IPAWS

Justin Singer | January 23, 2023

FEMA

What is IPAWS?

ALERTING AUTHORITIES

A public alert originates from **Federal**, **State**, **Territorial**, **Tribal**, and **Local** officials.

IPAWS-OPEN AGGREGATOR

Alerting Authorities send a Common Alerting Protocol (**CAP**) alert to the IPAWS-Open Platform for Emergency Networks (**IPAWS-OPEN**). It validates the alert format and the sender's permissions.

PRIVATE SECTOR PARTNER SYSTEMS

The alert is broadcast to the public via **Private Sector Partner Systems**:

Emergency Alert System
Wireless Emergency Alerts
NOAA Weather Radio
Internet-Connected Devices
Unique Systems
Future Tech

GENERAL PUBLIC

Alert reaches the public.

Who can use it?

85% of the US population is covered by a local Alerting Authority!

Complete list:
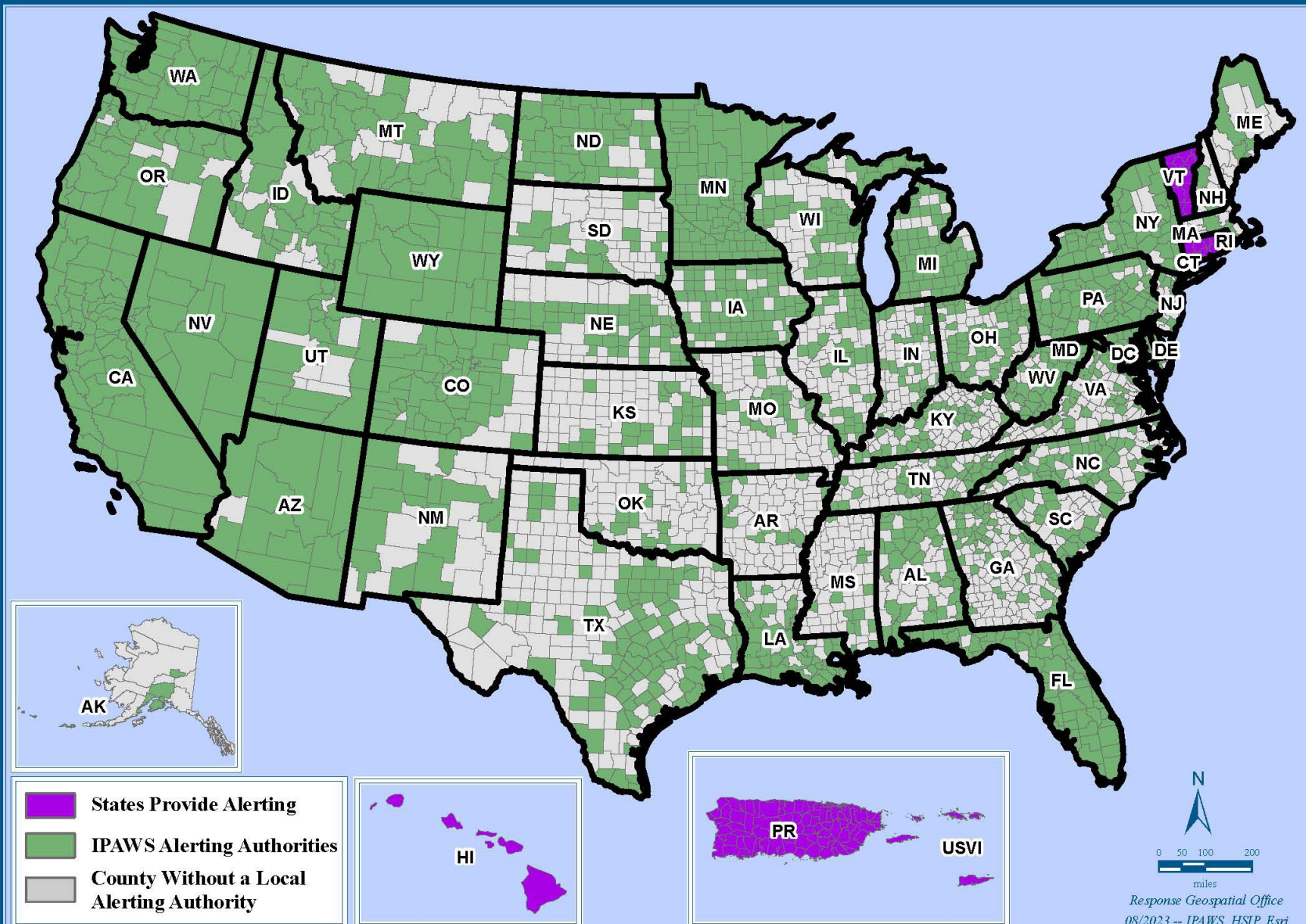[IPAWS Alerting Authorities - Agencies and Organizations | FEMA.gov](#)

IPAWS Adoption by County (As of August, 2023)

Legend:
- **States Provide Alerting** (purple)
- **IPAWS Alerting Authorities** (green)
- **County Without a Local Alerting Authority** (gray)

Response Geospatial Office
08/2023 -- IPAWS, HSIP, Esri

When is IPAWS used?

Whenever the local alerting authority decides IPAWS is the best way to communicate public safety information to the public

- Evacuations
- Missing and endangered people
- Child Abductions/AMBER
- Water Contamination
- Water and Relief Supply Distribution
- Large Power Outages
- Toxic Plumes
- Volcano
- Shelter-In-Place
- Clear-all

- Disaster Resources
- Wildfires
- Dam Failures
- Chemical Spills
- Law Enforcement Situations
- 911 Outages
- Nuclear Accidents
- Road Outages/Closures
- Flash Flooding
- Snowstorms

Alert & Warning Systems

IPAWS:

- No "sign-up" required to receive alerts

- Alerts broadcasts to all devices in a geographic area

- Alert delivery not affected by network congestion

- No delivery status or feedback

Mass Notification System:

- Require people to subscribe, opt-in, or install app to receive alerts

- Offer variety of notification methods
  - reverse phone dialing
  - social media integration
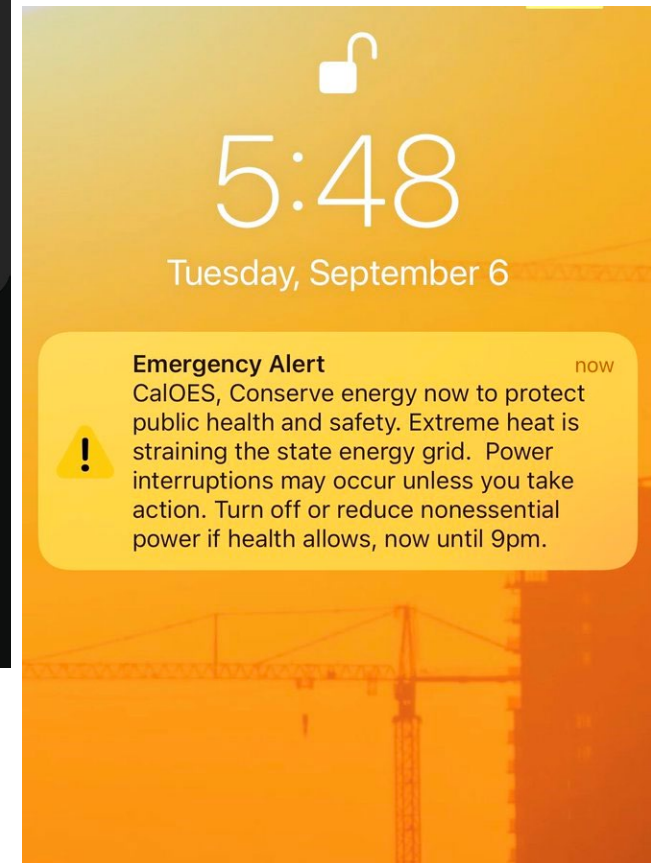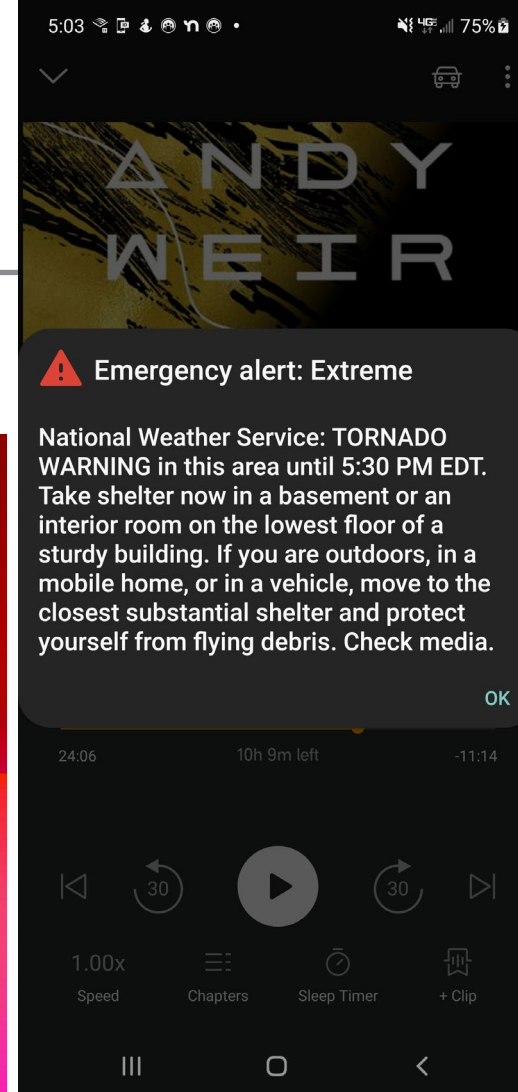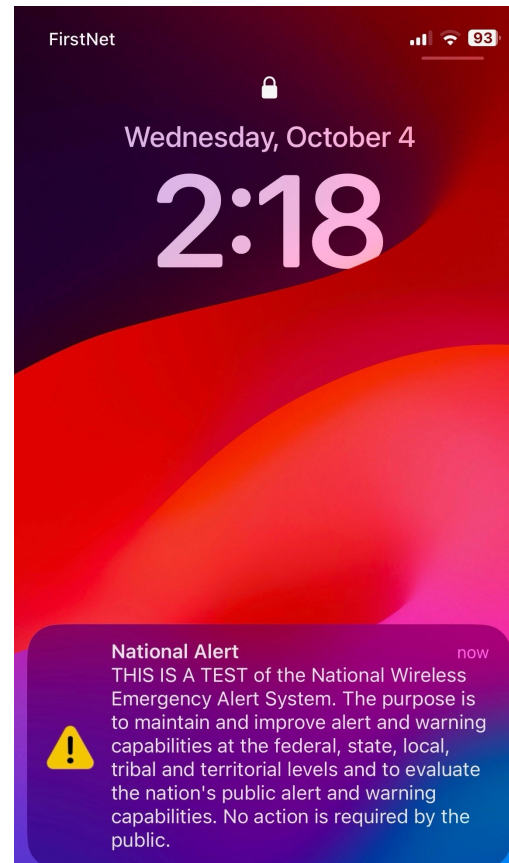 - directed/limited distribution lists

- Alert delivery status and feedback

Wireless Emergency Alerts

- Reach visitors/tourists

- English & Spanish

- Not SMS text message

- No network congestion

- All major providers participate

- Fast delivery

- Attention grabbing tone

- Sent to a specific geographic area
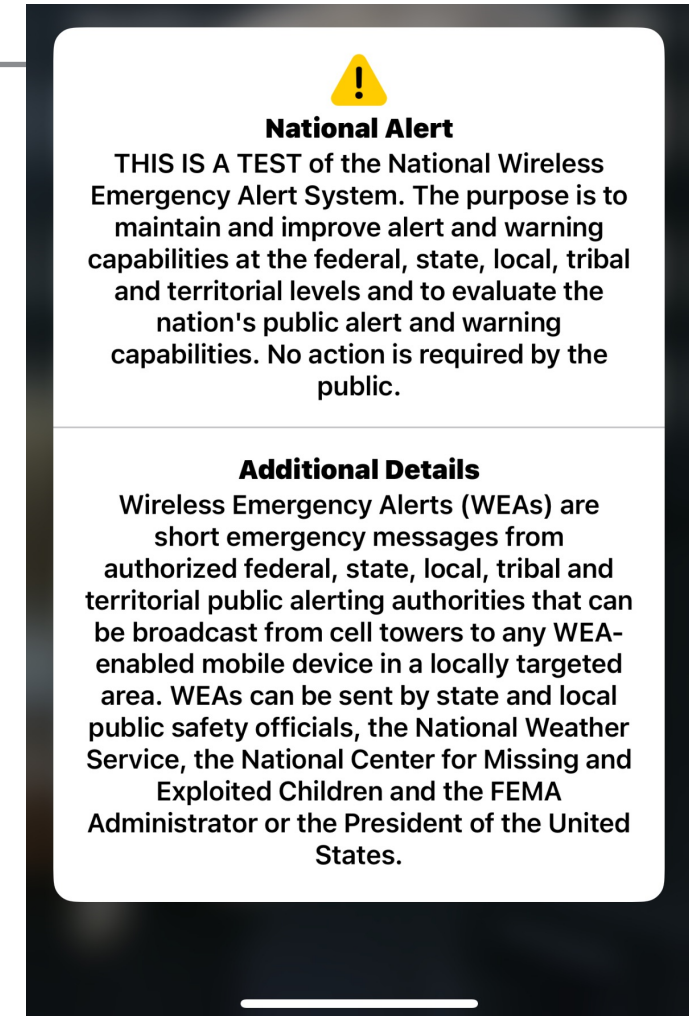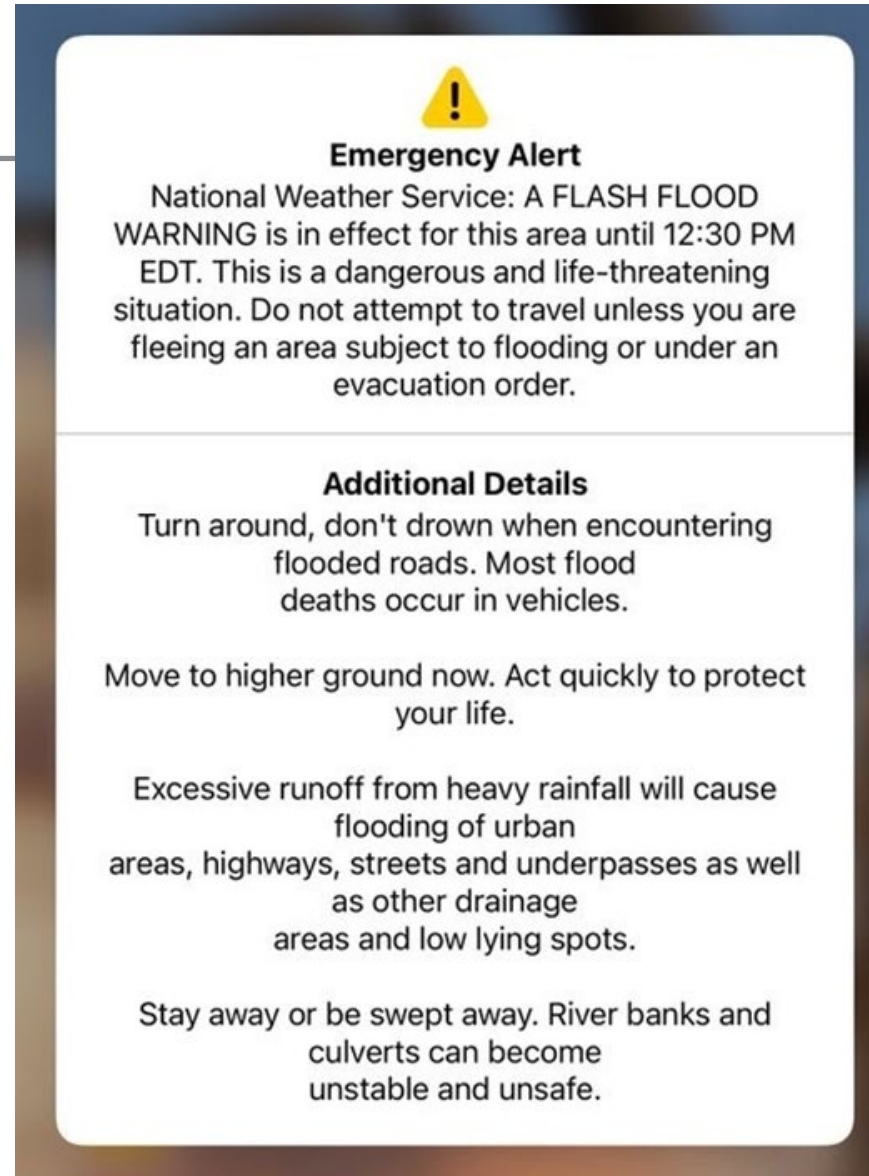
- Can contain links

- Up to 360 characters

FirstNet

Wednesday, October 4

2:18

National Alert now
THIS IS A TEST of the National Wireless Emergency Alert System. The purpose is to maintain and improve alert and warning capabilities at the federal, state, local, tribal and territorial levels and to evaluate the nation's public alert and warning capabilities. No action is required by the public.

ANDY WEIR

⚠️ **Emergency alert: Extreme**

National Weather Service: TORNADO WARNING in this area until 5:30 PM EDT. Take shelter now in a basement or an interior room on the lowest floor of a sturdy building. If you are outdoors, in a mobile home, or in a vehicle, move to the closest substantial shelter and protect yourself from flying debris. Check media.

OK

5:48
Tuesday, September 6

Emergency Alert now
CalOES, Conserve energy now to protect public health and safety. Extreme heat is straining the state energy grid. Power interruptions may occur unless you take action. Turn off or reduce nonessential power if health allows, now until 9pm.

Apple iOS 17 Update

- 600 additional characters
  - Tap the alert to retrieve additional information

Emergency Alert
National Weather Service: A FLASH FLOOD WARNING is in effect for this area until 12:30 PM EDT. This is a dangerous and life-threatening situation. Do not attempt to travel unless you are fleeing an area subject to flooding or under an evacuation order.

Additional Details
Turn around, don't drown when encountering flooded roads. Most flood deaths occur in vehicles.

Move to higher ground now. Act quickly to protect your life.

Excessive runoff from heavy rainfall will cause flooding of urban areas, highways, streets and underpasses as well as other drainage areas and low lying spots.

Stay away or be swept away. River banks and culverts can become unstable and unsafe.

National Alert
THIS IS A TEST of the National Wireless Emergency Alert System. The purpose is to maintain and improve alert and warning capabilities at the federal, state, local, tribal and territorial levels and to evaluate the nation's public alert and warning capabilities. No action is required by the public.

Additional Details
Wireless Emergency Alerts (WEAs) are short emergency messages from authorized federal, state, local, tribal and territorial public alerting authorities that can be broadcast from cell towers to any WEA-enabled mobile device in a locally targeted area. WEAs can be sent by state and local public safety officials, the National Weather Service, the National Center for Missing and Exploited Children and the FEMA Administrator or the President of the United States.

WEA 360 Character Template

WEA 360 Character Guidance

- Recommended
- Provides more information to public
- Keep in mind non-locals will receive WEA – do not abbreviate or use acronyms that locals only understand
- Include in message:
  - Source
  - Description of event
  - Location
  - Action to take
  - URL or phone number to direct people to more information
    - Tiny URL services save space and can link to social media sites for info, pictures, maps, etc.

Template

(1) [local, familiar, authoritative message source]. (2) [description of threat or event] in (3) [location and consequences]. (4) [Protective Action]. (5) [URL, phone number, media for more information]

Example – 291 characters

(1) DC Emergency Management notification. (2) Suspicious package at Washington Monument. Police activity in surrounding area (3) near 15th and 17th streets. Possible hazardous material. (4) Avoid area, stay indoors and away from windows. (5) Go to bit.ly/XXXX or tune to local media for more information.

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Connected Pathways

- Emergency Alert System (EAS)

- NOAA Weather Radio

- Potential for any internet connect device or service

FEMA's Guide for Alerts & Warnings

https://www.ready.gov/sites/default/files/2022-02/fema_guide-for-alerts-and-warnings_2021.pdf.pdf

- Information about 17 hazards and the protective actions people can take when they receive an alert
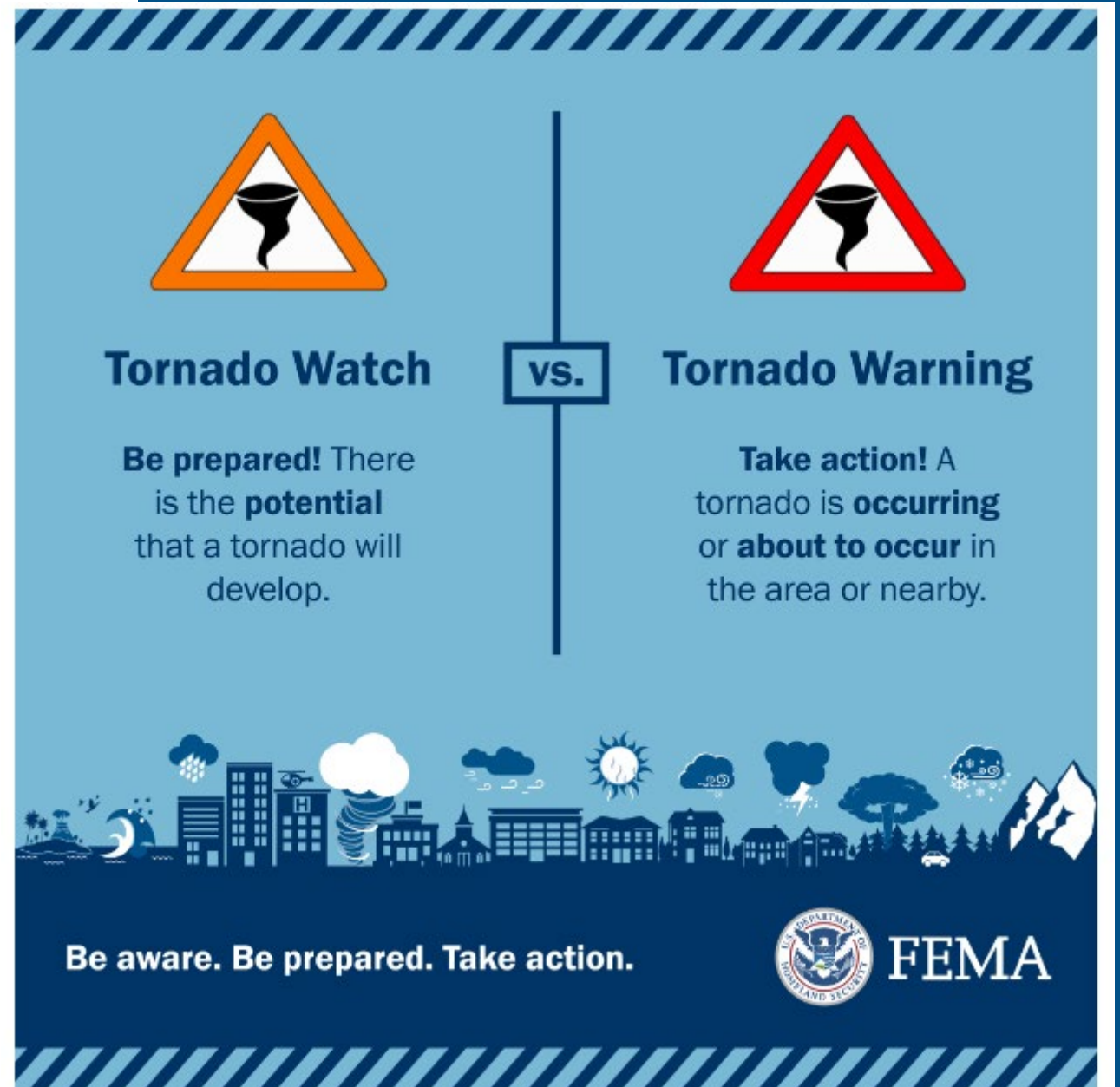
Symbols

- Standardized symbols for event codes **optimize message content**

- Aid in making public alerts & warnings **more effective for:**
  - People with disabilities
  - People with Limited English Proficiency
  - Whole Community

- Apply a **common language for communicating incident information**
  - Used in local/state emergency management decision support tools
  - Geo-Targeting alert and warning message distribution within your systems
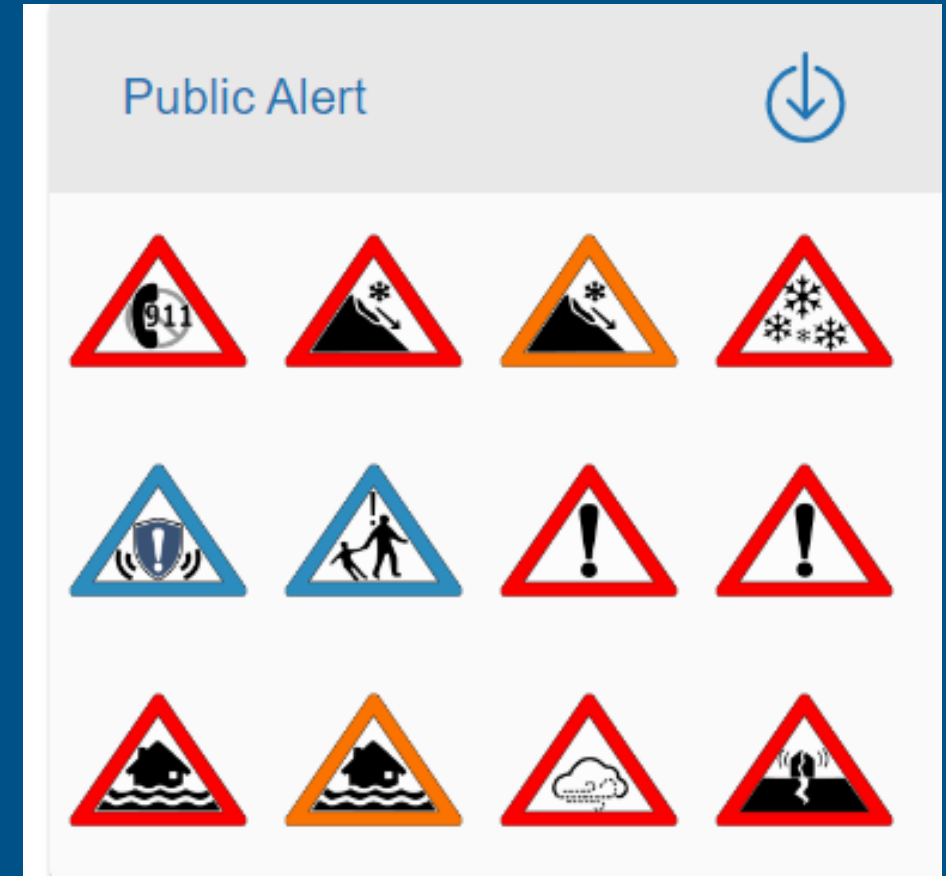
napsg-web.s3.amazonaws.com/symbology/index.html#/

IPAWS National Test - 2023

IPAWS

On October 4, 2023, IPAWS conducted the seventh IPAWS National Test. Sending the WEA test message began at 2:18 p.m. EDT. The EAS message was sent at 2:20 p.m. EDT.

What did we test?

The 2023 IPAWS National Test **evaluated CAP-formatted EAS alerts and WEAs** using the EAN "Imminent Threat" Event Code for WEA and NPT for EAS. This read as National Alert on phones.

Who received the test?

The WEA portion of this test reached nearly **all cellphones** that were **turned-on and within range** of a participating cellular service.

Activities:

Before: Development of Test Implementation Guide, Test Execution Planning

Test Execution

After: EAS Participants were required to submit responses to the FCC's ETRS (EAS Test Reporting System)

The 2023 IPAWS National Test on October 4 tested WEA and EAS and reached nearly everyone in the U.S. at the time of the test.

SEND ALERTS, SAVE LIVES!

Accessibility of National Test

IPAWS

FEMA IPAWS **continues to enhance accessibility with public alert and warnings.**
Initiatives to enhance accessibility for National testing include:

✓ Special alert tones for the Emergency Alert System and Wireless Emergency Alerts to improve accessibility for the hearing impaired.

✓ For WEAs, IPAWS also uses a special vibration cadence.

✓ IPAWS supports alerts being sent in both English and Spanish.

✓ WEA vibration cadence must have temporal tone that must be repeated twice. The vibration cadence must be restricted to use for Alert Messages (§ 10.530).

✓ When internet connectivity is available, IPAWS can provide emergency message content in multiple languages, if provided by the alert originator, for connected private sector systems that ultimately deliver the messages to people.

✓ The visual message portion of an EAS must be displayed at the top of the television screen and in a manner that is readily readable and understandable (§ 11.51).

The 2023 IPAWS National Test was available in both **English and Spanish.** Both the WEA and EAS portions **used special tones** to improve accessibility for the hearing impaired and the WEA portion **used a special vibration cadence.**

SEND ALERTS, SAVE LIVES!

Colorado Inclusive Emergency Alerting Systems

- Finding 1. Colorado's alert systems and processes are a patchwork that, while flexible, makes it challenging to provide consistent and accessible emergency alerts.

- Finding 2. Colorado relies heavily on opt-in emergency alert systems but most localities report opt-in rates below 40%. These systems create barriers for everyone, but especially those who don't speak English or who have disabilities. Tracking alert subscribers and measuring the efficacy of alerts is a challenge.

- Finding 3. Given resource constraints, alerting authorities turn to resources that are available to provide alerts in other languages, but they may not align with best practices.

- Finding 4. Many emergency response personnel are interested in incorporating systems and practices that would make alerts more inclusive, but need more guidance, funding, and personnel to adequately do so.

- Finding 5. Technical and practical limitations of emergency alerts hinder most people and compound the challenges faced by those with disabilities and populations with LEP. These include delays in technology upgrades and pushback from private industry, among others.

Ready.gov

https://www.ready.gov/disability

4 steps to prepare:

- Stay informed

- Make a plan

- Build a kit

- Get involved

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