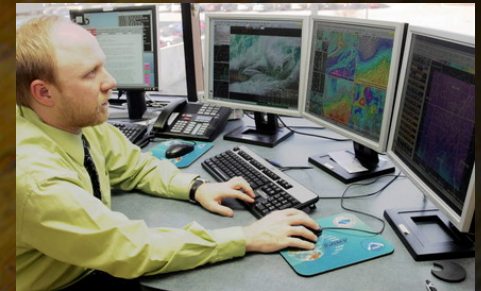
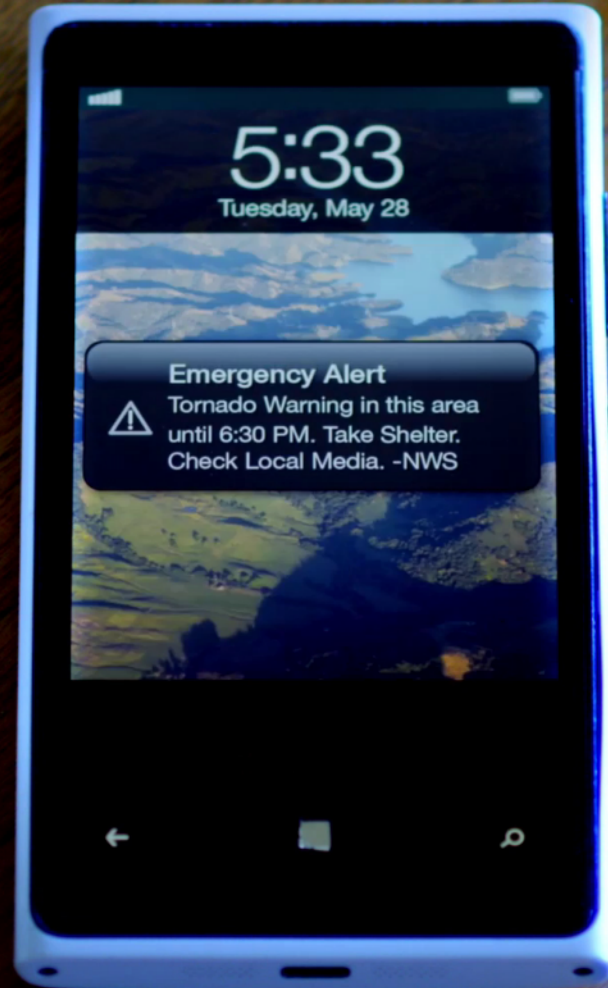


IPAWS and Wireless Emergency Alerts



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NOAA/NWS
Mike.Gerber@NOAA.gov



Overview

- Partnership as the foundation for IPAWS and WEA
- Who is using IPAWS/WEA and when
- WEA examples and success stories
- Future improvements to WEA
- How to become an IPAWS Alerting Authority

Partnership



Weather-Ready Nation

National Oceanic and Atmospheric Administration

NOAA's Weather-Ready Nation™ Ambassadors

Your organization can help make our country safer and more resilient to weather-related disasters by becoming a Weather-Ready Nation Ambassador.

Weather-Ready Nation (WRN) is about building community resilience in the face of increasing vulnerability to extreme weather. This requires the participation and commitment of a vast nationwide network of partners, e.g., weather data providers, hospitals, construction companies, utilities, etc. That's why NOAA is looking for WRN Ambassadors.

What NOAA Does for You

- Explores innovative approaches for collaboration
- Provides unified messages and content on Weather-Ready Nation
- Assists with StormReady™/TsunamiReady™ opportunities for communities
- Recognizes **You** as an Ambassador
- Shares the WRN Ambassador badge for your use

Building a Weather-Ready Nation Together

Building a Weather-Ready Nation requires more than government alone. It requires the entire Weather Enterprise to provide information for better community, business, and personal decision making, and innovative partnerships across all segments of society. We must involve everyone in an effort to move people – and society – toward heeding warnings, taking action, and influencing their circles of family, friends, and social network to act appropriately.

As a Weather-Ready Nation Ambassador, you will join with other federal, state, and local government agencies; emergency managers and city planners; researchers, the media; the insurance industry; non-profit organizations; the private sector; and many others to achieve the goal of saving lives and minimizing the impact of extreme weather on daily life.

We can all contribute to a better informed and prepared public, smarter business and community planning, and more resilient infrastructure.

Why Become an Ambassador?

WRN Ambassadors serve a pivotal role in affecting societal change – helping to build a nation that is ready, responsive, and resilient to the impacts of extreme weather. You can help drive these changes in your community by:

- Promoting Weather-Ready Nation messages
- Collaborating with NOAA
- Sharing your success stories
- Serving as an example

WRN Ambassadors are change agents and leaders of their communities. You will inspire others to be better informed and prepared – helping to minimize or even avoid the impacts of natural disasters.

www.noaa.gov/wrn

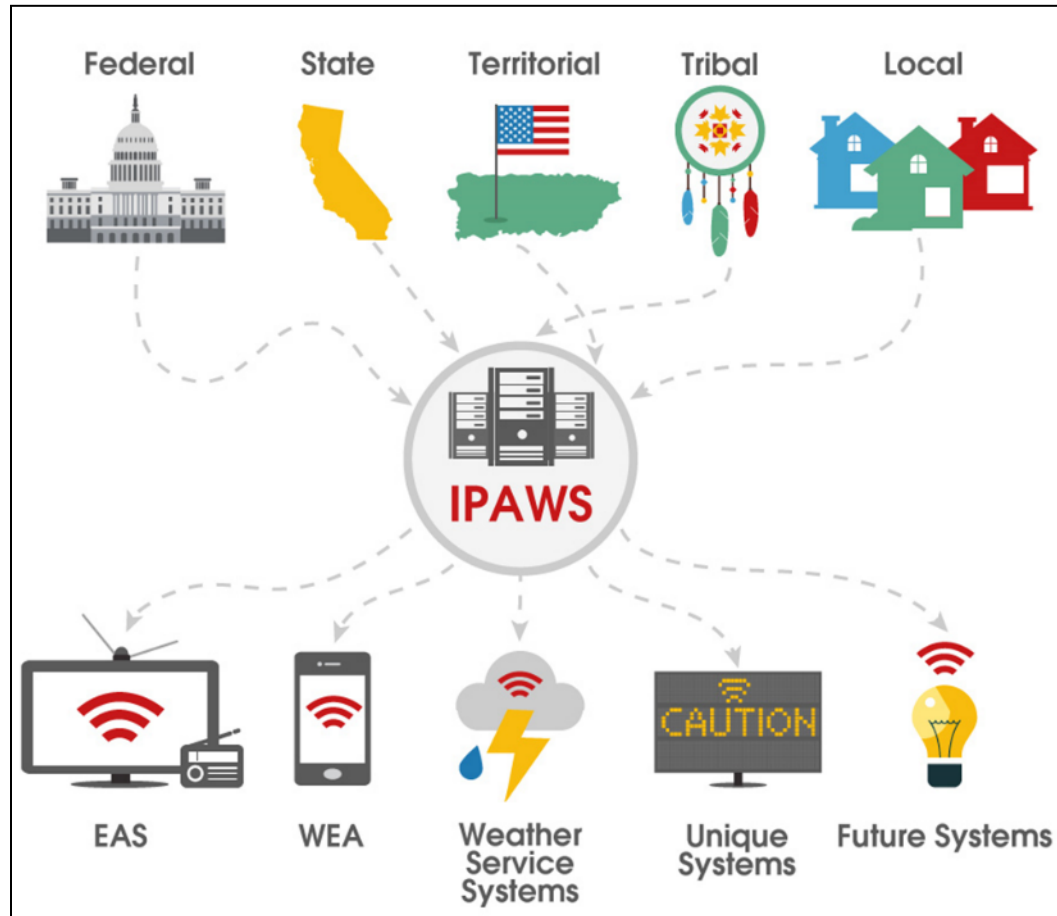
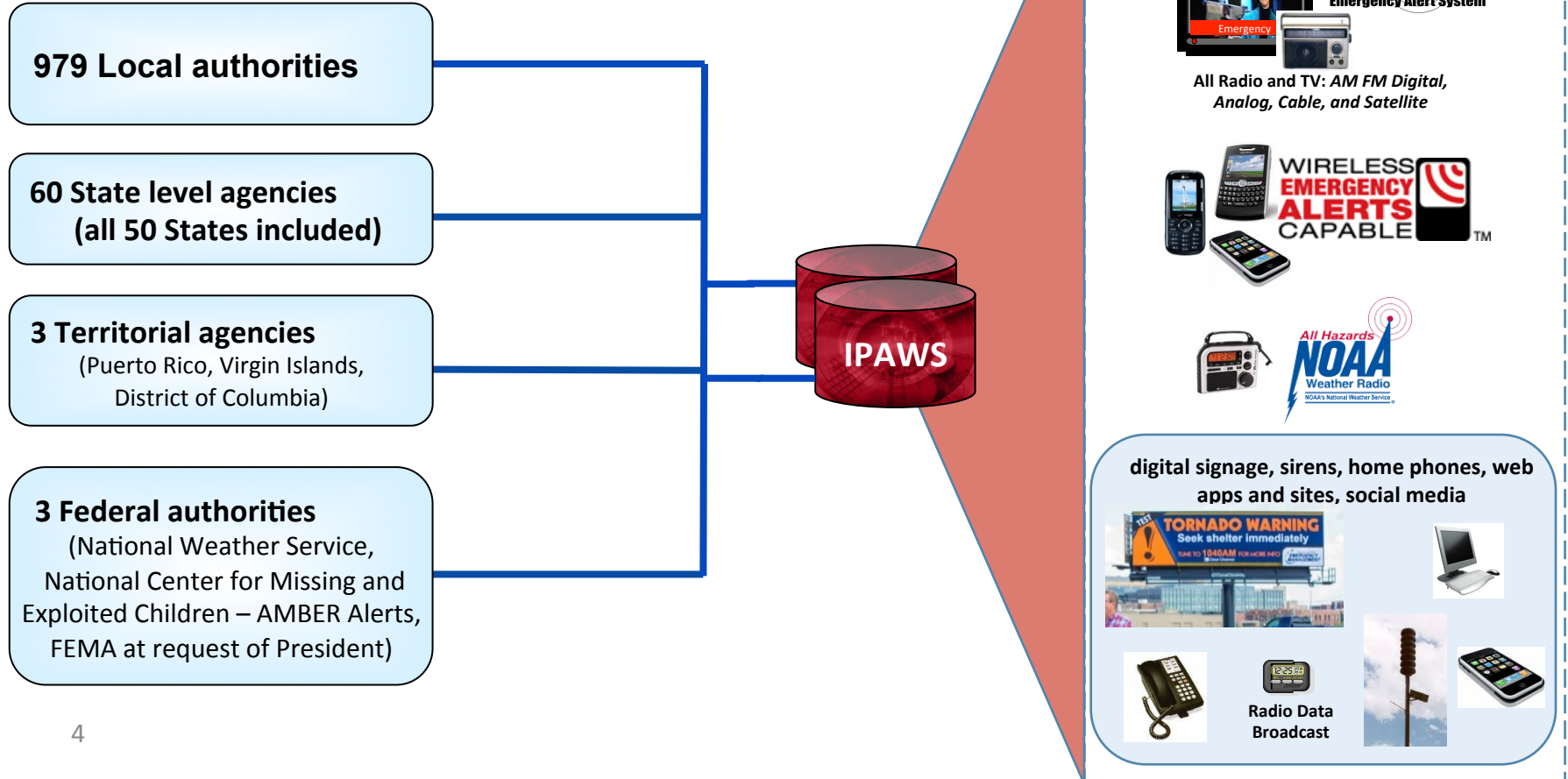


Image courtesy of the California Governor's Office of Emergency Services. See calalerts.gov

Who Can Use IPAWS?

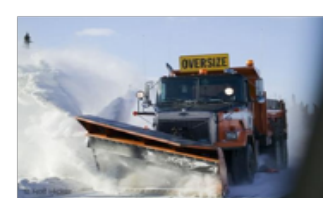
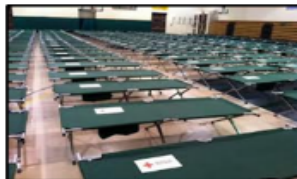
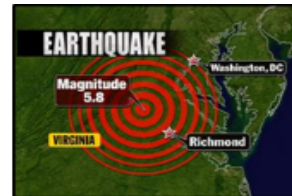
Public safety officials with coordinated authority to alert the public of emergency situations in their jurisdiction

As of July, 2016:



When is IPAWS Used?

When public safety officials need to warn of a threat to public safety:



Feb 23-25, 2016 Tornadoes

“I have been doing (storm) surveys for over 25 years... never heard it all come together as well as this as told by the people in the path. With WEA, they got the warning and they immediately took action.”

-- Meteorologist-in-Charge, NWS State College (PA)



“Dozens and dozens of people yesterday told us how they got our tornado warnings via WEA on their cell phone (and) took action before their house was damaged or destroyed.”

-- Meteorologist-in-Charge, NWS New Orleans (LA)



Activation of WEA Saves Lives

continued...

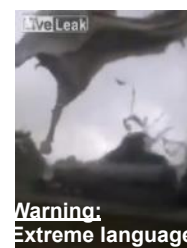


Illinois (November 17, 2013) – 24 tornadoes

“Daniel Bennett was officiating Sunday services before 600 to 700 people when...‘two dozen phones started going off in the service’...many townspeople said those messages helped minimize deaths and injuries” – Associated Press

“My phone was alerting...that’s why, despite the disaster you see, that there was minimal loss of life” --Illinois Rep. Aaron Schock on NPR

East Windsor, CT (July 1, 2013) – Up to 34 lives saved (29 children). Tornado WEA prompted soccer dome manager to evacuate everyone. Seconds later, dome thrown high above highway.



Elmira, NY (July 26, 2012)

10 mile tornado. 2000 structures damaged. EM officials surprised to find no fatalities or injuries. Interviews with residents revealed they sought shelter in response to WEA.

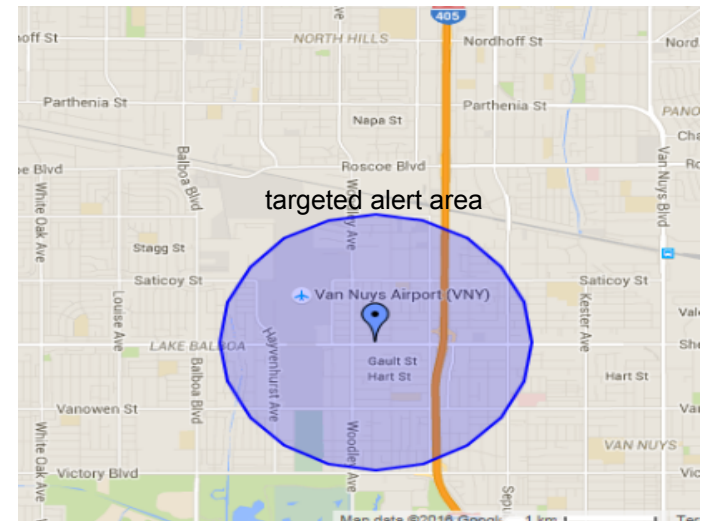


WEA example:

Los Angeles Police Depart Active Shooter Warning



WEA broadcast to cellular phones in a 1-mile radius



"Neighbors said they heard shots fired, and LAPD appeared to have sent an [emergency alert to cellphones](#) in the area at about 4 p.m., warning of "suspect shooting from balcony." ... The unidentified man surrendered to police around 5:45 p.m. and was taken away in handcuffs." - KTLA News 5 Report



FEMA

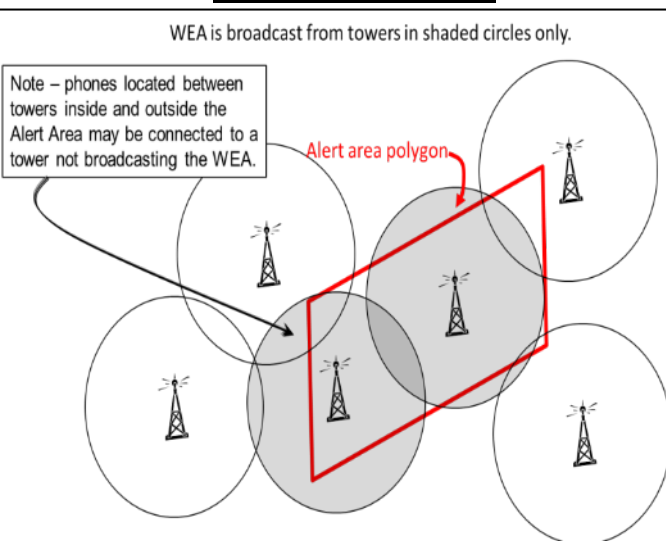
<http://ktla.com/2015/04/24/swat-team-responding-to-standoff-in-van-nuys-after-man-reporting-waiving-gun/>

Geo-targeting of WEA messages:

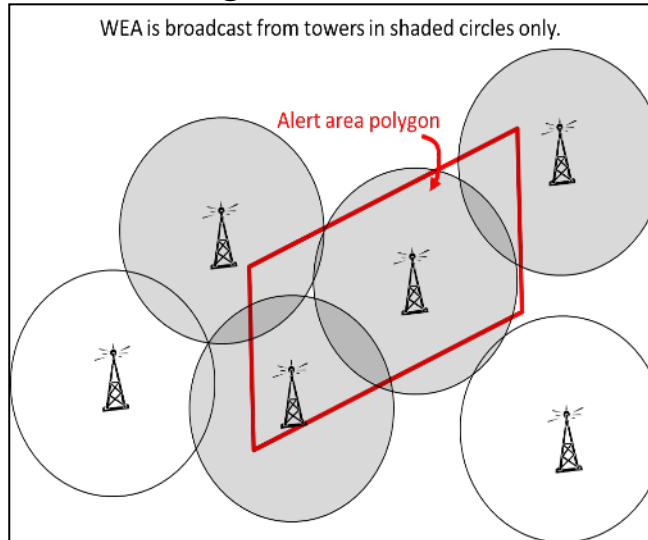
Things you need to know!

FCC rules allowed variation wireless carrier implementation

WEA sent from towers located inside alert area



WEA sent from towers with coverage into the alert area



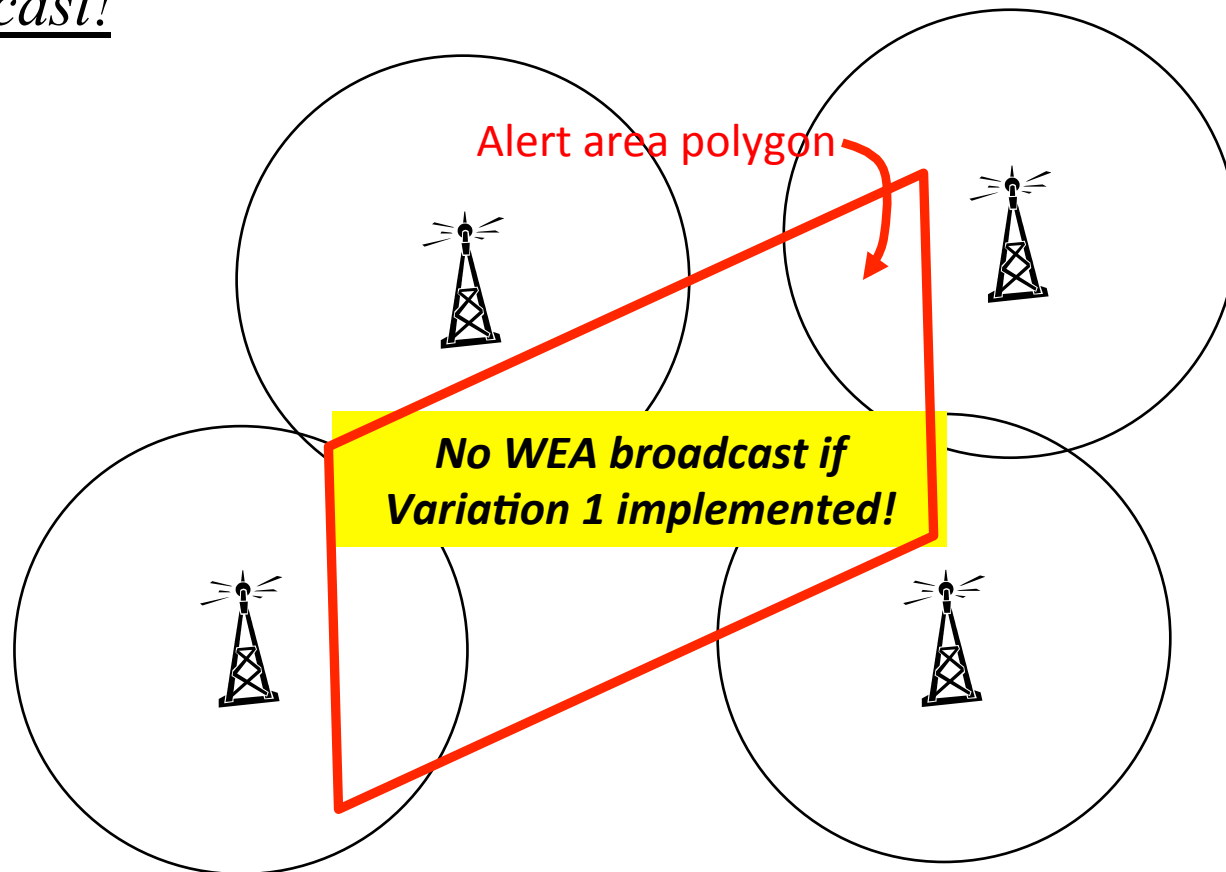
App on the phone

Custom App deployed on carriers' smart phones

- An application that communicates with the carrier's alert database and if phone is in a WEA alert area, WEA message is delivered via SMS text
- This variation is dependent upon SMS channel availability potential for alert delivery to be affected by SMS congestion in local wireless network
- WEA Roaming may not be supported by app based WEA implementation

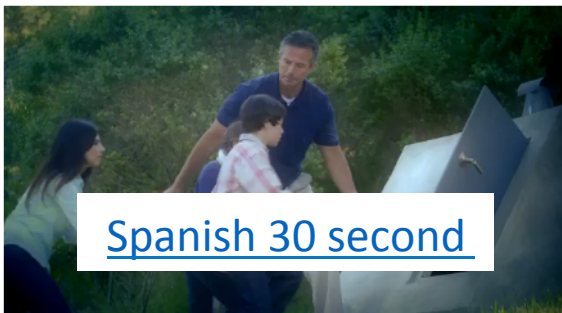
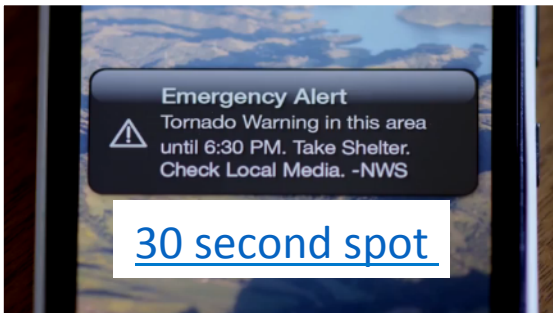
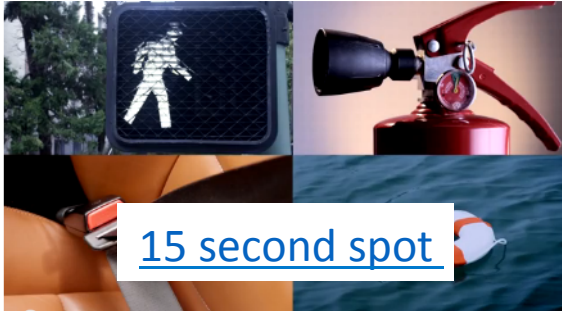
WEA use in Rural areas:

- *Cell towers are fewer and farther apart*
- *If alert area does not include a tower location - No WEA broadcast!*



Outreach should be part of your program

calalerts.org



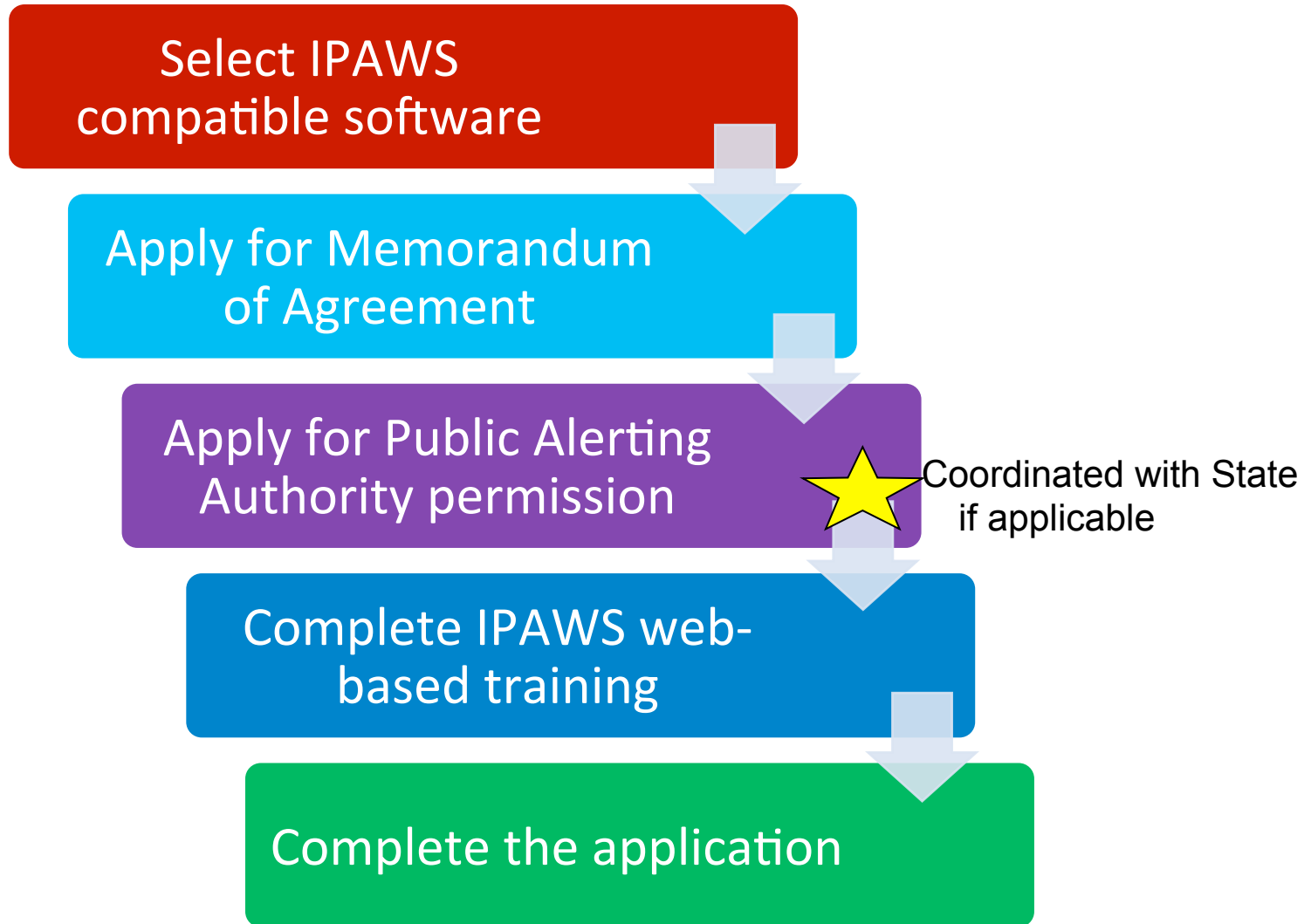
FCC Announced New WEA Rules on 9/30/16

Improvements

- Increase to 360 chars for 4G-LTE (30 months)
- URLs and phone numbers in WEA (1 year)
- WEA geo-targeting by polygon (60 days)
 - FCC proposes carriers "match" polygon (years away)
- State/local WEA testing (30 months)
- Public Safety Message classification (30 months)
- Spanish-language WEA (2 years)
- WEA signal may be used in PSAs (30 days)

Federal Communications Commission		FCC 16-127
Before the Federal Communications Commission Washington, D.C. 20554		
In the Matter of	)	
Wireless Emergency Alerts	)	PS Docket No. 15-91
Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System	)	PS Docket No. 15-94
REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULEMAKING		
Adopted: September 29, 2016		Released: September 29, 2016
Comment Date: (30 days from the date of publication in the Federal Register) Reply Comment Date: (60 days from the date of publication in the Federal Register)		
By the Commission: Chairman Wheeler and Commissioners Clyburn, Rosenworcel and Pai issuing separate statements; Commissioner O'Rielly approving in part, dissenting in part and issuing a statement.		
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Process to become an IPAWS User



<http://www.fema.gov/how-sign-ipaws>

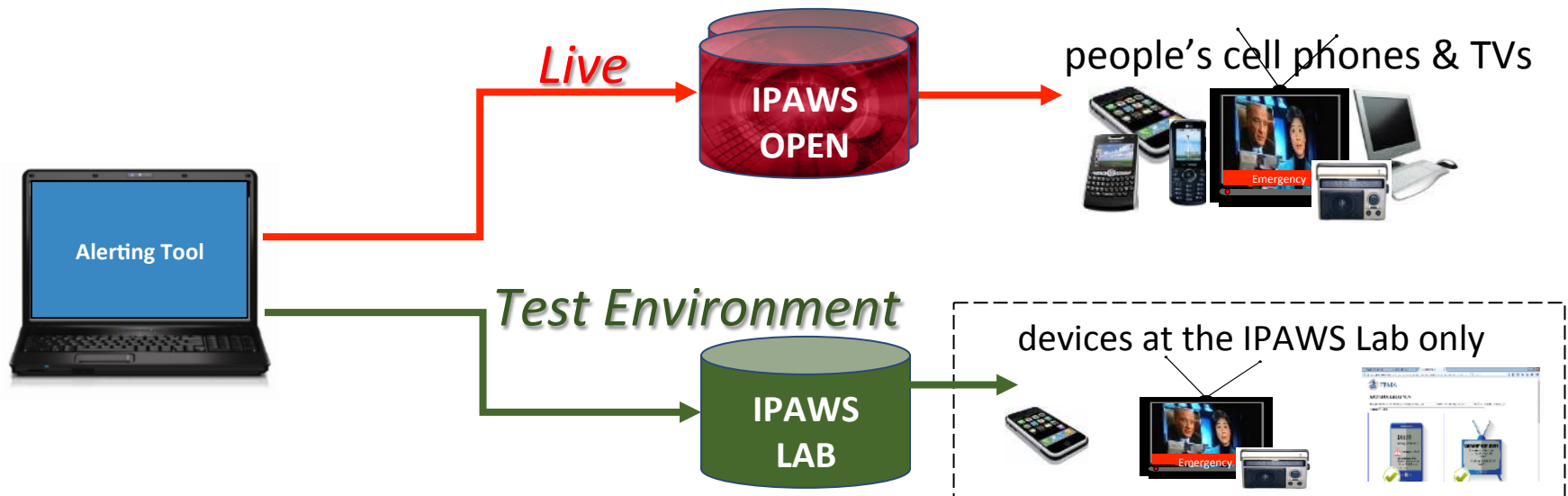
IPAWS-Compatible Alerting Tools

- More than 50 vendors offer IPAWS compatible tools/systems
- Vary widely in capabilities and user interface options

*Not all tools support all IPAWS capabilities!
(e.g. polygon warning, testing with IPAWS Lab) –*

Ask your vendor!

Ask the IPAWS Office (ipaws@fema.dhs.gov)



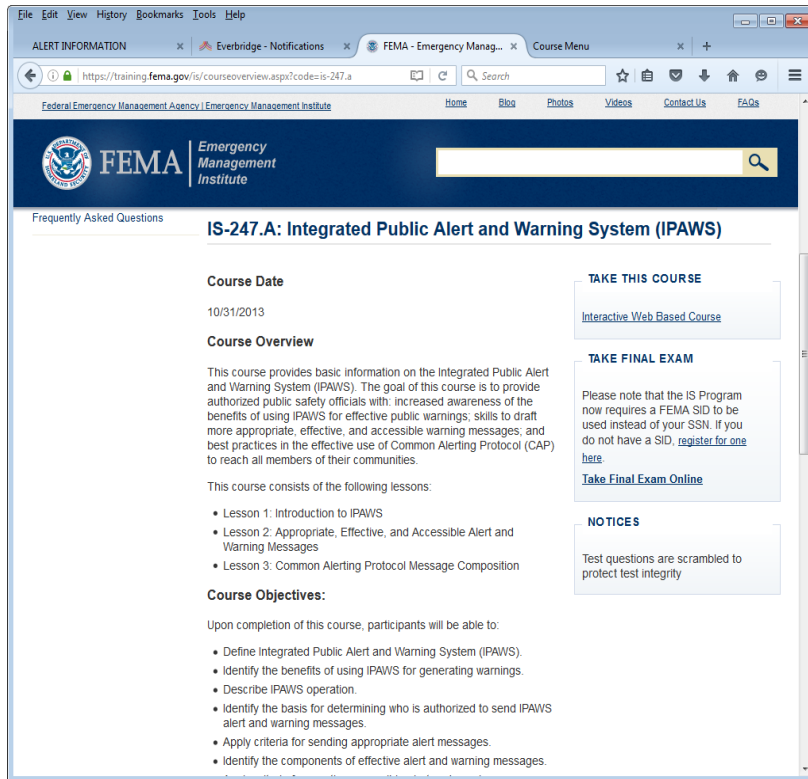
IPAWS Lab

- FEMA Test Lab supports alert and warning system evaluation, demonstration, exercises and testing
 - Offline version of IPAWS with alerting outlets
 - Located at DISA Joint Interoperability Test Command



IPAWS Training Online

FEMA's EMI - Independent Study Courses:



IS-247a: *IPAWS Introduction*

<https://training.fema.gov/EMIWeb/IS/is247a.asp>

IS-251: *IPAWS for Alerting Authorities*

<http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=IS-251>

For more information about IPAWS

- Email the IPAWS inbox: IPAWS@fema.dhs.gov
- IPAWS Website: <http://www.fema.gov/ipaws/>
- IPAWS Stakeholder Information and Webinar Mailing Lists:
<https://www.fema.gov/integrated-public-alert-warning-system-program-management-office-get-involved>
- IPAWS Lab at the Joint Interoperability Test Command



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Questions?

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Wade.Witmer@DHS.gov

WEA Facts

Benefits

- Is a free opt-out service
- You're not tracked, but service follows you
- Not subject to network congestion as with traditional text messaging
- If you travel into an alert area after the alert was sent, you should still receive it
- Each WEA displayed once, no duplicates
- Distinct vibration cadence and audio tone

You need to know

- WEA is a best effort service
- Doesn't replace other alerting systems
- Alert by polygon to avoid over-alerting
- Potential for over/under reach
- Alerts do not interrupt when device in voice or data session
- You must register with FEMA IPAWS in order to use WEA

IPAWS Alert and Warning Symbol Initiative

- Working toward the development of a common, national symbol set/ symbol characteristics
- Seeking to make public alerts and warnings more effective for:
 - People with disabilities or Limited English Proficiency (LEP)
 - The whole community
- Although the first 16 symbols are WEA symbols, they are ultimately intended for use with:
 - WEA
 - EAS
 - Computer and phone apps (on maps, etc.)
 - Television broadcasts of emergencies and incidents

Alert and Warning Symbols in National Alliance for Public Safety GIS Foundation (NAPSG) Symbol Library Tool

<http://www.napsgfoundation.org/all-resources/symbology-library/>



Avalanche Warning
(AVW)



Blizzard Warning
(BZW)



Child Abduction Emergency
(CAE)



Civil Emergency Message
(CEM)



Dust Storm Warning
(DSW)



Earthquake Warning
(EQW)



Fire Warning
(FRW)



Flash Flood Warning
(FFW)



Flood Warning
(FLW)



Hurricane Warning
(HUW)



Law Enforcement Warning
(LEW)



Nuclear Power Plant Warning
(NUW)



Presidential Emergency Alert
(EAN)



Radiological Hazard
(RHW)



Shelter in Place Warning
(SPW)



Tornado Warning
(TOR)

MOA Application

agreement for information or agreement (jointly between)
 FEMA and Collaborative Operating Group (COG)
 for Access to IPAWS-OPEN by Interoperable Software System(s)

Name of Sponsoring Eligible Organization: _____

Individual who will sign this MOA on behalf of the Sponsoring Eligible Organization

Name: _____

Primary Point

Name: _____

Email: _____

Organization

Mailing Address

City: _____

Alternate Point

Name: _____

Email: _____

Organization

Mailing Address

City: _____

Technical Point

Name: _____

Email: _____

Organization

Mailing Address

City: _____

Federal
 Integration
 (IPA)

Regarding
 «Name of
 Sponsoring
 Eligible
 Organization»

IPAWS OPEN

WARNING: This document
 contains information that
 is exempt from public release
 under the Freedom of Information
 Act (5 U.S.C. 552). It is the policy
 of FEMA to make this information
 available to the public in a
 risk integrated format.

Memorandum

MOA

between the
 «Name of Sponsoring Eligible Organization»
 and the

Rules of Behavior

1.0 INTRODUCTION

The following rules of behavior apply to all persons with application access to IPAWS-OPEN, Emergency Alerting, Organization, Interoperable System(s) and/or who have been issued a COGID with associated credentials for IPAWS-OPEN. These individuals shall be held accountable for their actions related to the information resources available to them and their compliance with the following rules or not using their stated privileges. The Rules of Behavior apply to users in official roles as well as their primary workplace (e.g., Emergency Operations Center (EOC)) and at all other affiliated workplaces (e.g., home/workplace). IPAWS-OPEN includes personal mobile devices including laptop computers and portable electronic devices (PEDs). PEDs include personal mobile devices (e.g., flip-phones, cell phones, text messaging systems (e.g., BlackBerry) and plug-in and online peripherals that directly interface with IPAWS-OPEN (e.g., COGID, TTY, etc.). IPAWS also encompasses USB flash drives, digital cameras, and cameras. These Rules of Behavior are consistent with existing IPAWS policies and IPAWS Information Technology (IT) Security directives and are intended to enhance the protection of user's responsibilities regarding accessing, storing, creating, editing, transmitting information using IPAWS-OPEN.

2.0 APPLICATION RULES

2.1 Official Use

- IPAWS-OPEN is a Federal application to be used only in the performance of the user's official duties or support of public safety as described in the National Incident Management System (NIMS).
- The use of the IPAWS-OPEN for unauthorized activities is prohibited and could result in criminal or civil penalties. Use of IPAWS-OPEN for unauthorized activities is prohibited.
- By utilizing IPAWS-OPEN, the user of the interoperable system(s) consents to allow access to information within its associated database for public safety to be released.
- User will be held accountable for safeguarding all configuration items and information submitted to IPAWS-OPEN. Users are expected to manage the information with supporting systems, procedures and any other entities providing system support as their task. In addition, FEMA will not be held accountable in the event of a security breach or disclosure of sensitive configuration information such as digital certificates. Each user understands that the use of digital signatures used on behalf of the COG is binding for the COG and COGID will be held accountable accordingly. In the event sensitive information is transmitted, utilization of IPAWS-OPEN may be immediately revoked.
- If anyone integrating with IPAWS-OPEN provides users to get target public safety information by means of geospatial information system, then the user shall maintain any such geospatial information as to its location within the geographic limits of their public planning authority or as near as possible, as determined by applicable state and/or local laws and duly adopted operational plans.

2.2 Access Security

- An email address provided in connection with interoperable system(s) use accounts must be associated to an approved email account assigned by the user's emergency management organization. The use of personal email accounts to support emergency messaging through IPAWS-OPEN is prohibited.
- Upon approval of the MOA by FEMA, a COG account with COGID and Digital Certificate will be created and issued to the designated technical representative. All individuals with knowledge of these credentials must obtain an official identification mechanism to confirm required approval from FEMA.
- Only Interoperable system(s) use in response to emergency or disaster security is related to their use of IPAWS-OPEN and shall abide by these Rules of Behavior.

9

- MOA Application identifies county organization name, POCs, alerting tools used

- MOA establishes the relationship between the county and FEMA, connection, communications, security
- Includes the Rules of Behavior defining official use, password rules, accountability

Required Documentation

Public Alerting Application

DDG Name _____ DDG ID# _____

Dissemination Systems Requested:

- ☐ Emergency Alert System (EAS)
☐ Commercial Mobile Alert System (CMAS)
☐ National Weather Service All Hazards Emergency Message Collection System (NatCoAlert)

Is this a statewide system?

Yes ☐ No ☐

If no, which state?

Training Certificate

Emergency Management Institute



FEMA

This Certificate of Achievement is to acknowledge that

MARK A LUCERO

has reaffirmed a dedication to serve in times of crisis through continued professional development and completion of the independent study course:

IS-00247.a

**Integrated Public Alert and Warning System
(IPAWS)**

Issued this 20th Day of January, 2018



Tony Starnes
Supervisor
Emergency Management Institute

0-2 IACET CREDIT

- Public Alerting Application
 - Defines what areas you can alert, what event codes
- Training Certificate
 - High level training on IPAWS alerting concepts
 - Strongly recommend specific training for your alerting tool, follow best practices, coordinate with state and neighboring counties

Walk Through Alerting Authority Form

Application for IPAWS Public Alerting Authority

COG Name: _____ COG ID#: _____

Dissemination Systems Requested:

☐ Emergency Alert System (EAS)
☐ Wireless Emergency Alerts (WEA)
☐ National Weather Service All Hazards Emergency Message Collection System (HazCollect)

Is this a statewide system?
☐ Yes ☐ No

If no, please list the name(s) and FIPS Code(s) for your geographic area of responsibility:
(Attach additional pages as needed)

<u>Name:</u>	<u>FIPS Code:</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Event Codes: (Check all that apply)

<u>IPAWS/HazCollect</u>	<u>IPAWS/HazCollect Event Codes</u>
☐ Avalanche Warning (AVW)	☐ Administrative Message (ADR)
☐ Civil Danger Warning (CDW)	☐ Avalanche Watch (AWA)
☐ Civil Emergency Message (CEM)	☐ Child Abduction Emergency (CAE)
☐ Earthquake Warning (EQW)	☐ Telephone Outage Emergency (TOE)
☐ Evacuation Immediate (EVI)	<u>Test Codes (EAS Only)</u>
☐ Fire Warning (FRW)	☐ Required Monthly Test (RMT)
☐ Hazardous Materials Warning (HMW)	☐ Required Weekly Test (RWT)
☐ Law Enforcement Warning (LEW)	
☐ Local Area Emergency (LAE)	
☐ Nuclear Power Plant Warning (NPPW)	
☐ Radiological Hazard Warning (RHW)	
☐ Shelter in Place Warning (SPW)	
☐ Volcano Warning (VDW)	

The undersigned has reviewed this application and the public alerting authorities requested by the applicant are consistent with the state Emergency Alert System plan, AMBER Alert System plan, or other operational public warning plans.

For the State of _____ Agency: _____

Signature: _____ Date: _____

Name: _____ Title: _____

Email: _____ Telephone: _____

COG ID#: This will be assigned later, leave it blank

What kind of alerts do you want to send? (usually all are checked)

Are you alerting for the whole state?

What county are you alerting for? (If you don't know, we can fill in the FIPS code for you)

What kind of emergencies will you alert for? Here is a good list of definitions (<http://www.srh.noaa.gov/lub/?n=nonweathercemdescriptions>)

Don't sign this. Your state reviewer fills this part out indicating that the state has coordinated with the county in accordance with state alert and warning plans

IPAWS Lab - Test Alert Viewer

IPAWS MESSAGE VIEWER x ALERT INFORMATION x ALERT INFORMATION x +

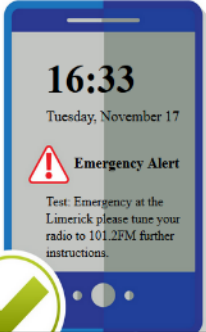
https://ipaws-open.net/ALERT_SERVICES/display_AlertInfo_Orig.php?COGID=120942&msgID=AS-MD-3d04f03b-b924-46de-8103-e6bd11

 **FEMA**

Alert Information View

Message Identifier: AS-MD-3d04f03b-b924-46de-8103-e6bd1173217a Sender: fema.ipaws.lab@gmail.com Sent Date: 2015-11-17T16:33:20-07:00

Headline: No Headline



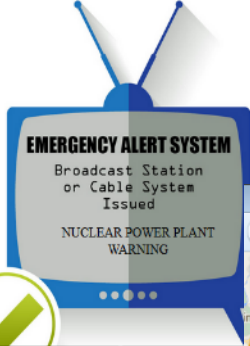
16:33
Tuesday, November 17

 **Emergency Alert**

Test: Emergency at the Limerick please tune your radio to 101.2FM further instructions.



NEA TEXT
Test: Emergency at the Limerick please tune your radio to 101.2FM further instructions.



EMERGENCY ALERT SYSTEM
Broadcast Station or Cable System Issued
NUCLEAR POWER PLANT WARNING



EAS TEXT
A CIVIL AUTHORITY HAS ISSUED A NUCLEAR POWER PLANT WARNING FOR THE 1 COUNTRIES/AREA: CHESTER, PA : ON NOV 17 2015 EFFECTIVE UNTIL



All Hazards NOAA Weather Radio



NWEM TEXT
Not an NWEM Message



PUBLIC TEXT
This message was posted to the Hazards Alert Feed

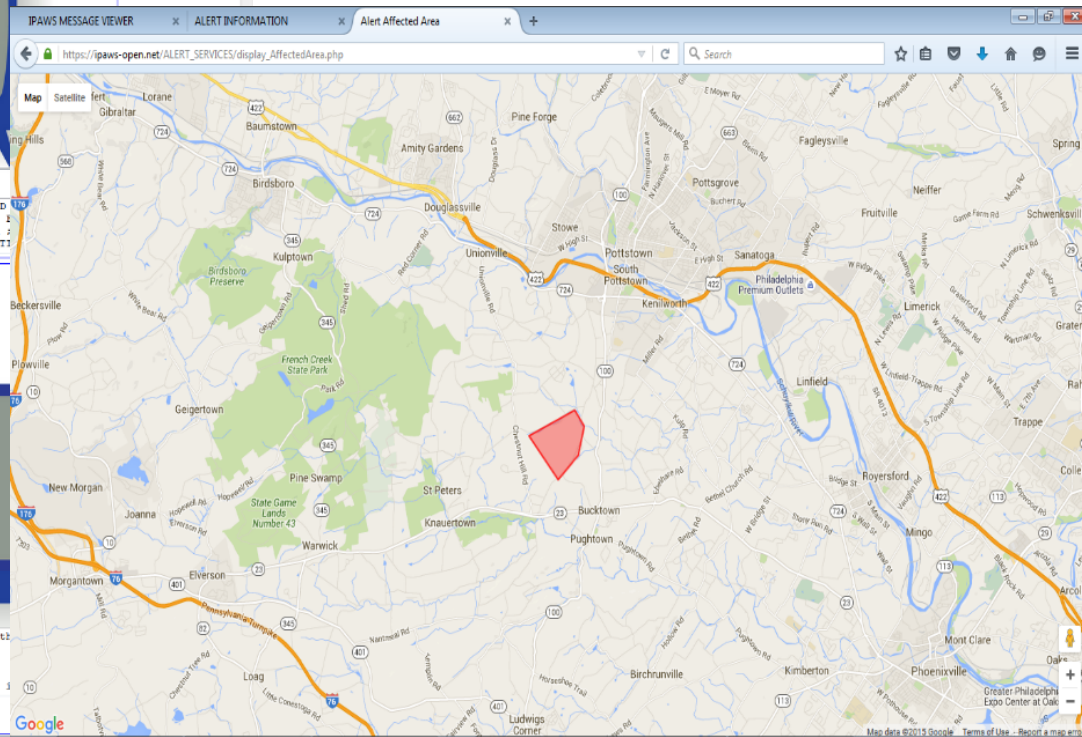
Description:
This is an exercise: There is



Web page that shows alerts processed via the IPAWS Lab environment in real time.

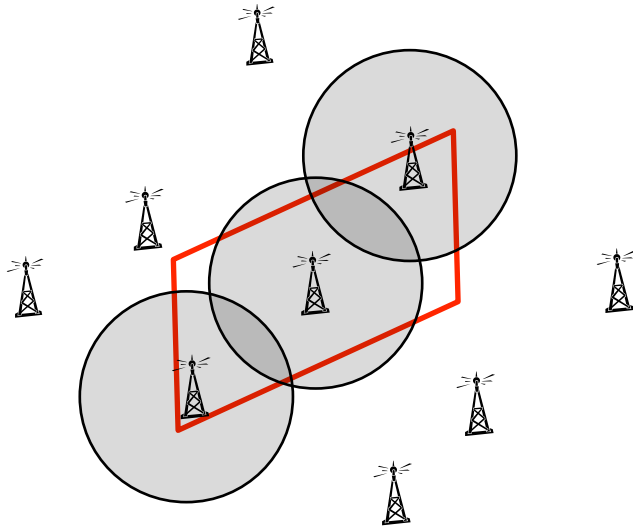
Users:

- log in with COG ID to view alerts
- can test, exercise, and train on alerting software and procedures,
- practice using tools, creating alerts

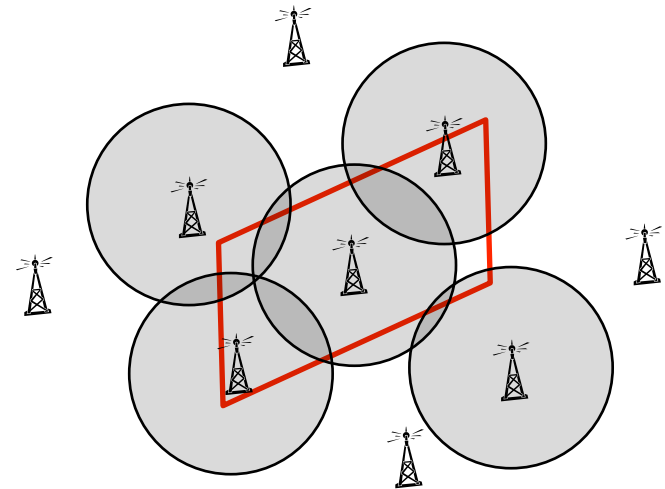


Geo-targeting of the WEA Broadcast

FCC regulations say carriers only have to geotarget at the county level. Many carriers, including the “big four”, do better by targeting the polygon if provided by the alert originator.



Carriers broadcast from cell towers within the defined warning area



At least one carrier also broadcasts from towers where signal overlaps the defined warning area

Note: Map is not drawn to scale and is for illustrative purposes only.

For more information

► Email the IPAWS inbox: IPAWS@fema.dhs.gov

► IPAWS Website: <http://www.fema.gov/ipaws/>

► EMI Independent Study Courses:

– **IS-247a: *IPAWS Introduction***

<https://training.fema.gov/EMIWeb/IS/is247a.asp>

– **IS-248: *IPAWS for the American Public***

<http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=IS-248>

– **IS-251: *IPAWS for Alerting Authorities***

<http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=IS-251>

► IPAWS Webinar and Information Mailing List:

<https://www.fema.gov/integrated-public-alert-warning-system-program-management-office-get-involved>



FEMA