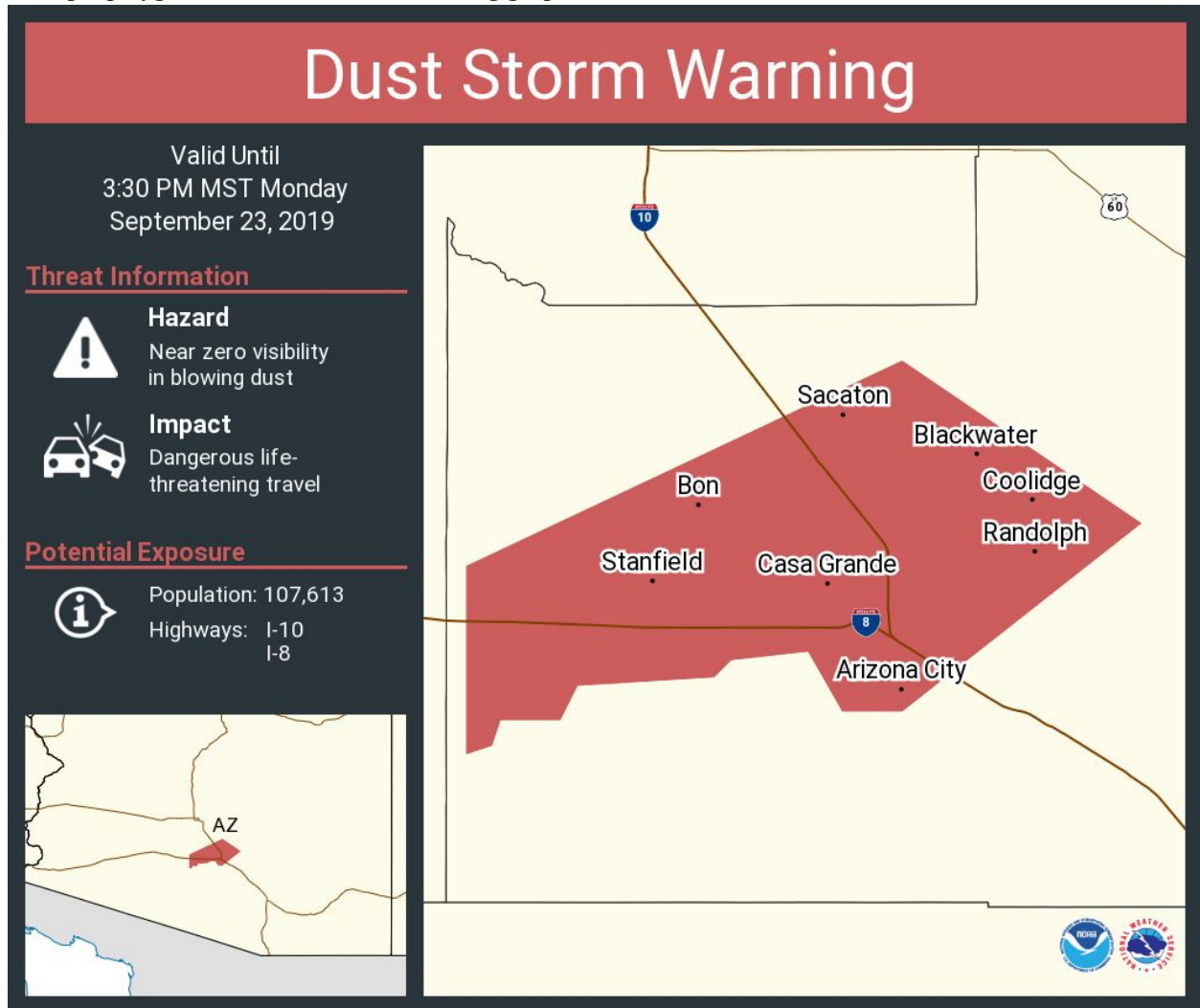
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Example Graphics:

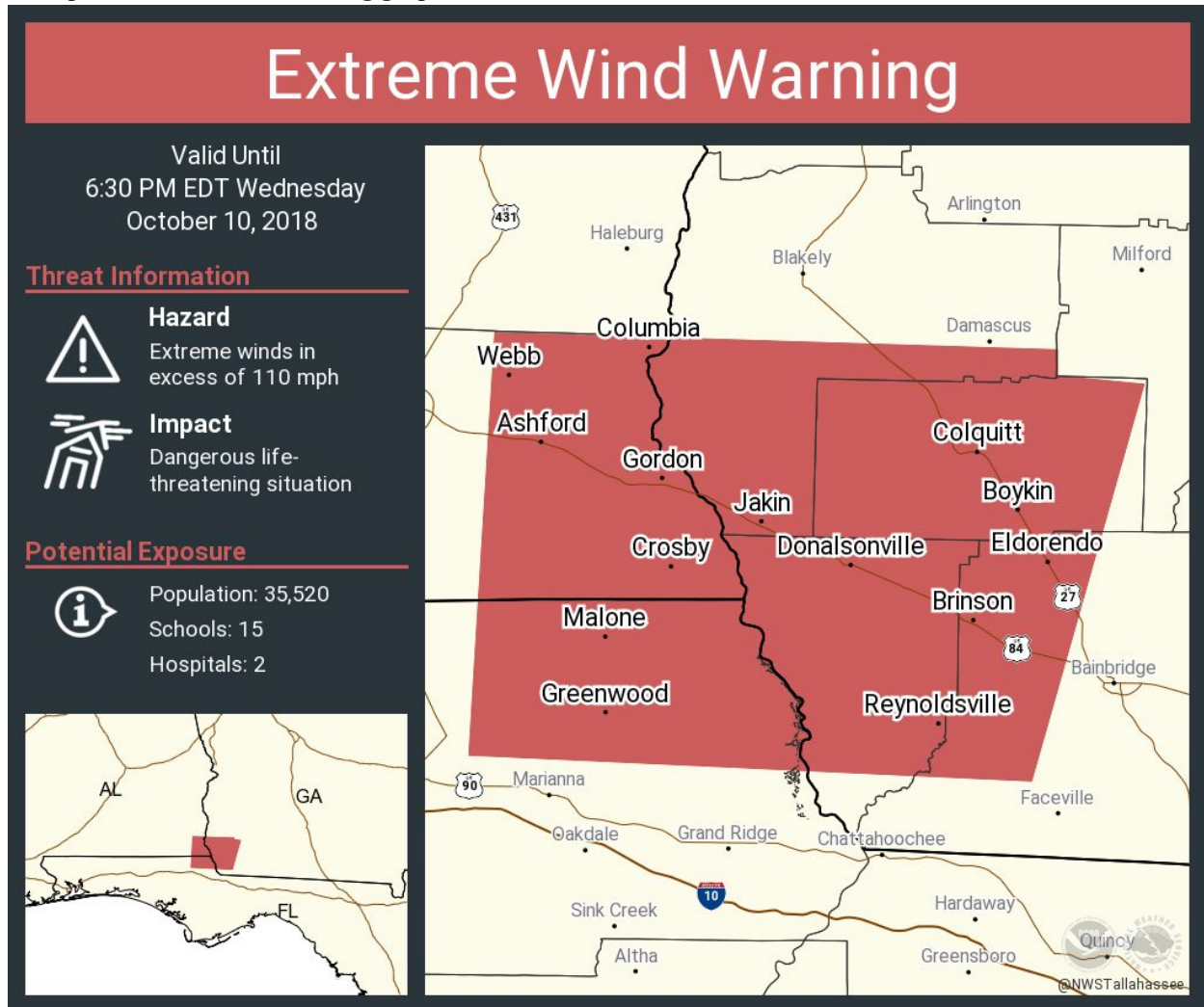
Example Snow Squall Warning graphic:



Example polygon-based Dust Storm Warning graphic:



Example Extreme Wind Warning graphic:



Example Special Marine Warning graphic:

