

Experimental Severe Weather Impact Graphics

Product Description Document (PDD)

July 1, 2016

Part I - Mission Connection

a. Product Description – This experimental product is a graphical depiction of each short-fuse warning and watch product issued by National Weather Service (NWS) Weather Forecast Offices (WFO), in the Contiguous United States (CONUS) only, with inclusion of impact information to supplement the graphics. “Short-fuse warnings” include Tornado, Severe Thunderstorm, and Flash Flood Warnings. “Short-fuse watches” include Tornado and Severe Thunderstorm Watches.

b. Purpose – The purpose of providing NWS short-fuse warnings and watches in graphical format is to increase accessibility to these life-saving products via interfaces that are not conducive to the display of long fuse products. This encourages greater availability and more sharing of the warning or watch message to platforms specializing in rapid sharing of perishable information, such as mobile devices and social media sites.

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

d. Presentation Format –

1) The experimental short-fuse warning graphic is available via a web-based “landing page” at <http://www.weather.gov/crh/impact>. The landing page consists of a table of active short-fuse warnings with columns containing issuing NWS office, warning type, cities affected, issuance time and date, expiration time and date, and total population affected. Users can sort the warning table by any of these columns to more quickly find warning(s) of interest. Upon clicking a row in the table, the associated warning graphic “pops up” on the user’s screen. In addition to the graphic, buttons appear allowing the user to optionally “share” the warning via the user’s own Twitter and Facebook accounts. This design is intended to encourage users to spread the word to their social media connections, increasing the “reach” of the critical warning message.

2) During the experimental period, official Twitter accounts from NWS WFOs will automatically disseminate these experimental graphics. A list of current NWS WFO Twitter accounts can be found at this [link](#). This allows rapid dissemination of critical life-saving warning and watch information to NWS Twitter account followers without the intervention of WFO staff. Dedicated Twitter accounts specific to warning/watch type will also be utilized for public comment during this experimental period. These accounts are:

@NWSTornado

@NWSSevereTstorm

@NWSFlashflood

e. Feedback Method – Comments are requested on national availability of the Experimental Severe Weather Impact Graphics. The intent is for these graphics to be produced to support short-fuse warnings and watches produced by all local offices, and for Twitter-based dissemination from all local office accounts (implementation will take place in a phased manner). Web-based feedback will be solicited via an [NWS Customer Survey link](#) on the landing page, from July dd, 2016. through December 31, 2016. Comments during this period will also be accepted via email to nws.ipwg@noaa.gov. Comments may also be provided to:

Brian Walawender
Chief, Information Technology Branch
NWS Central Region Headquarters
7220 NW 101st Terrace
Kansas City, MO 64153-2371

Part II – Technical Description

a. Format and Science Basis – The experimental graphical product is in Portable Network Graphic (PNG) format. The layout of the graphic depends on whether the graphic is displaying a Tornado Warning, Severe Thunderstorm Warning, Flash Flood Warning, Tornado Watch or Severe Thunderstorm Watch:

1) Tornado Warning graphics and Severe Thunderstorm Warning graphics consist of a single large main panel depicting: the warning area, County/Parish boundaries, selected communities, Interstate highways, and U.S. highways. A smaller secondary panel provides a regional overview of the area depicted with the warning area, Interstate highways and US states displayed.

2) Flash Flood Warning graphics consist of a single large main panel depicting: the warning area, County/Parish boundaries, selected communities, Interstate highways, lakes, ponds, rivers, creeks, canals and U.S. highways. A smaller secondary panel provides a regional overview of the area depicted with the warning area, Interstate highways and US states displayed.

During the experimental period, the graphical products will only be produced for warnings issued within the CONUS. 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.

3) Tornado Watch and Severe Thunderstorm Watch graphics consist of a single large main panel depicting: the watch area, State boundaries, County/Parish boundaries, selected communities, and Interstate highways.

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 warning, the expiration time, and the Twitter handle for the issuing NWS WFO.

Impact statistics are also displayed on the warning graphics as printed information. This includes an approximate population count in the warning area and approximate counts of public schools and hospitals within the warning area.

Finally, 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](#) 2014 Edition¹. 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.

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.

On Flash Flood Warning graphics, hydrographic plots of lakes, ponds, rivers, creeks, streams, etc. are provided from the [US Geological Survey National Hydrography Dataset](#), as published in NHDPlus Version 2, 2015.

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 and Flash Flood Statements. The graphics will generally be available on the web landing page and 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.

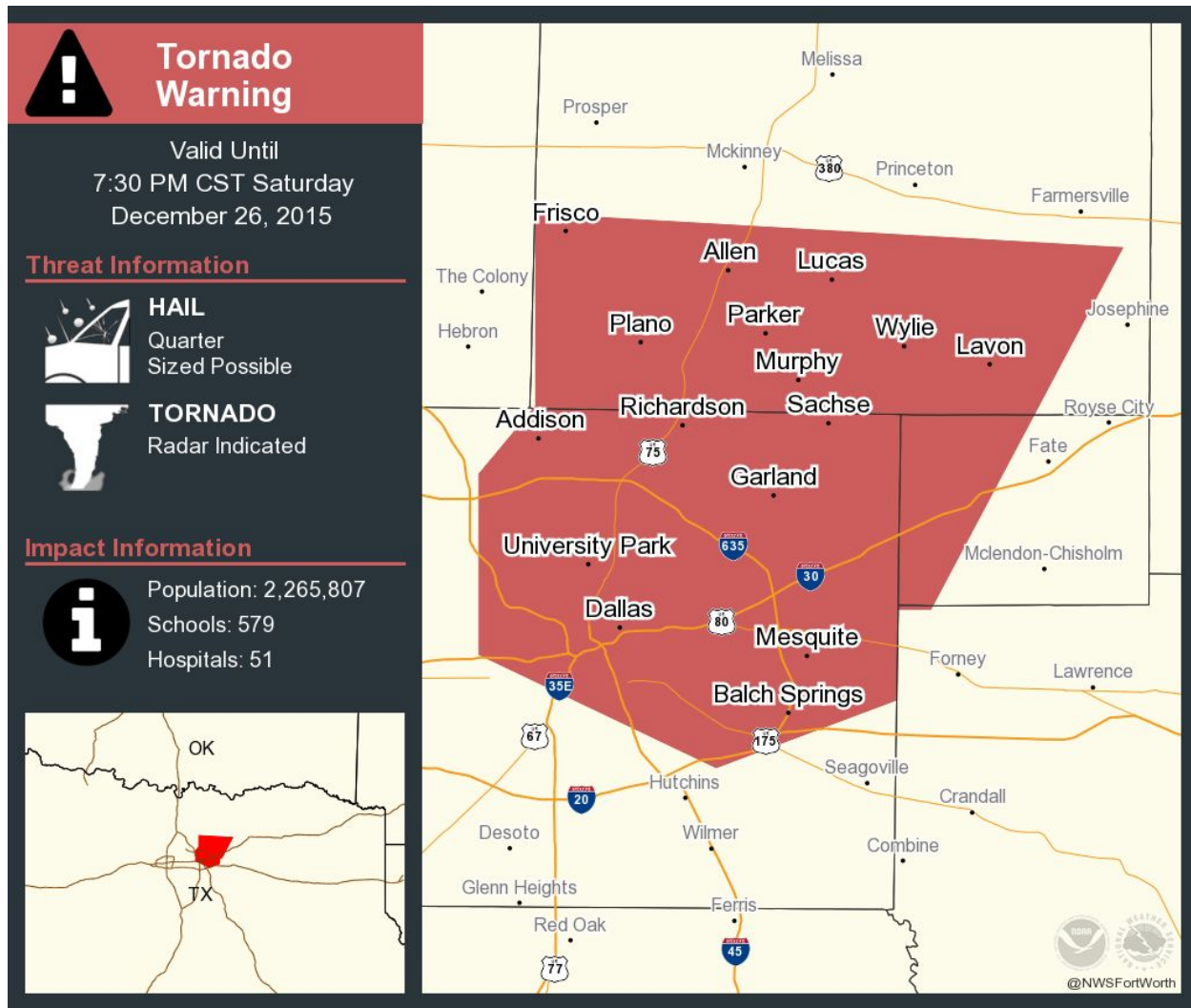
Graphics translated into Spanish will also be available during the experimental period. The Spanish formatted graphics and tweets will be available on select WFO twitter accounts where there is a high percentage of Spanish speaking individuals.

During the experimental period the web landing page, 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.

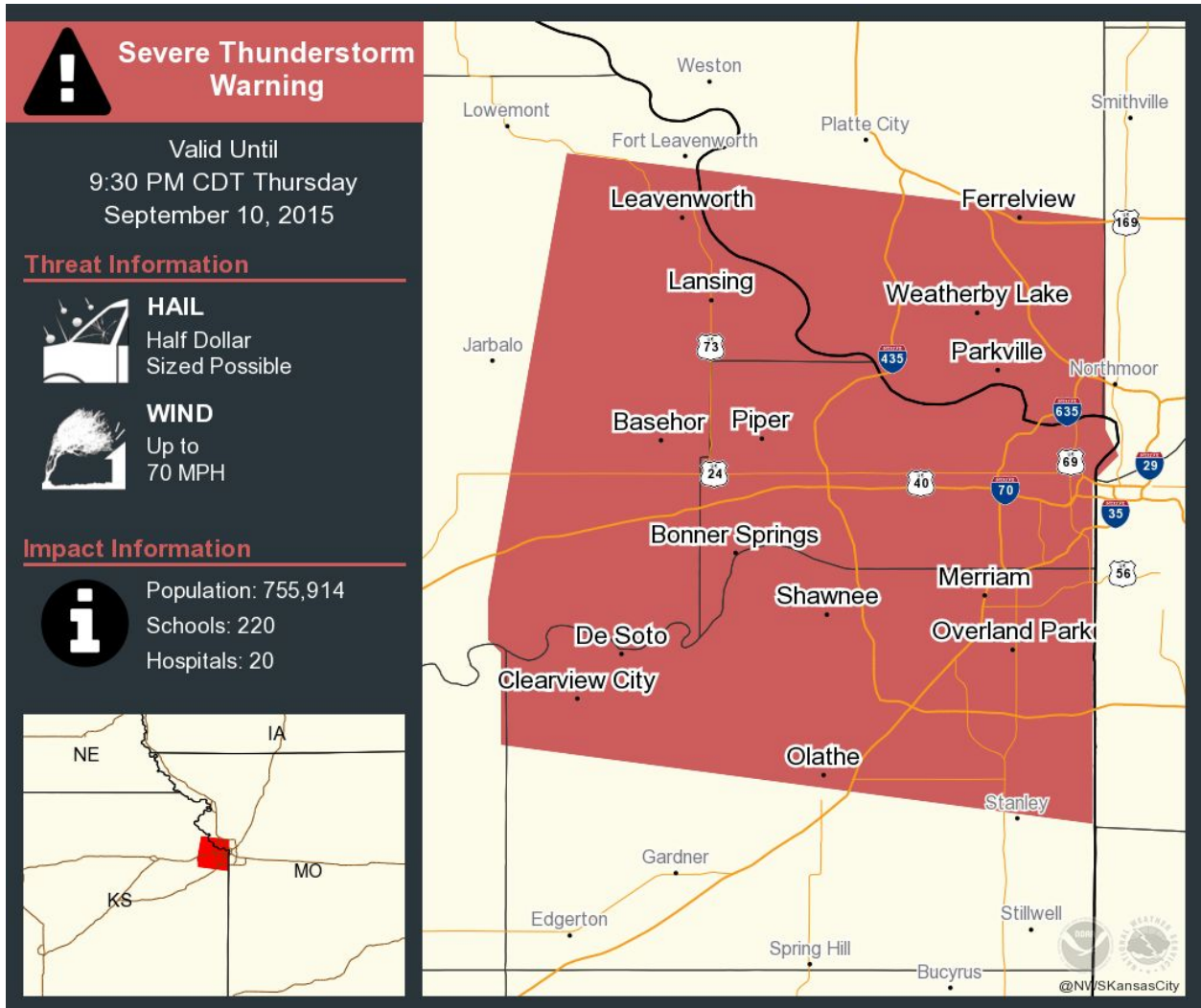
¹ Notice: The Landscan High Resolution Global Population Data Set is copyrighted by UT-Batelle, LLC, operator of Oak Ridge National Laboratory under Contract No. DE-AC05-00OR2275 with the United States Department of Energy. The United States Government has certain rights in this Data Set. NEITHER UT-BATTELLE, LLC NOR THE UNITED STATES DEPARTMENT OF ENERGY, NOR ANY OF THEIR EMPLOYEES, MAKES ANY WARRANTY, EXPRESS OR IMPLIED, OR ASSUMES ANY LEGAL LIABILITY FOR THE ACCURACY, COMPLETENESS, OR USEFULNESS OF THIS DATA SET.

EXAMPLES

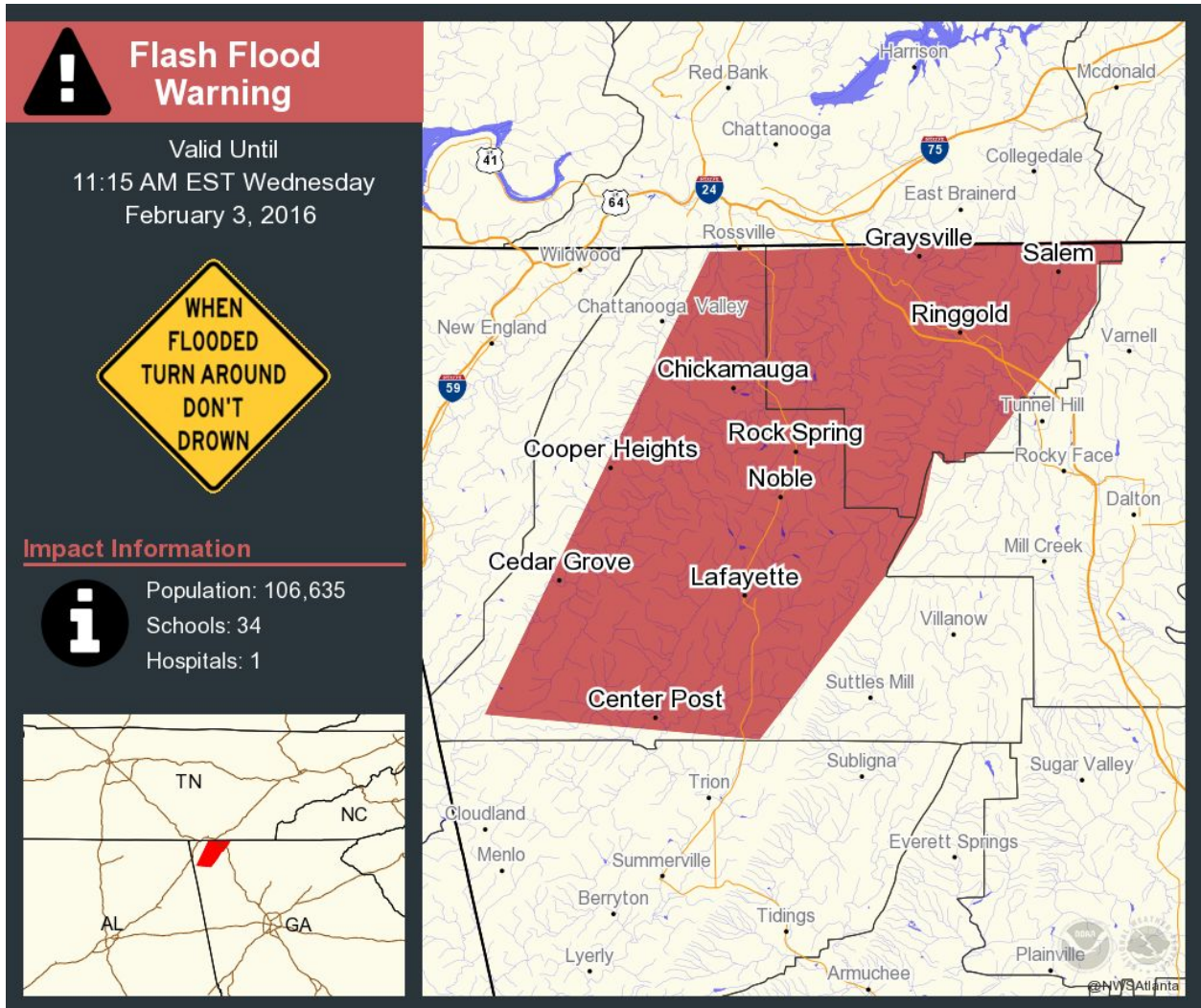
Example Tornado Warning graphic:



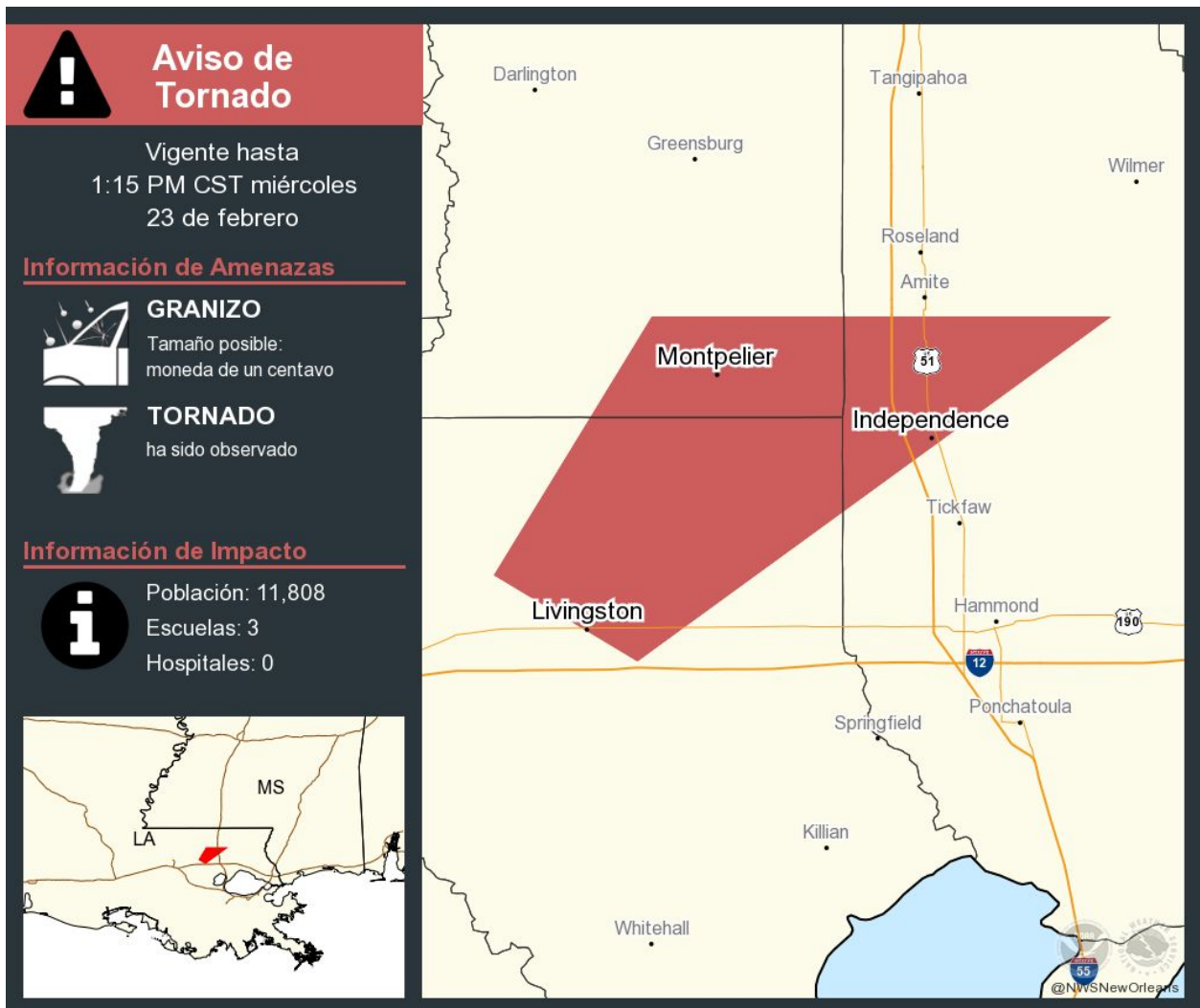
Example Severe Thunderstorm Warning graphic:



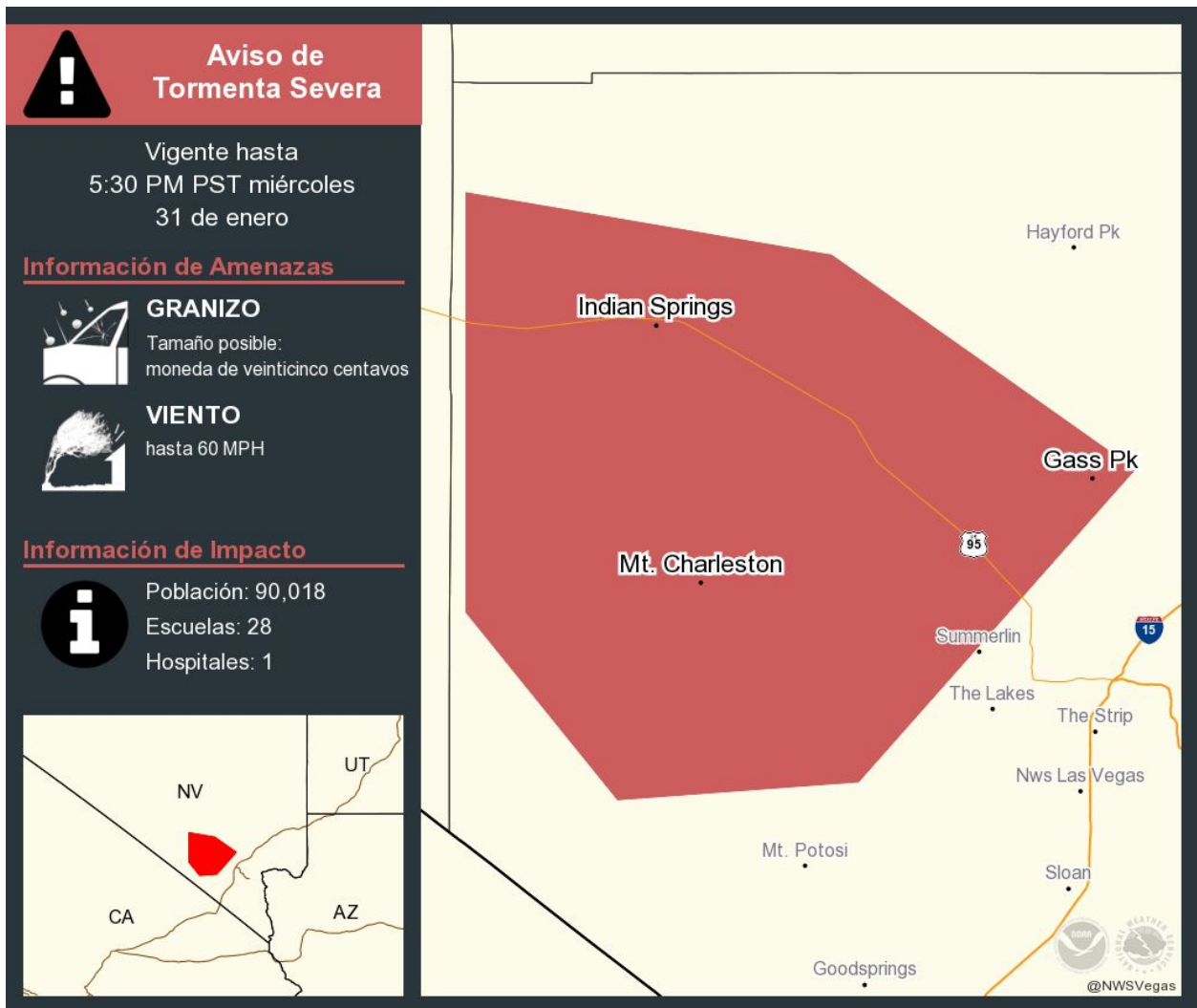
Example Flash Flood Warning graphic:



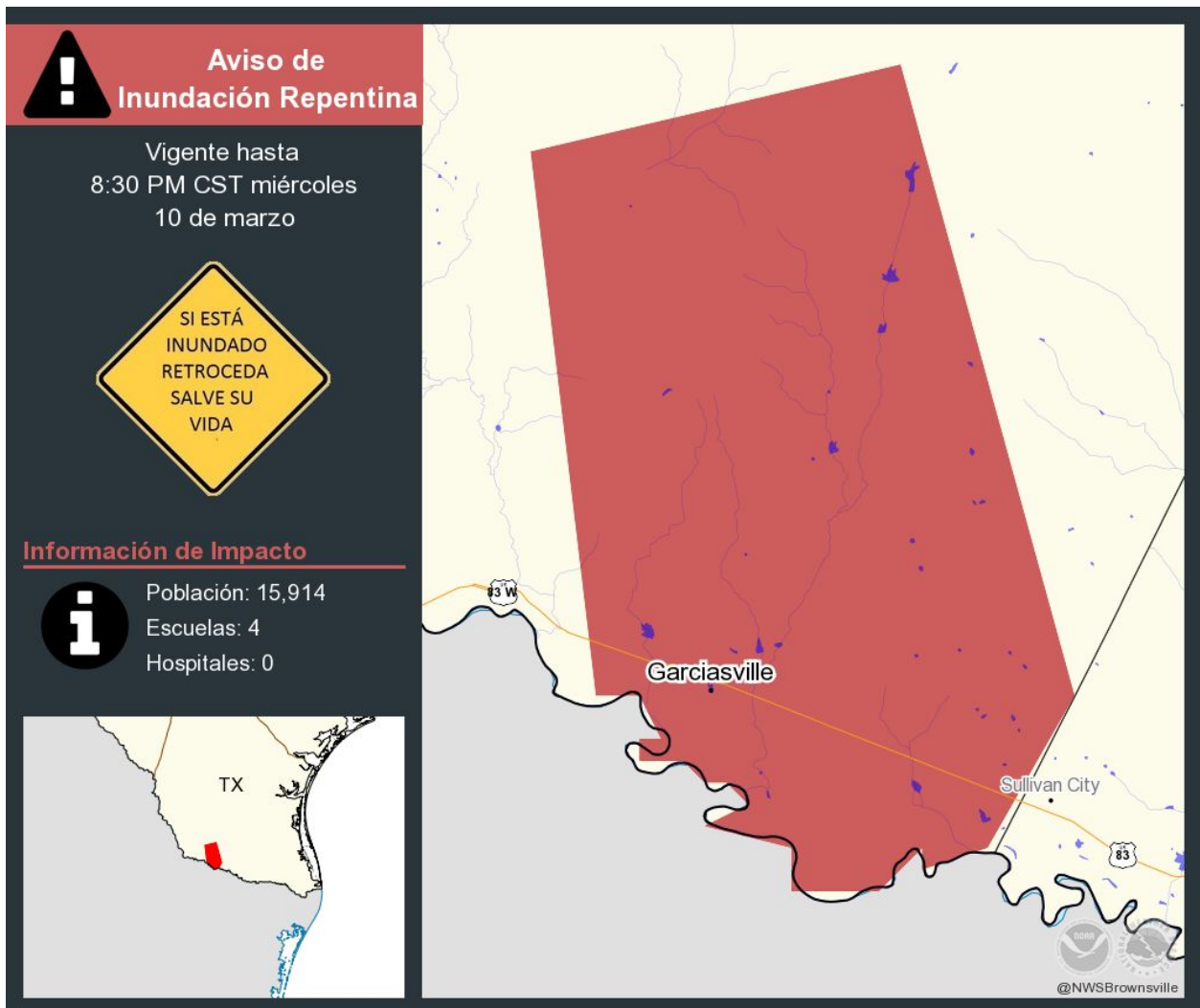
Sample Spanish Tornado Warning Graphic:



Sample Spanish Severe Thunderstorm Warning Graphic:



Sample Spanish Flash Flood Graphic:



Sample Tornado Watch Graphic:

