

State of California Alert & Warning Guidelines

May 2024



Cal OES

GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

Governor - Gavin Newsom

Director - Nancy Ward

EAS/WEA QUICK REFERENCE FOR ALERTING ORIGINATORS

In general, the following conditions should be evaluated in determining whether the issuance of an EAS (Emergency Alert System) or a WEA (Wireless Emergency Alert) is warranted. **Important: Always consider utilizing every tool or method in disseminating any necessary public information; however, if any “No” is marked, reevaluate the need for issuing an EAS or WEA message.**

EAS / WEA Activation Reference

Yes No

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Does the situation pose an imminent threat to life or property? |
| <input type="checkbox"/> | <input type="checkbox"/> | Does the situation have the potential to adversely affect a population or geographic area? |
| <input type="checkbox"/> | <input type="checkbox"/> | Does the situation require that the public be told immediately to seek shelter or take other protective action? |
| <input type="checkbox"/> | <input type="checkbox"/> | Are other means of disseminating information inadequate to ensure rapid delivery of the information? |

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1. EXECUTIVE SUMMARY 2.0

A comprehensive alert and warning program is a critical component of a community's ability to effectively respond to emergencies. The 2017 firestorm disasters in California highlighted the differences and inconsistencies among various alert and warning programs across the State. Emergency management leadership representing California's Standardized Emergency Management System (SEMS) identified the need to establish statewide guidelines for the purpose of enabling and encouraging the consistent, inclusive, and accessible application of alert and warning best practices, procedures, and protocols.

The Legislature intends that, in the event of another catastrophe, every tool be used to alert and warn all members of the public in the affected area, including individuals with access and functional needs. The Legislature finds and declares that the safety of local communities requires designated Alerting Authorities to ensure they have multiple operators, adequate testing and training, and functional equipment and software to alert and warn all members of the community. It is therefore the intent of the Legislature that, to the extent designated Alerting Authorities have difficulty acquiring or maintaining adequate alert and warning resources, those designated Alerting Authorities may consult with the California Governor's Office of Emergency Services (Cal OES) on best practices to achieve those goals.

The California Statewide Alert & Warning Guidelines contain specific information about alert and warning considerations for individuals with access and functional needs, including individuals who have developmental, intellectual, or physical disabilities; chronic conditions or injuries; limited English proficiency or non-English speaking; or are older adults, children, pregnant, living in institutional settings, low-income, homeless, and/or transportation disadvantaged.

These Statewide Alert & Warning Guidelines were developed in collaboration with a group of local, state, federal, community, and tribal partners as part of the SEMS Technical Advisory Group through the SEMS Alert & Warning Specialist Committee.

The California Statewide Alert & Warning Guidelines provide recommendations and expectations for jurisdictions and designated Alerting Authorities implementing an alert and warning program within the State of California.

Additionally, The California Statewide Alert & Warning Guidelines provide overarching direction to the sub-components of the statewide alert and warning system, including the State Emergency Alert System (EAS) Plan, sub-jurisdictional alert and warning

programs, and local EAS and alert and warning plans.

The California Statewide Alert and Warning Guidelines address the critical components of an effective, inclusive, and comprehensive alert and warning program, including, but not limited to:

- Roles and Responsibilities.
- When and How to Issue a Public Alert or Warning.
- Methods and Technologies.
- Accessible Messaging.
- Alerting Coordination.
- Training Requirements (including access and functional needs considerations); and
- System Testing and Exercise Requirements.

The California Statewide Alert and Warning Guidelines are meant to enable the development of robust, accessible, and effective alert and warning programs throughout California by providing a comprehensive articulation of best practices, protocols, and procedures used by jurisdictions to serve all Californians.

2. ACKNOWLEDGMENTS

The Statewide Alert & Warning Guidelines were developed as part of the SEMS Advisory Group through the SEMS Alert & Warning Specialist Committee and were first approved and adopted by the SEMS Advisory Board on January 24, 2019, and have since been regularly revised to comply with evolving standards and law. Per the SEMS Alert & Warning Specialist Committee Charter, committee membership includes representatives from the following agencies, associations, and whole community stakeholder groups:

- California Governor's Office of Emergency Services
 - Office of Access and Functional Needs
 - California State Warning Center
- California Fire Chiefs Association
- California Police Chiefs Association
- California State Sheriffs Association
- Mutual Aid Regional Advisory Committee Region 1
 - Orange, L.A., Ventura, Santa Barbara, and San Luis Obispo Counties
- Mutual Aid Regional Advisory Committee Region 2
 - Contra Costa, San Francisco, San Mateo, Santa Cruz, Monterey, San Benito, Santa Clara, Alameda, Del Norte, Humboldt, Mendocino, Lake, Sonoma, Napa, Marin, and Solano Counties
- Mutual Aid Regional Advisory Committee Region 3
 - Siskiyou, Modoc, Lassen, Shasta, Trinity, Tehama, Plumas, Sierra, Butte, Glenn, Colusa, Sutter, and Yuba Counties
- Mutual Aid Regional Advisory Committee Region 4
 - Nevada, Placer, El Dorado, Alpine, Tuolumne, Calaveras, Amador, Yolo, Sacramento, San Joaquin, and Stanislaus Counties
- Mutual Aid Regional Advisory Committee Region 5

- Mariposa, Merced, Madera, Fresno, King, Tulare, and Kern Counties
- Mutual Aid Regional Advisory Committee Region 6
 - Imperial, San Diego, Riverside, San Bernardino, Inyo, and Mono Counties

The SEMS Alert & Warning Specialist Committee was first chartered in 2018 to “review and finalize the new California Statewide Alert & Warning [Guidelines] document, which will include guidance on alert & warning procedures, protocols, equipment, and training.” Committee members worked extensively over six months to develop the final draft of the first Guidelines for review and approval by the SEMS Advisory Board in 2019. The Committee most recently revised the Guidelines between January and June 2022.

The current SEMS Alert & Warning Specialist Committee member agencies are listed below:

Cal OES
Santa Barbara OEM
Contra Costa County OES
Alameda OES
Sutter County OES
Glenn County OES
Town of Truckee OES
Sacramento County OES
San Diego County OES
S. Lake Tahoe Fire
Santa Paula PD
Hercules PD
Sonoma Sheriff
AARP
Disability Rights California
American & California Councils of the Blind
Yolo County IHSS
Department of Rehabilitation

External stakeholders who participated and reviewed the drafts of the original Guidelines include, but are not limited to, the Federal Emergency Management Agency (FEMA), the National Weather Service (NWS), California Emergency Services Association (CESA), California Tribal communities, community-based organizations, California Broadcasters Association, numerous Operational Area emergency management departments, and several city departments.

3. PURPOSE

These California Statewide Alert & Warning Guidelines provide the minimum expectations for jurisdictions and designated Alerting Authorities to implement accessible alert and warning programs within the State of California. This document provides overarching direction to the sub-components of the statewide alert and warning system, including the State EAS Plan, sub-jurisdictional alert and warning programs, and local EAS and alert and warning plans.

4. INTENDED AUDIENCE

The intended audience for this document is the agencies and jurisdictions within California that have a role in ensuring the public is notified effectively before, during, and after emergencies of the necessary protective actions to be taken.

5. REVIEW AND UPDATES

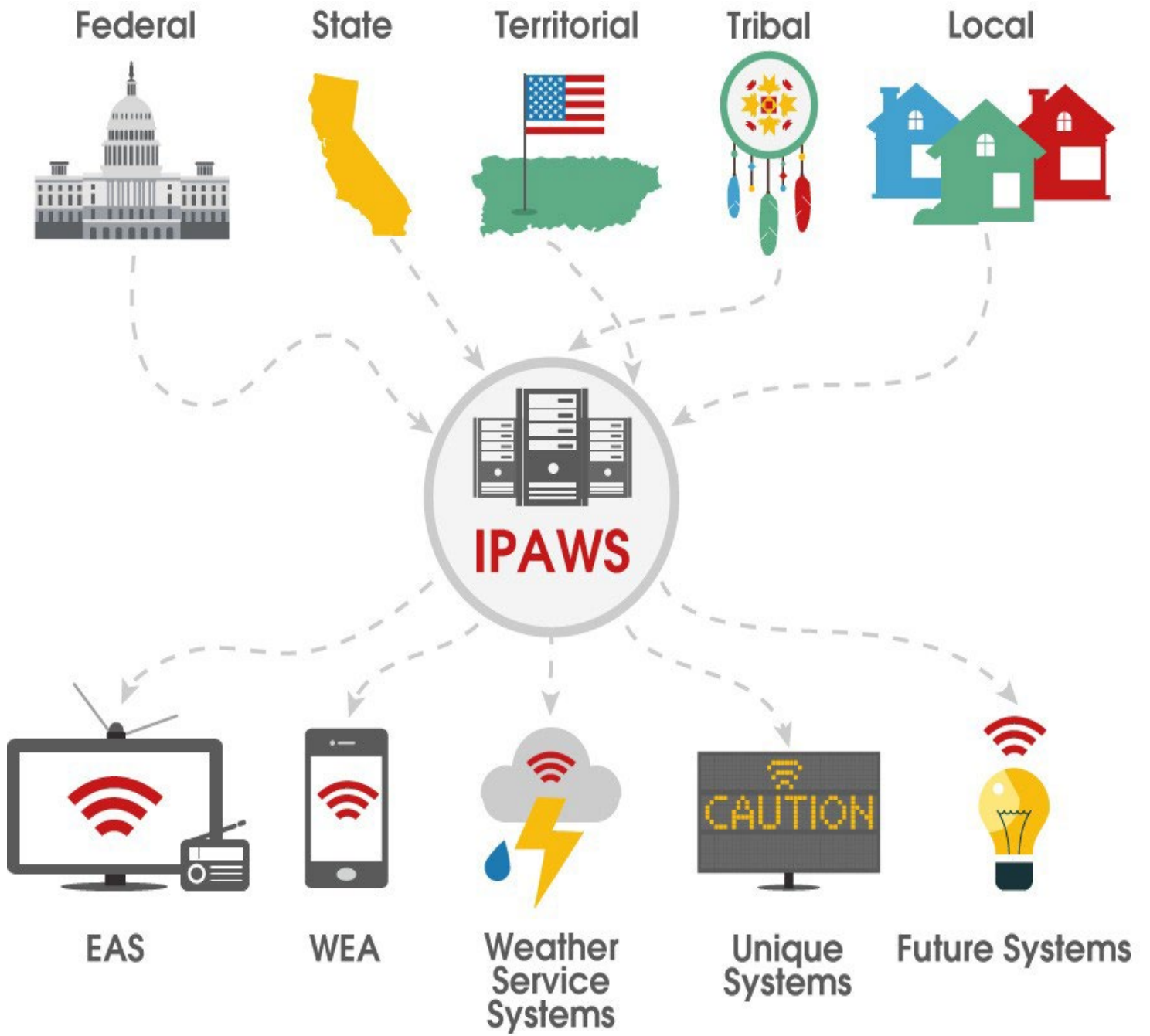
The California Statewide Alert and Warning Guidelines are reviewed annually and updated as necessary.

6. WHAT ARE PUBLIC WARNINGS, ALERTS, ORDERS & NOTIFICATIONS?

Type	Timeframe	Purpose	Examples
Watch	Prior to incidents.	Distribute guidance to the public to take one or more protective actions to reduce losses or harm.	Weather watches/warnings, and fire warnings.
Alerts	At the beginning of and during incidents with ongoing immediate threats.	Gain the attention of the public and draw their attention to a risk or hazard.	Active shooter and other dangers, hazardous materials concerns, 911 outages, AMBER alerts.
Orders	During immediate threats.	Provide immediate protective actions to reduce milling and encourage public action.	Evacuation orders, stay away/out of the area orders, and shelter in place orders.
Notifications	During and after immediate threats.	Instruct immediate protective actions and provide ongoing communications relevant to an event to reduce milling and encourage public action. Convey time-sensitive information on response- and recovery-related services.	Protective actions, evacuation routes, boil-water advisories, return-from-evacuation notices, area-accessibility updates.

7. ROLES AND RESPONSIBILITIES

Planning for, preparing, and disseminating alerts and warnings are the responsibility of multiple levels of government. Each level of government and designated entities within those levels of government hold responsibility and/or authority to ensure the overall effectiveness, inclusivity, and accessibility of the statewide alert and warning system in their jurisdiction.



7.1. LOCAL GOVERNMENT

It is an inherent responsibility of local government organizations and officials to keep members of the public informed about natural, human-caused, and technological disasters, and what actions they need to take to protect themselves and their families. Depending on how the local governments have organized and coordinated the local area alert and warning system, the local government responsibility can be inclusive of the city, special district, county, and multi-county jurisdictions.

Local government officials typically have the most accurate and timely understanding of local situations, the necessary protective actions, and the potential adverse impacts of the incident. It is incumbent upon local officials to communicate to the public, including individuals with access or functional needs, rapidly and adequately what is occurring and any steps or actions the public needs to take.

These actions could include, but are not limited to:

- Evacuation orders (including evacuation routes, contact information for accessible transportation providers, shelter information, key information, etc.).
- Locations of distribution points for food, water, medicine, etc.
- Direction to move to higher ground.
- HazMat incidents.
- Red Flag warnings.
- Weather alerts.
- Lockdowns.
- Shelter-in-place guidance.

The above scenarios may trigger a local jurisdiction to send out an alert via one or more of their alerting tools.

Specifically, local entities, as defined in the local area alert and warning plan(s), are responsible for:

- Enactment of ordinances and/or policies identifying local roles and responsibilities to enable the issuance and coordinated dissemination of alerts and warnings to the public by responsible officials within their jurisdictions regarding imminent threats to human life and health and extraordinary threats to property.
- Installation, maintenance, and exercise/testing of, and user training on, local public alert and warning capabilities within their jurisdiction.
- Understanding the access and functional needs-related considerations associated with public alert and warning systems and messaging.
 - The Cal OES Office of Access and Functional Needs' (OAFN) [Communication page](#) includes resources for emergency planning
- Using effective alert and warning practices to reach individuals with disabilities and people with access or functional needs, including persons without an understanding of the English language.
- Obtaining authority and tools for accessing federal warning systems as a Collaborative Operating Group (COG) via the FEMA Integrated Public Alert and Warning System (IPAWS).
- Participate in revisions of mandated Federal Communications Commission (FCC) local EAS plans, including approval of authorized event codes.
- Development of procedures for proper chain of command for initiating and canceling alerts, revoking accidental alerts, and rapidly correcting and updating alert details as additional information becomes available.
- Coordination with adjoining jurisdictions, Operational Areas, the State, and the NWS regarding the origination of alerts and warnings over NWS Weather Radio related to hazards that have effects across jurisdictional boundaries.
- Developing, maintaining, and submitting to the State EAS Committee a Local Emergency Alert System Plan (Local EAS Plan).



According to SEMS regulations, Operational Areas within the authority of a Local EAS Plan are responsible for coordinating response and recovery support, including coordination of mass notification alerts, to county sub-jurisdictions, e.g., cities and

special districts.

Specifically, Operational Areas are responsible for:

- Coordinating with all Alerting Authorities within an Operational Area and Operational Areas within the same Local EAS Plan, as needed to effectively manage an incident and prepare and warn the public.
- Coordinating training, testing, and exercising of countywide alerting and warning systems.
- Incorporating accessible alert and warning systems into Operational Area standard procedures and protocols; and
- Utilization of IPAWS as a component of the countywide alert and warning plan.

7.2. STATE GOVERNMENT

Recognizing that virtually all disasters emerge on a local level, the State's main public alert and warning responsibility is to provide training, consultation, and guidance on alert and warning standards and best practices to local government entities. This includes establishing access to and utilizing available urgent communications tools, such as the federal IPAWS network. The State will work with Operational Areas to support their mass notification activities, and, when requested, serve in a backup capacity for the Operational Area.

The State recognizes that local government officials have primary alerting authority in their jurisdiction based on precise knowledge of the whole community—including the access and functional needs community, the most accurate and timely understanding of local situations and necessary protective actions, and the potential adverse impacts of the incident. The State may need to issue public alerts under its own authority when an incident's severity and breadth of impact threaten multiple Operational Areas. In these instances, this should be per the parameters below. When the State issues an alert or warning, it will make every effort within the available timeframe, to coordinate with the impacted Operational Area(s), and possibly with the NWS, prior to issuing the public alert and/or warning. Local alerting for life safety takes precedence, even in cases where there are multiple counties responding to the same or similar threat.

The State of California, acting through the California Highway Patrol, is responsible for:

- Distributing public alerts regarding the well-being of at-risk children (AMBER Alerts), seniors (SILVER Alerts), and officer safety (Blue Alerts) to law enforcement, broadcasters, the National Center for Missing and Exploited Children (NCMEC), Lottery, ports of entry, and members of the public.

The State of California, acting through Cal OES, has alert and warning responsibility in the following situations:

- Relaying war emergency and other emergency alerts and notifications from state or federal authorities to appropriate offices and Operational Areas within the State.
- Issuing public alerts and warnings for all hazard events when an incident's severity and breadth of impact threaten multiple Operational Areas.

- Issuing public alerts and warnings when it has been requested by one or more Operational Areas or when a catastrophic event has impacted an Operational Area's ability to alert.
- Coordination with adjoining jurisdictions, Operational Areas, state and federal partners, and NWS regarding the origination of alerts and warnings related to hazards that have effects across jurisdictional boundaries or over NWS Weather Radio.
- Managing the California State Warning Center (CSWC) and the California Warning System (CALWAS), which is a state sub-circuit of the federal National Warning System (NAWAS) and linking the State Warning Center and State Alternate Warning Center with Operational Area warning points.
- Implementing any state laws and regulations that facilitate the efficient maintenance, testing, and use of public alert systems at the state level and make recommendations to all local Alerting Authorities to also meet those regulations.
- Reviewing all applications and plans for Public Alerting Permissions.
- Upon request, providing technical assistance to a local jurisdiction in developing and revising its emergency plans.
- Publicizing standards of practice for effective, accessible, and consistent statewide public alert and warning maintenance and execution.
- Providing standard baseline alert and warning training to Alerting Authorities and Originators.
- Directing and managing the California Earthquake Early Warning System within the State.
- Providing technical and programmatic guidance to cities, special districts, Operational Areas, 9-1-1 centers, and state and federal partners regarding the implementation and use of public alert and warning.
- Participating in the California EAS Plan Committee, which includes maintaining copies of local EAS plans.

The California State Warning Center is tasked daily with information gathering and inter/intragovernmental notifications (see California State Warning Plan at www.caloes.ca.gov/warningcenter). Nothing in this plan is intended to conflict with, or supersede, any existing arrangement for the dissemination of public alerts and warnings by local, state, or federal agencies.

7.3. TRIBAL GOVERNMENT

Tribal elected officials may designate which public safety officials in their tribe are granted the authority to alert the public regarding emergency situations occurring that can affect tribal members. These officials are responsible for informing their members about natural and human-caused disasters, and what actions they need to take to protect themselves and their families. Some of these actions could include, but are not limited to:

- Evacuation orders (including evacuation routes, contact information for accessible transportation providers, shelter information, key information, etc.).
- Locations of distribution points for food, water, medicine, etc.
- Direction to move to higher ground.
- Shelter-in-place guidance.

Tribal governments that choose to access federal warning systems via IPAWS may be responsible for:

- Installation, maintenance, user training, and exercise/testing of local public alert and warning capabilities within their jurisdiction.
- Constitutional changes, ordinances, and/or policies enabling the issuance and effective dissemination of alerts and warnings to their jurisdictions regarding imminent threats to human life and health and extraordinary threats to property.
- Understanding the access and functional needs-related considerations associated with public alert and warning systems and messaging.
- Policies and procedures for canceling and revoking accidental alerts, and for rapidly correcting and updating alert details as additional information becomes available.
- Coordination with adjoining tribal nations, jurisdictions, Operational Areas, and the State regarding the origination of alerts and warnings related to hazards that have an effect across jurisdictional boundaries.

7.4. FEDERAL GOVERNMENT

FEMA is the lead federal agency for the coordination and implementation of IPAWS. FEMA ensures that this nationwide system is maintained and operational. FEMA's stated goals for IPAWS are to:

- Operate the NAWAS to notify state warning points and other critical operations centers of a wide variety of events, including military attacks. NAWAS is controlled from FEMA's Operations Center and the FEMA Alternate Operations Center in the National Capital Region.
- Build and maintain an effective, reliable, integrated, flexible, and comprehensive alert and warning system.
- Diversify and modernize the broadcast EAS.
- Issue an IPAWS MOU and IPAWS certificate with the Collaborative Operating Group (COG) jurisdictions, acknowledging the approved event codes, and designated Alerting Authorities, ensuring required certificated training has been completed.
- Create an interoperability framework by establishing or adopting standards, such as the Common Alerting Protocol (CAP).
- Enable alert and warning to individuals with disabilities, people with access or functional needs and persons without an understanding of the English language.
- Partner with United States Geological Survey (USGS) for Earthquake Early Warning System.
- Partner with National Oceanic and Atmospheric Administration (NOAA) for seamless integration of message transmission through NWS national networks.
- Facilitate dissemination of Presidential Alerts during a national emergency.
- Receive and authenticate alert messages, then simultaneously deliver to all IPAWS-compliant public alerting systems; and
- Ensure that required Emergency Management Institute (EMI) courses are available and updated periodically.

7.4.1. NATIONAL WEATHER SERVICE

The National Weather Service (NWS), which is part of NOAA, is responsible for originating public warnings regarding weather hazards. The NWS operates several public alert and warning dissemination systems, including NOAA Weather Radio All Hazards (NWR), a network of over 1,000 VHF radio transmitters serving the population of the United States, NOAA Weather Wire Service (NWWS), and the Emergency Managers Weather Information Network (EMWIN). In addition, the NWS National Tsunami Warning Center issues tsunami statements, watches, and warnings which are disseminated by the coastal California NWS offices. While the NWS has responsibility for weather-related alerting, local governments are not precluded from sending notifications and alerts in support of weather events.

NOAA Weather Radio All Hazards (NWR)

NWR is an "All Hazards" radio network, making it a single source for comprehensive weather and emergency information. In conjunction with federal, state, tribal, and local Emergency Managers, and other public officials, NWR also broadcasts/conveys warning and post-event information for all types of non-weather hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as civil emergency messages or 9-1-1 telephone outages).

Emergency Alert System (EAS)

The EAS is a national public warning system that requires broadcasters, cable television systems, wireless cable systems, satellite digital audio radio service (SDARS) providers, and direct broadcast satellite (DBS) providers to provide the communications capability for the President to address the American public during a national emergency. The system also may be used by state, tribal, and local authorities to deliver important emergency information, such as AMBER Alerts, SILVER Alerts, and weather information targeted to specific areas.

NWS and EAS

The FCC, in conjunction with FEMA and NWS, implements the EAS at the federal level. The NWS develops emergency weather information to alert the public about imminent dangerous weather conditions.

The NWS requests the broadcasters activate the EAS for imminent and dangerous weather conditions uses.

NOAA Weather Radio (NWR) is the National Weather Service's primary means to activate EAS. NWS can assist with relaying state and local authorities' non-weather EAS messages and activations via NWR to communicate important non-weather emergency messages, such as 9-1-1 outages, shelter-in-place orders, and Civil Emergency Messages. However, as of 2018, the California Highway Patrol (CHP) Emergency Notification and Tactical Alert Center (ENTAC) is responsible for AMBER Alerts via IPAWS for the State of California, triggering EAS and WEA accordingly.

Except for national-level activation of the EAS, it is voluntary for EAS participants, such as radio and television stations, to relay NWS-generated messages. NWS EAS codes can be found here: <https://www.weather.gov/NWR/eventcodes>.

Naming Convention for EAS Event Codes

The FCC established naming conventions for EAS event codes. In most cases, and for all future codes to be approved, the third letter of all hazardous state and local event codes is limited to one of four letters:

W for WARNINGS, A for WATCHES, E for EMERGENCIES, S for STATEMENTS

- A WARNING is an event that alone poses a significant threat to public safety and/or property, the probability of occurrence and location is high, and the onset time is relatively short.
- A WATCH meets the classification of a warning, but either the onset time, probability of occurrence, or location is uncertain.
- An EMERGENCY is an event that, by itself, would not kill or injure or do property damage, but indirectly may cause other things to happen that result in a hazard. For example, a major power or telephone loss in a large city alone is not a direct hazard, but disruption to other critical services could create a variety of conditions that could directly threaten public safety.
- A STATEMENT is a message containing follow-up information to a warning, watch, or emergency.

NWS and Wireless Emergency Alerts (WEA)

The NWS in conjunction with the FCC has an established list of weather warnings that will trigger WEA for the affected area, generally defined as a polygon on a map. WEA messages are disseminated via FEMA's Integrated Public Alert and Warning System (IPAWS). The approved NWS warnings that will initiate a WEA are:

- Tsunami (TSW)
- Flash Flood (FFW) – including due to inundation due to dam failure and debris flows.
- Tornado (TOR)
- Hurricane (HUW)
- Storm Surge (SSW)
- Dust Storm (DSW)
- Extreme Wind (EWW)

8. GUIDELINES FOR ISSUING PUBLIC ALERTS & WARNINGS

Events/incidents can evolve in extreme ways. Alerts and warnings need to be an integral component of a jurisdiction's response to those events. Issuing public alerts and warnings requires the exercise of reasonable and well-informed judgment. Therefore, the action of issuing an alert or warning must be deliberative and consistent with this guidance.

There is no all-encompassing formula for making warning decisions. There are, however, some evidence-based principles and best practices that can help guide the decision-maker:

1. Incomplete or imperfect information is not a valid reason to delay or avoid issuing a warning. **Time is of the essence**, as recipients of warnings will need time to consider, plan, and act after they receive a warning message. This is particularly true among individuals with disabilities and access or functional needs, who may require additional time to evacuate or may be at increased risk of harm without notification. For example, people who cannot evacuate unaided need time to connect with assistance, their assistance to arrive, and then to evacuate. This may require connecting with accessible transportation and evacuating with adaptive equipment, such as wheelchairs or other mobility aids.
2. The utilization of alerting mechanisms within IPAWS should be the primary route to issue alerts and warnings to ensure the greatest number of recipients within the impacted area are being alerted. While IPAWS is the foundation, all appropriate means of Alert & Warning should be utilized to maximize the propagation of the message.
3. The responsibility for issuing alerts and warnings during an emergency rest with designated public officials known as Alerting Authorities, which may include city, special district, or Operational Area emergency managers/authorities, communications center staff, executive leaders, Incident Commanders (ICs), or designees in coordination with the local Public Safety Dispatcher, or Public Information Officer (PIO). Jurisdictional plans may identify designated individuals as Alerting Authorities. These may include:
 - Dispatch/9-1-1 personnel
 - Emergency management/EOC personnel
 - Fire personnel

- Field IC
 - Health officers
 - Law enforcement personnel
4. The use of large-scale, wide-ranging public warning systems is usually restricted to designated officials (Alerting Authorities). Operational Areas should ensure all local jurisdictions (cities, special districts, and, when appropriate, private sector critical infrastructure) have the capability to issue warnings and a method for requesting the coordination and use of large-scale, wide-ranging public warning systems when appropriate. When imminent danger threatens, all agencies can, and should, issue a warning to people they have authority and responsibility to inform, using whatever means are at their agency's disposal.
 5. Messages should come from an authoritative source and clearly identify the originating agency. Messages originating from an anonymous or unfamiliar source will be treated with skepticism by the public. Whenever possible, the Alerting Originator should be recognized by the target audience as knowledgeable on the threat.
 6. Approved Alerting Originators should access alert and warning systems through a unique, individually identified account so that every warning message is attributable to a specific individual. The use of shared "agency accounts" to control access to warning systems can undermine the enforceability of usage policies and may violate a FEMA MOU to access IPAWS. Additionally, all warning system users should utilize a strong password for authentication, and preferably use two-factor authentication when possible. Ensuring the security of the alerting software will reduce the chance of data breaches and bolster the public's confidence in providing their contact information to an opt-in system.
 7. Warning messages can and should be updated and refined as additional information becomes available. Additionally, when the threat has diminished or warning messages are no longer applicable, the Alerting Originator should send a message stating the earlier warning no longer applies.
 8. Warning messages sent in error should be updated, clarified, or retracted by the Alerting Originator within ten minutes of when the Alerting Originator confirms the message as being erroneous.

Action	Wireless Emergency Alerts (WEA)	Emergency Alert System (EAS)
New Alert	A new alert is created. Geo-fencing broadcast begins and continues through the indicated lifespan of the alert.	A new alert traverses the system and is broadcast at all broadcast points at one time (no repetition).
Update	Broadcast of the referenced alert ceases, and alert text is updated.	EAS treats it as a new alert, so it traverses the system and is broadcast at all broadcast points at one time (no repetition).
Cancel	Broadcast for the referenced alert notifying of a cancellation.	No action is taken if the alert has already been broadcast.

The above table is a guide to what WEA and EAS actions are needed when issuing new alerts, updating alerts, and canceling alerts.

8.1. STATEWIDE EVACUATION TERMINOLOGY

In response to calls for a statewide standard, Cal OES shall convene a working group comprised of law enforcement representatives from throughout California, as well as Firefighting Resources Organized for Potential Emergencies (FIREScope). Together, this group, in consultation with other subject matter experts, shall use the most widely accepted and clearest terminology for ordering evacuations in an emergency. A concise list of that standardized terminology is below.

California Standard Statewide Evacuation Terminology

Evacuation Order: Immediate threat to life. This is a lawful order to leave now. The area is lawfully closed to public access.

Evacuation Warning: Potential threat to life and/or property. Those who require additional time to evacuate, including individuals with access or functional needs, and those with pets and livestock, should leave now.

Shelter in Place: Go indoors. Shut and lock doors and windows. Prepare to self-sustain until further notice and/or contacted by emergency personnel for additional direction.

Evacuation Order(s) Lifted: The formal announcement of lifting evacuations in an area currently under evacuation.

Hard Closure: Closed to all traffic except Fire and Law Enforcement.

Soft Closure: Closed to all traffic except Fire, Law Enforcement, and critical Incident resources (i.e., utility, Caltrans, City/County Roads, etc., or those needed to repair or restore infrastructure).

Resident-only Closure: Soft closure with the additional allowance of residents and local government agencies assisting with response and recovery.

CONCLUSION:

Using statewide standardized evacuation terminology, the lives of first responders and the public can be saved, and confusing and conflicting information can be eliminated for more efficient, effective, and timely evacuation notices. Furthermore, the use of statewide standardized evacuation terminology enhances situational

awareness and safety for outside mutual aid resources responding to incidents in other jurisdictions.

Evacuation Management and Whole Community Support Best Practices

Alerting Authorities who utilize evacuation management software such as Zone Haven should continually maintain community outreach to educate the members of the community about which zone, they reside in. Having the public know their zone is critical to the evacuation process.

Including links in alerting messages to maps and other methods of transmitting information can also be used as a best practice.

Alerts where possible should include references to commonly understood geography and landmarks to help aid the recipient of the message to better understand whether they are in the affected area.

During an evacuation, it is essential for government agencies and community members to work together. With the intensity and frequency of wildfires and other natural disasters increasing rapidly due to climate change, the need to work together to improve and innovate the evacuation process for everyone, including individuals with access or functional needs, is more critical than ever.

9. WHEN TO ISSUE ALERTS & WARNINGS

Alerts and warnings should be issued when there is an **imminent threat to life, health, or property**. This can include alerts and warnings issued in advance of forecasted severe weather events (such as flooding) when doing so will give the public time to evacuate. When a threat, such as a Red Flag Warning, a hurricane, or extreme heat or cold, exists, it is advised to communicate that threat out to the public so that they may be better prepared, even though the threat might not be imminent. While sirens and similar warning systems are helpful in alerting a community of a hazard, they should not be used for reassuring the public that an ongoing situation or an upcoming event is not hazardous; other public information channels should be used for those purposes instead.

Fear of triggering “panic” is not a valid reason to delay or avoid issuing a warning.





“Mass panic” very rarely occurs as the result of a warning message. Note that justified anxiety or physical flight is not the same thing as panic. When public warning information is delivered by a credible alerting authority, the public usually responds by

following the recommended actions. Rarely do such warning messages lead to mistrust or panic.

When dealing with uncertain or conflicting information about a threat, the Alerting Authority should choose to **err on the side of protecting the public, including individuals with access or functional needs**. Some warning systems have provisions for communicating the general degree of certainty associated with threat information, but many only permit a yes-or-no decision about warning the public. Reasonable detail should be provided, but a warning message is not the place for an extended discussion of scientific data and probabilities.

Irrelevant warnings can fatigue the public rapidly and lead to recipients discounting further warning messages or opting out of receiving future alerts and warnings. Every effort should be made within the capabilities of the warning system(s) to **limit the warning to people at risk**. Warning systems become more effective to the extent they can target limited areas or specific at-risk populations, such as NOAA Weather Radio's Specific Area Message Encoding (SAME).

Structured training and drill program that includes decision making, message writing and incorporate outside elements to interact with will reduce **false alarms**. To comply with the FEMA/IPAWS MOA, Alerting Authorities must perform monthly proficiency tests. While repeated **false alarms** can be damaging to the credibility of both the source and the delivery channel, false alarms or erroneously issued warnings historically **have not significantly eroded public confidence** in issued warnings if they were promptly corrected or retracted. Alerting Originators should use their best judgment but err on the side of public safety.

Situation	Distribution Method(s)	Recommended IPAWS Code	Message Circumstances
<p>Life Safety</p> <p>High-Priority, High-Risk Incident</p>	<p>IPAWS – WEA IPAWS – EAS Mass Notification System Social Media Media Release</p>	 Civil Danger Warning	<ul style="list-style-type: none"> • Active shooter • Dam breach • Large, escalating, hazardous materials. • Pipeline rupture • Water supply contamination
<p>Requiring Evacuation</p>	<p>IPAWS – WEA IPAWS – EAS Mass Notification System Social Media Media Release</p>	 Immediate Evacuation	<ul style="list-style-type: none"> • Wildfire • Hazardous materials • Dam breach • Flooding
<p>Requiring People to Stay Where They Are</p>	<p>IPAWS – WEA IPAWS – EAS Mass Notification System Social Media Media Release</p>	 Shelter in Place	<ul style="list-style-type: none"> • Police activity • Hazardous materials • Environmental health hazard (e.g., air quality)
<p>Priority Information</p>	<p>IPAWS – WEA Mass Notification System Social Media Media Release</p>	 Civil Emergency Message	<ul style="list-style-type: none"> • 9-1-1 service disruption • Emergency closure of major roadways • No travel advised. • Location of confirmed NWS-issued warnings

Situation	Distribution Method(s)	Recommended IPAWS Code	Message Circumstances
Priority Public Safety Information to Follow Up on Previous Alert	IPAWS – WEA Mass Notification System Media Release	Public Safety Message	<ul style="list-style-type: none"> • Awareness/impact following NWS-issued alert (e.g., areas to avoid, detours) • Awareness/impact following Civil Emergency Message (e.g., downed powerlines, road closure, shelter locations)
System Test	IPAWS – WEA IPAWS - EAS	Required Weekly Test (RWT)	<ul style="list-style-type: none"> • Conduct end-to-end test without public alert

9.1. AUTHORIZED USE

System	Access Approval Body	Permissible Use
IPAWS	<ul style="list-style-type: none"> • Collaborative Operating Group (COG) under Local EAS Plan • Communications Committee • FEMA • Alerting Authority Application reviewed by Cal OES 	<ul style="list-style-type: none"> • Life or property threats only • Use by local EAS plan-designated Alerting Authorities.
NOAA Weather Radio	<ul style="list-style-type: none"> • Local NWS Warning Office 	
Over Highway Signs	<ul style="list-style-type: none"> • Local Caltrans office • Traffic Management Center and California Highway Patrol (CHP) 	

Procedures for sending Non-weather Emergency Messages (NWEM) to NOAA Weather Radio (NWR) via the NWS can be found here:

<https://www.weather.gov/NonWeatherAlerts/>

In order to send NWEMs to NWS, public safety officials must first [sign up to use IPAWS](#). This is a four-step process that includes completion of IPAWS web-based training, selection of IPAWS-compatible software, application for a Memorandum of Agreement (MOA) with IPAWS, and application for public alerting permissions. When a public safety official generates an alert in their software and wishes for the alert to reach the NWS, they must select "NWEM" (or a similar term used by the software) as a destination for the alert.

Public safety officials who are new to the NWS NWEM dissemination service should also coordinate with the [Warning Coordination Meteorologist \(WCM\) at their local NWS Weather Forecast Office \(WFO\)](#) on their plans for use of the service, best practices, and other helpful information.

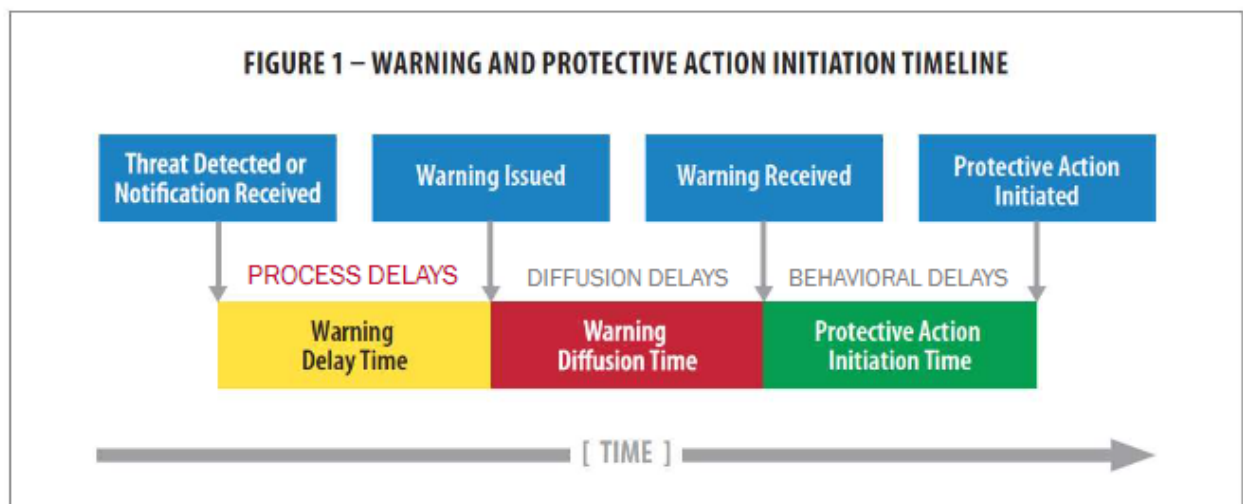
9.2. TIMEFRAMES FOR ISSUING ALERTS & WARNINGS

Agencies should always maintain an alerting capability by maintaining a primary operational capability, as well as a backup capability for use when the primary capability is not functioning or is inaccessible. Maintaining the capability to send out an alert is imperative as disasters may strike at any time, and jurisdictions are responsible for informing the public in a timely manner of the threat and protective actions to take.

Agencies should issue alert and warning messages as soon as feasible given the circumstances of the situation. This is especially important given that some members of the public – including individuals with access or functional needs – may require additional time to act on the information or instruction provided. Access by the designated Alerting Authority and Alerting Originator should not be delayed due to limited resources or non-operational equipment. Designated alerting staff should have ready and reasonable access to primary and backup alerting systems and be properly trained and well versed in how to operate the equipment.

The diagram and table on the next two pages give an overview of the timeline for warning and initiation of protective actions, and an overview of levels of urgency, severity, and certainty Alerting Authorities and Alerting Originators should consider when using the California Decision Flow Chart.

Warning and Protective Action Timeline



FEMA

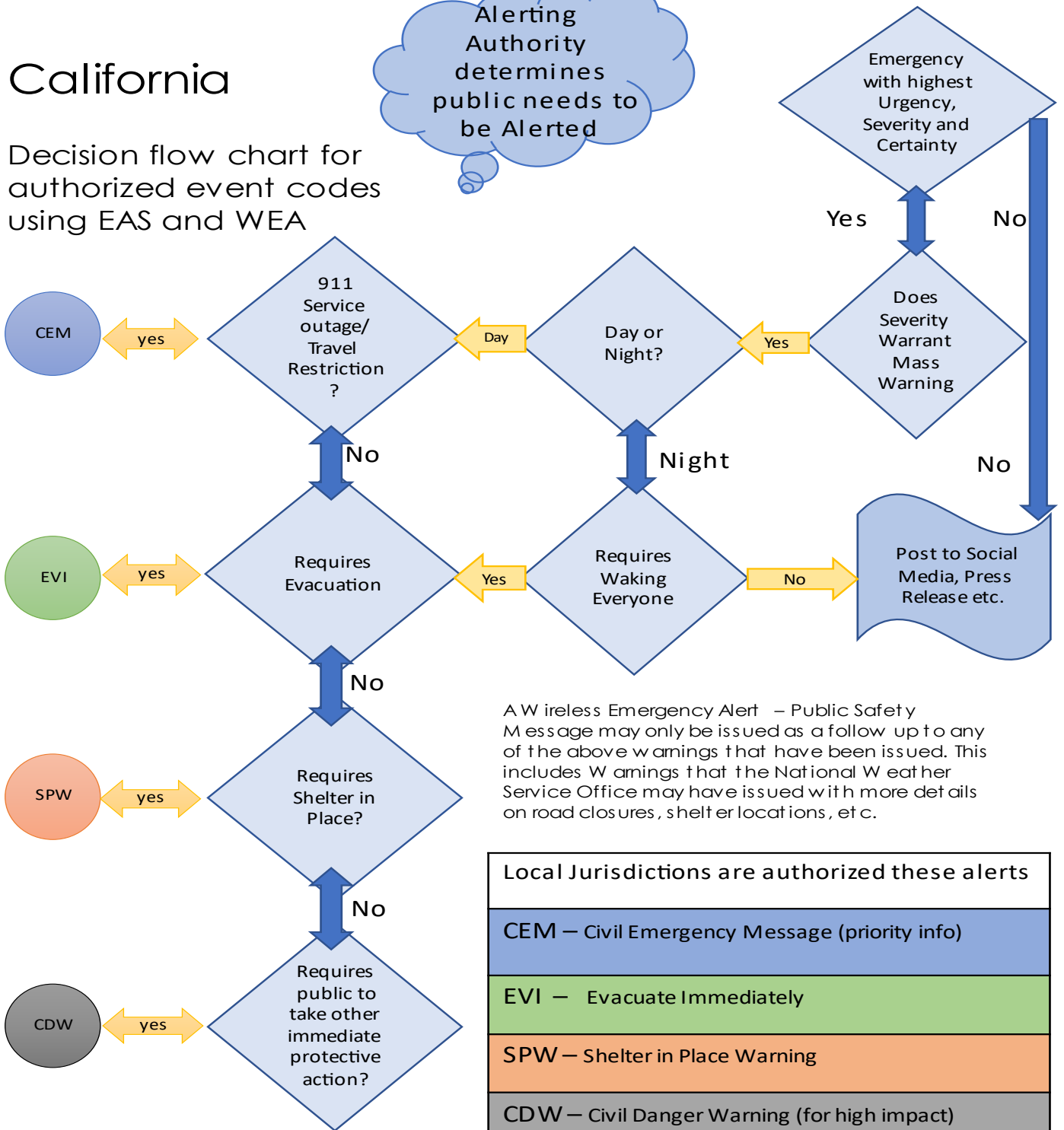
Graphic adapted from Dennis S. Mileti, Ph.D. and John H. Sorenson, Ph.D. *A Guide To Public Alert and Warnings for Dam and Levee Emergencies* (United States Army Corps of Engineers, 2015)

Urgency	Severity	Certainty
<p>Immediate</p> <p>Responsive action should be taken immediately</p>	<p>Extreme</p> <p>Extraordinary threat to life or property</p>	<p>Observed</p> <p>Determined to have occurred or to be ongoing</p>
<p>Expected</p> <p>Responsive action should be taken soon (within the next hour)</p>	<p>Severe</p> <p>Significant threat to life or property</p>	<p>Likely</p> <p>Likely (more than 50% chance)</p>
<p>Future</p> <p>Responsive action should be taken soon</p>	<p>Moderate</p> <p>Possible threat to life or property</p>	<p>Possible</p> <p>Possible but unlikely (less than 50% chance)</p>
<p>Past</p> <p>Responsive action is no longer required</p>	<p>Minor</p> <p>Minimal to no known threat to life or property</p>	<p>Unlikely</p> <p>Not expected to occur</p>
<p>Unknown</p> <p>Urgency unknown</p>	<p>Unknown</p> <p>Severity unknown</p>	<p>Unknown</p> <p>Certainty unknown</p>

California

Decision flow chart for authorized event codes using EAS and WEA

Alerting Authority determines public needs to be Alerted



A Wireless Emergency Alert – Public Safety Message may only be issued as a follow up to any of the above warnings that have been issued. This includes warnings that the National Weather Service Office may have issued with more details on road closures, shelter locations, etc.

Local Jurisdictions are authorized these alerts
CEM – Civil Emergency Message (priority info)
EVI – Evacuate Immediately
SPW – Shelter in Place Warning
CDW – Civil Danger Warning (for high impact)

10. HOW TO ISSUE ALERTS & WARNINGS

To ensure an effective alert and warning program, a jurisdiction should closely coordinate and collaborate with all public safety agencies within the jurisdiction and neighboring communities to develop a shared understanding of the local alert and warning plan prior to an incident and coordinate and collaborate on specific alert and warning actions taken during an incident.

To the best extent possible, warning messages should be distributed to all members of the communities who are at risk, including commuters, travelers and transient populations, people with disabilities and access or functional needs, non-English speakers, people in remote or isolated areas, older adults, people with limited technology, etc. Additionally, when providing emergency alerts and warnings, it is vital to note that local, state, and federal governments are keenly aware that not everyone receives or processes information in the same manner. The Americans with Disabilities Act (ADA) requires jurisdictions to make all information, including emergency alerts and warnings, accessible to their constituents. Therefore, governments must account for the access and functional needs specific to alerts and warnings that impact all individuals, including those who are deaf or hard of hearing, blind or low vision, non-English speaking, have intellectual or developmental disabilities, or any others who receive and/or process information in different ways. Emergency alerts and warnings should account for the wide array of communication needs found in the public.

In some cases, it may be useful to offer alternative protective action recommendations for people who cannot implement the preferred recommendation, such as those with disabilities or chronic conditions, or those without access to transportation, etc. Also, as it may take longer for individuals or families with members with access or functional needs to respond to a warning, earlier “pre-warnings” targeted to them directly through community-based organizations (CBOs) and private nonprofits who are providing essential services to consumers with disabilities, older adults, and caregivers in the Operational Area may be lifesaving and reduce human suffering.

As time is of the essence, pre-scripted emergency messages should be prepared ahead of time. Emergency Notification templates in multiple languages and other resources are available on the [Cal Alerts Wireless Emergency Alerts Resources webpage](#). Initial warnings should not be delayed while alternate versions are being prepared. Translations or other variations of a warning message should be treated as updates.

People rarely act on a single warning message alone. To be effective, warnings should

be delivered in accessible formats across multiple media platforms, both to increase the reliability of warning delivery and to provide a sense of corroboration that will encourage recipients to take protective actions. Each community may have multiple methods for sending out warning messages, and each of these tools should be utilized with similar messages to ensure that the greatest number of individuals in communities receive the messages. When sending out messages, coordination amongst the jurisdictions within the impacted area is important to reduce confusion and ensure contradictory messages are not sent.

11. ALERT & WARNING METHODS AND TECHNOLOGIES

11.1. METHODS

A successful alert and warning program incorporates multiple methods and technologies to accomplish the goal of reaching the largest percentage of the target population. Considerations for deciding which specific methods and technologies will be most effective for the jurisdiction's demographic, cultural, and geographical area should include:

- Mobile phone usage rate of the target population.
- Community's adoption of Voice Over Internet Protocol (VOIP) versus traditional landline telephone service.
- Potential "off-the-grid" sub-communities.
- Generational use of text versus email.
- Proportion of local versus transient population, such as travelers.
- Connectivity and bandwidth limitations of the community's geography and infrastructure.
- Individuals with access or functional needs (i.e., people with disabilities, older adults, children, people with limited English proficiency, people who have low income or are pregnant, people with transportation disadvantages, etc.).

11.2. IMPORTANT CONSIDERATIONS

All warning systems need to be **protected** from:

- Unauthorized activation.
- Improper use.
- Cyber security gaps.
- Interference with authorized activation (denial of service).
- Outage due to lack of duplication or backup services.

Special consideration should be given to implementing redundancy and enhancing interoperability, whenever possible, to prepare for:

- Loss of power.
- Loss of cell towers or overloaded cell systems.
- Internet outages.

- Overloaded networks.
- Cyber-attacks.
- Inability of carriers to redistribute.
- Overloaded infrastructure.
- Cross-jurisdictional needs.
- Availability of staff to effectively manage and deploy the warning system.

12. GENERAL FEATURES TO CONSIDER IN YOUR PROGRAM

12.1. ACCESS AND FUNCTIONAL NEEDS CONSIDERATIONS

Individuals with access or functional needs often require more time and resources to act (including securing accessible transportation and evacuating) before, during, and after disasters. Therefore, providing the whole community with accessible, timely information throughout the emergency lifecycle is essential. Failure to do so places individuals with access and functional needs at greater risk of losing their life, safety, security, and independence.

Considerations include accessible and actionable messages, time needed to act on alert or warning messages, types of events warranting alert or warning, and establishing inclusive communication strategies and networks. The [Cal OES Office of Access and Functional Needs](#) (OAFN) has additional resources.

12.1.1. ACCESSIBLE AND ACTIONABLE ALERT AND WARNING MESSAGES

Historically, individuals within the deaf and hard of hearing community have experienced exceptional difficulties getting access to life-saving information due to a lack of messaging in American Sign Language (ASL). Without equal access to emergency alerts, warnings, and notifications in American Sign Language, individuals who are deaf or hard of hearing will be disproportionately impacted – and are more likely to experience dire outcomes – before, during, and after disasters.

Many of the approximately 4 million Californians who are deaf or hard of hearing rely on American Sign Language for effective communication. As a standard practice, **emergency messaging should be made available in ASL.**

Providing emergency alerts, warnings, and notifications in ASL, written, and spoken languages does not ensure communications are understandable, and therefore actionable. To be effective for the whole community, messages should use concise, plain language – preferably at a fourth grade reading level.

To ensure messages are developed for maximum accessibility, alerting platforms should include the ability to control the following:

- Text-based distribution for ASL, languages other than English, and text-to speech translations
- TTY/TTD

- Font size
- Color contrast
- Captions
- Sound & vibrations
- Flashes
- Use of attachments (video)
- 508 compliances (use of screen-readers). This includes alternative (alt) text within graphics
- Posting of accessible electronic content, documents, and videos
- Video relay as an option

12.1.2. TIME NEEDED TO ACT

It is imperative for jurisdictions to understand that individuals with access and functional needs are often at greater risk for negative outcomes associated with disasters and may require additional time and resources to act on alert and warnings messages. Alerting Authorities should issue notifications as expeditiously as possible to safeguard the health, safety, and independence of the whole community.

As members of the public may not recognize themselves in the phrase “access and functional needs,” using plain language in messages may be more effective. Instructions such as “Persons with disabilities, older adults, pregnant women, households with children, and persons who lack transportation or who have pets or livestock should begin their evacuation process now” will help ensure all individuals take appropriate action following the receipt of notifications.

12.1.3. EVENTS WARRANTING ALERT OR WARNING

Some events or conditions, such as extreme heat, poor air quality, and power outages, disproportionately affect older adults, people with disabilities, and anyone with an access or functional need. So, whereas a heatwave or power outage may be uncomfortable or inconvenient for some members of a community, the same conditions may be deadly to others. Alerting Authorities should consider the needs of the whole community, including people with access and functional needs, when deciding whether to issue alerts or warnings.

Messages can include who may be most affected, recommended actions, and resources available, such as cooling and warming centers or where to go for medically necessary electricity.

12.1.4. INCLUSIVE COMMUNICATION PLANNING AND WHOLE COMMUNITY OUTREACH

Engaging in inclusive communication planning, such as with whole community partners shown in the diagram at the end of this subsection and establishing communication networks within the community, can expand the reach of Alerting Authorities' alert and warning messages and provide a mechanism for Alerting Authorities to maximize their understanding of community needs. Inclusion and integration of community stakeholders builds trust, partnership, and buy-in.

Operational Areas and local jurisdictions should utilize established best practices for whole community inclusion and engage with stakeholders to advance individual and jurisdictional preparedness and resilience. The Cal OES publication, "[Integrating Access and Functional Needs within the Emergency Planning Process – Best Practices for Stakeholder Inclusion](#)," is a resource.

The Centers for Disease Control and Prevention defines a Community Outreach Information Network (COIN) as "a grassroots network of people and trusted leaders who can help with emergency response planning and delivering information to at-risk populations in emergencies." Five broad characteristics that put people at increased risk are:

- Economic disadvantage
- Language and literacy
- Medical issues and disability (physical, mental, cognitive, or sensory)
- Isolation (cultural, geographic, or social)
- Age

More information about Community Outreach Information Networks is available in the CDC publication, "Public Health Workbook to Define, Locate, and Reach Special, Vulnerable, and At-risk Populations in an Emergency," which is available at https://emergency.cdc.gov/workbook/pdf/ph_workbookfinal.pdf.

A related CDC publication, "Planning for an Emergency: Strategies for Identifying and Engaging At-Risk Groups – A Guidance Document for Emergency Managers," is available at <https://www.cdc.gov/nceh/hsb/disaster/atriskguidance.pdf>.



12.2. ALERT & NOTIFICATION SCHEDULES

To ensure the community is receiving current emergency information, the following items should be considered:

- Clearly designate a position within response operations to monitor current alert and warning content.
- Ensure the Alerting Authority, Alerting Originator, Public Information Officer (PIO), Joint Information Center (JIC), and designated social media staff coordinate about and are synchronized on current notifications.
- Establish a schedule for determining whether the alerting and warning activities are achieving the intended outcomes, i.e., the public, including persons with access and functional needs, is responding as intended. This can be built into shift briefings.

Note: Some alert and warning systems have a maximum time limit for messages. Alerting Authorities should ensure all alerting stakeholders are aware of this when messages may need to be renewed.

12.3. TRANSLATION OF NOTIFICATIONS

The state of California is comprised of many diverse communities, some of which include Limited English Proficiency populations. Identifying the most commonly used languages and having pre-scripted messages are important. Emergency Notification Language Templates are available on the calalerts.org website. Having a process in place to translate warning messages will ensure the greatest number of residents receive the warnings that are being sent in their preferred language. It is important, however, not to let the inability to translate a message delay notification when time is of the essence and lives are at risk.

Culture

Due to the rich cultural diversity in California, communities may respond to messaging in an alert in different ways. For example, some communities may respond negatively to instructions from the government. Prior to an incident, it is important to locate trusted members of the community who can help convey the intended meaning of a message and educate the impacted community on the jurisdiction's alert and warning program.

Translation Technologies

Alerting Authorities should avoid reliance on free digital translation services as they can often mistranslate the message. Where feasible, Alerting Authorities should contract with professional language service providers and local ASL interpretation services providers to assist with world language services and ASL videos that can be embedded within alerts. Additionally, EAS alerts should have human-generated captions to match the audio segment in tests and alerts. Automated speech recognition is not recommended because it will not include the names of towns or cities included in the alerts. Including names of towns and cities in EAS captions is very important for people who rely on visual messages.

Message Library

Jurisdictions are encouraged to establish a message library with sample messages that have been translated into the languages most used in the communities that they serve. Pre-planned messages can save time during a disaster and ensure that accurate translations exist for messages that are critical for the whole community. Jurisdictions can pull sample templates and messages in multiple languages from the [Cal OES message library](#).

12.4. MULTI-MODAL / MULTI-PLATFORM SYSTEMS

A highly effective alert and warning program will use as many delivery methods, including email, text, telephone, and social media, as possible. Where possible, Alerting Authorities should leverage opportunities to link delivery systems, such as being able to send a single message through text and social media through a single delivery method. It is critical, however, to test the connectivity and accessibility regularly to confirm functionality and effectiveness of the various delivery methods.

12.4.1. OPT-IN FEATURES

While Alerting Authorities can use reverse calling systems to call traditional landlines in a defined area, that is not an option for Voice Over Internet Protocol (VoIP) and cellular phones. Due to the growing adoption of VoIP and cellular phones and the abandonment of traditional landlines, alert and warning systems should have an opt-in feature, enabling residents to add their contact information to the alert and warning contact database. The system should include functionality for residents and businesses to:

- Provide multiple phone numbers, email addresses, and cell numbers.

- Sign up for alerts at multiple addresses.
- Sign up for communications related to specific target groups.

Government Code Section 8593.4 authorizes each county, including a city and county, to enter into an agreement to access the contact information of resident accountholders through the records of a public utility or other agency responsible for water service, waste and recycling services, or other property-related services for the sole purpose of enrolling county residents in a county-operated public emergency warning system. Additionally, the statute requires any county that enters into such an agreement to include procedures to enable any resident to opt out of the warning system and a process to terminate the receiving agency's access to the resident's contact information.

12.4.2. IN-PERSON NOTIFICATIONS

A successful alert and warning program relies not only on digital systems for notification, but also on low-tech systems for hard-to-reach areas, fast-moving events where first responders may already be in the location, and areas where digital systems may be unavailable.

Door-to-Door Notification

Door-to-door notification can be highly effective, especially when reaching people who are asleep, in rural areas, or not reached by other warning technologies. Dispatched personnel, most often law enforcement, should be trained in assisting individuals with access or functional needs, including people who speak languages other than English or who use American Sign Language. Personnel chosen to assist with this form of notification should be clearly identified (usually by a uniform of some kind), selected to connect with the audience they are intended to notify, and trained prior to an event.

When possible, personnel dispatched for door-to-door notification should have a flyer with the appropriate multi-language warning message. The flyer should include a visualization of the message in the form of a pictogram and/or maps. Personnel can use the flyer to explain visually the warning message and/or leave the flyer behind. Regardless of whether a jurisdiction is also using another alerting system or not, it is essential that any person going door to door can communicate with whoever answers the door by including visual materials and other supporting material.

12.4.3. LOUDSPEAKERS & PUBLIC ADDRESS SYSTEMS

Built-in audio announcement systems exist in many buildings and outdoor venues. These can be valuable provided the warning message is effectively written, and the amplified audio is intelligible. As some members in the community will not be able to hear sirens or PA announcements or see digital billboards, Alerting Authorities should not rely on a single mode of communication.

Fixed-Location Public Address (PA) Systems

PA systems that are permanently installed at a facility are incredibly useful as they have already been designed by the owner of the facility to reach their target audience for internal messaging purposes. Coordination with the system owner to use these systems is important and may present challenges. In some cases, a system can be automatically triggered; in others, a more manual procedure is necessary. Special care should be impressed on the system owner to ensure all rooms in their facility are addressed. For example, sometimes PA speakers are not installed in bathrooms.

Mobile PA Systems

Public address loudspeakers are sometimes attached to aircraft and emergency response vehicles to notify people in more remote areas. Alerting Authorities must pay careful attention to the intelligibility of a message by the target audience. Systems mounted on aircraft should convey brief messages so that the entire message can be heard at a single point as the aircraft flies past. Vehicle-mounted systems may contain a slightly longer message provided the operator drives slowly enough for the entire message to be heard. Special care must be used when relying on hand systems, such as bullhorns, to enunciate the message as clearly as possible, as the device itself can make speech hard to hear or understand. This is compounded for people who are hard of hearing. Members of the deaf and hard of hearing community are unlikely to receive purely auditory emergency messages, highlighting the need to use more than one alerting method.

12.4.4. PUBLIC SIRENS

The effectiveness of sirens in penetrating well-insulated homes and buildings can be limited. Sirens can be programmed to emit multiple distinctive sounds but educating the public to associate different sounds with different meanings can be problematic and requires intensive public education.

Likewise, visitors from other areas may not recognize the meaning of a siren alert. Some siren systems are combined with a voice public address system, which can

provide additional information once the siren sound attracts attention. However, reverberation amongst buildings and sound absorption by foliage can limit the intelligible range of voice messages. Sirens can be very effective for alerting people outdoors in parks or other public spaces. If a jurisdiction uses a public siren for alert and warning, it should do an extensive public outreach campaign to train residents and visitors on what the siren means and what protective action people should take when they hear it. It is important to note, however, that visitors to the area may not understand the meaning of the siren or may interpret it differently than intended based on their local norms, and that members of the deaf and hard of hearing community are unlikely to receive purely auditory emergency messages.

12.4.5. OTHER APPROACHES

Many communities may have established assets that can serve as effective alert and warning delivery systems. Coordinating with the institutions that own these existing assets can broaden the reach of alert and warning messaging. Options may include the following:

- Church bells
- Community bells
- Foghorns
- Flashing lights
- Digital outdoor billboards

Navigational apps, such as Waze, Google Maps, and Apple Maps, may add emergency notifications to their systems to warn users of a threat or hazard.

12.4.6. INTEGRATED PUBLIC ALERT AND WARNING SYSTEMS (IPAWS)

IPAWS is a FEMA run, internet-based system that federal, state, local, tribal, and territorial authorities can use to issue critical public alerts and warnings. The three core components of IPAWS are Emergency Alert System (EAS), Wireless Emergency Alert (WEA), and the National Oceanographic and Atmospheric Administration (NOAA) Weather Radio. IPAWS also includes capabilities for unique alert systems, including dissemination of alerts through third-party applications, and future system development.

Emergency Alert System (EAS)

The federal EAS is used by Alerting Authorities to send warnings via broadcast television and radio, cable, satellite, and wireline communications pathways. EAS enables the President to interrupt all broadcasts in one or more counties with an emergency announcement. On a secondary basis, EAS can be used by local authorities in accordance with a pre-determined local EAS plan. Participation in local use of EAS is voluntary on the part of broadcasters except for the Local Primary LP-1 and LP-2 stations. EAS messages are delivered to all listeners or viewers of stations serving a targeted county. Satellite and cable TV carriers also participate in EAS, but their capacity to geographically target dissemination of messages is more limited. EAS can distribute warning messages over large areas very quickly but cannot reach people who are not watching or listening to broadcast media and cannot reach people who are asleep.

Wireless Emergency Alert (WEA)

Wireless Emergency Alerts (WEA) are emergency messages sent by authorized government Alerting Authorities through the major mobile carriers. WEA alerts are targeted to a defined geographical area and are presented differently than a typical text alert to differentiate it from regular notifications. They offer a unique alert tone and vibration accompanied by a brief (360 character) push notification displayed on the end user's mobile device. WEA is an opt-out system. Mobile device users will receive the WEA notification unless they choose to deactivate the service on their mobile device.

WEA has the capability of notifying WEA-enabled cell phones within a selected geographic area, whether they have previously signed up or opted-in. This capability allows both the residents of a given jurisdiction and persons visiting the jurisdiction to be notified.

National Oceanographic and Atmospheric Administration (NOAA) Weather Radio

Using technology like old-fashioned portable radio pagers, desktop radio receivers can be activated when they receive tone or data signals. The alerting signal is typically followed by audio information. The nationwide National Weather Radio network operated by the National Oceanographic and Atmospheric Administration (NOAA) is the best known and most widely deployed example of this technology. Tone-alert radios can provide both alerting and warning detail quickly over a wide area but require an investment in the receiving equipment that many members of the public decline to make. Some NOAA radios have Specific Area Message Encoding (SAME) capability allowing the public or jurisdictions to limit warnings only in an area of concern.

12.4.7. CABLE OR SATELLITE TV OVERRIDE

In addition to participation in the EAS, many cable TV systems have a provision by which local authorities can interrupt the audio, and sometimes the video, of all channels with emergency notifications. The strengths and weaknesses of these systems are like those for EAS. An additional consideration is the risk of blocking or otherwise limiting access to news and other valuable information.

12.4.8. LOW-POWER LOCAL RADIO STATIONS & SIGNBOARDS

Some jurisdictions have their own low-power radio stations, mobile radio trailers, and signboards. These units can receive and transmit updated alerts and warnings remotely that would help both the community and the traveling public. While people don't have to seek out the signboards to get information, they do have to seek out radio stations. However, the number of people who listen to these stations is very small, and often residents of a jurisdiction have no idea such stations exist.

12.5. TELEPHONIC & DIGITAL NOTIFICATION FEATURES

12.5.1. TELEPHONIC ALERT SYSTEMS

Many jurisdictions can call telephone numbers in an organizational database and play an audio message. This is commonly referred to as "reverse 9-1-1." Such systems can be very effective when notifying a known list of recipients, such as the members of a team, organization, or student body. Public contact data used for this purpose is best augmented by public utility customer service databases. California Government Code 8593.4 authorizes counties and public utilities to enter into an agreement for data sharing.

The possibility of precise geographic targeting of messages has made such systems extremely popular. Telephonic notification systems can provide extensive warning information. The amount of time to execute all the calls, however, can be limited by the local telephone infrastructure, length of the verbal message, or limits on the technology initiating the calls. Additionally, while landlines may automatically opt into such databases, VoIP and cell-based phone lines are not.

When designing a telephonic alert and warning capability, jurisdictions should give special consideration to the following:

- Developing regular data refresh methods and timelines (automated, manual, quarterly, monthly, weekly, etc.) to ensure data remain as up to date as possible within the system.
- Yellow and White Page data traditionally includes a wide array of numbers that are less restricted in their usage than data purchased from a phone company.
- Data purchased from the phone company may already be available by partnering with the local PSAP in your area.
- Opt-in data used in a telephonic system increases the reach of the system on VoIP and cellular lines.
- Use of a locally designed geo-coding service (prior to data upload into a system) can ensure more accurate geo-coding than a commercially developed service (e.g., Google, Bing, etc.) but potentially requires more labor and/or costs.

12.5.2. EMAIL DISTRIBUTION

Many jurisdictions may already have email distribution to various target audiences and might not even realize it. Today, almost every system that people manually sign up for will request an email address for the account. Some websites have opt-in email distribution systems designed to push email notifications to target audiences when a webpage is updated. Coordination with these system owners can create a very large email distribution network in an area. Some more common sources include.

- Governmental website change notification systems
- School district parent contact systems
- University systems
- Chambers of commerce and business groups
- Community-based organizations (CBOs)
- Utility billing systems

Written notifications distributed by email should have high-contrast colors and font or text-size adjustments to increase accessibility by people with visual disabilities.

12.5.3. WEBSITE OVERRIDE

Many websites managed by external companies via a content management system could override the home page of a county's or city's website to display an emergency message, and then re-direct users to the normal homepage.

12.5.4. NON-WEA WIRELESS ALERTS AND TEXTING

In addition to WEA, alerts can target cellphones in a geographic area through independent Short Message Service (SMS) “text”-based platforms. Alerts sent by SMS will use the properties of the end-users’ phones for things like vibration and flashing lights. When incorporating SMS into an alert and warning program, it is important to focus on the system’s “callback” number to ensure the end-user recognizes the SMS as coming from an authoritative source and to build awareness within the community.

12.5.5. INTERNET-BASED SERVICES

A wide array of internet-based alerting systems has been developed, including alerting via internet advertising channels. These tend to target pre-identified users of communities, although the advertising channel approach can theoretically target recipients geographically across a wide range of websites, games, and other applications. Internet-based alerting systems should be thoroughly tested to understand their uses and limitations. Some alerting systems, like the Alertus Mass Notification system, will post only to computers on a specific network, while others act more like a feed that will be widespread, such as RSS feeds and Google alerts.

12.5.6. CHANGEABLE MESSAGE SIGNS

Remotely programmable text and graphic displays exist along many highways, at mass-transit stations, and in other public areas. Many of these signs can only display very short messages. More sophisticated signs are deployed by advertising firms, which might also be used for public alerting. Specialized “kiosk” devices, such as lottery displays, might be used for public alerting. Such displays are effective at disseminating location-specific information but may not be seen by everyone at risk. Their ownership and control are also extremely fragmented, and contractual or legal limitations may prohibit a jurisdiction from using them.

12.5.7. HIGH-FREQUENCY RADIO

An amateur radio service that uses amateur stations during periods of emergencies is known as the Radio Amateur Civil Emergency Service (RACES). To transmit in RACES, an amateur station must be certified and registered by a civil defense organization or an FCC-licensed RACES station. RACES is administered by FEMA and acts as a communications group of the government. Typically, these activities occur during periods of local, regional, or national civil emergencies such as hurricanes, earthquakes, floods, or wildfires. RACES stations may only communicate with specified stations.

Although RACES stations operate in conjunction with federal, state, tribal, or local jurisdictions, there are other options for amateur radio operators in emergency communications, including the Amateur Radio Emergency Service (ARES). ARES members are licensed amateur radio operators who volunteer to provide emergency communications services to public safety and public service organizations.

Agencies should consider opportunities to leverage RACES and ARES to disseminate emergency communication, especially in a catastrophic incident where traditional communication methods may not be available.

12.5.8. SOCIAL MEDIA

Social media has become a critical tool for disseminating emergency messaging, instructions, and recovery information to both the media and the public. It has the capability to deliver accessible text, audio, video, images, infographics, maps, and other data. Due to its nature, it functions instantaneously and creates an avenue for a highly official two-way dialogue between the agency and very large groups of people, including news media and stakeholders. Messaging for social media must be managed very carefully. It requires a skill set and regular use. These platforms have inherent expectations for two-way engagement (e.g., the agency will be responsive to questions and comments) and therefore demand more staff time and resources. Additionally, these platforms can be resource-intensive with the need for graphic design and video production to produce content that performs better on the various platforms. Using social media to disseminate emergency messaging is more successful when the community is aware of and engaged with accounts prior to a disaster.

Social media platforms may include:

- Social networking.
- Image sharing.
- Video sharing.
- Audio sharing.
- Messaging.
- Social blogging.
- Social community.
- Discussion sites.

The following are factors to consider when choosing whether or how to incorporate social media into alerts and warnings before, during, and after emergencies:

- Social media outreach is highly dependent on working cellular and data networks; these may be impaired or down during and following an emergency.

- To maximize accessibility and comprehension, consider the variety of threshold languages in the community, and how to simplify how the message is worded.
- News outlets look to, and often share jurisdictions and agencies' social media posts, thereby helping make information more broadly available.
- Any video posts or podcasts that contain audio, or video files with audio components, should have closed captioning transcripts.
- Any images posted should be made accessible to individuals who are blind or have low vision by utilizing alternative-text to describe content.
- Briefings and updates via live and recorded video are recommended when internet access and bandwidth allow.
- Live and recorded video messages should be signed with an ASL interpreter.
- Allow public comments to be posted and seen; two-way engagement is expected by the public and dedicated staff resources are necessary to facilitate it. This is controlled by rumor-management personnel and/or social-media specialists assigned to the Joint Information Center (JIC).
- Be aware that social media use varies widely among different social, economic, and demographic groups. Information gleaned from social media analysis may not reflect a balanced or complete picture.
- Ensure messaging is consistent across all alerting platforms.

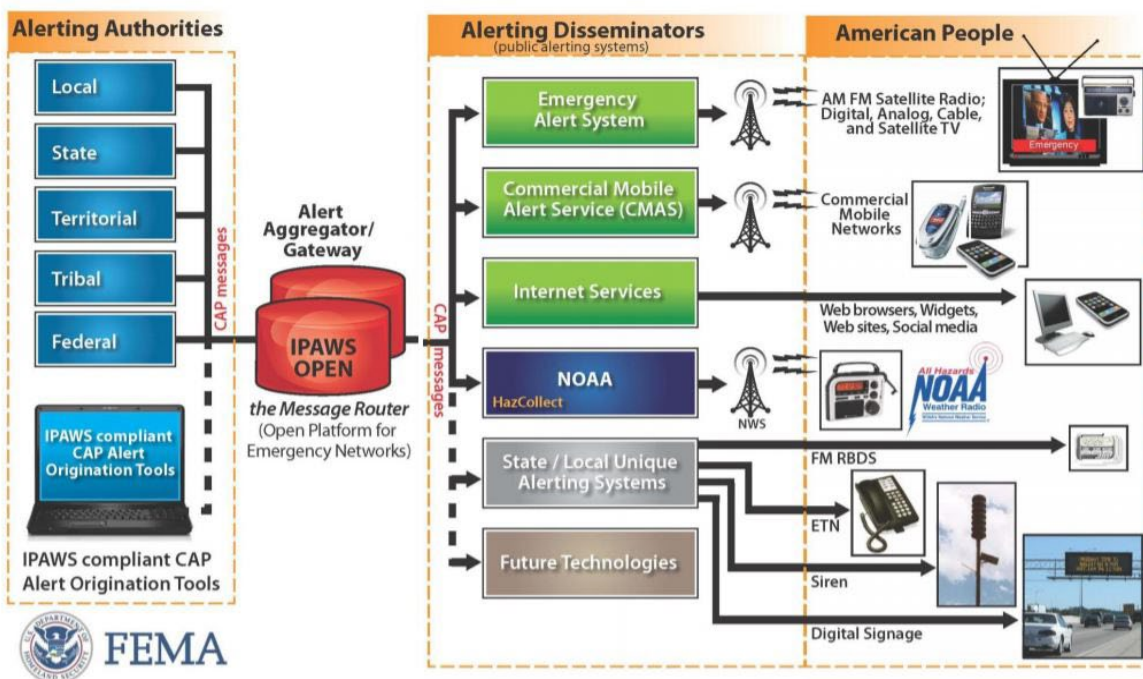
12.6. TECHNOLOGIES

12.6.1. IPAWS

This section contains information on the software used by public safety officials to send public alerts and warnings through IPAWS.

IPAWS Architecture

Standards based alert message protocols, authenticated alert message senders, shared, trusted access & distribution networks, alerts delivered to more public interface devices



To access IPAWS, Alerting Authorities must purchase (or develop) a Common Alerting Protocol (CAP) compatible software platform, which will interface with IPAWS-OPEN to disseminate the alert message to the public.

It is highly recommended that jurisdictions have a method for issuing alerts through IPAWS built into their alert & warning programs. The following checklist is provided for those jurisdictions who wish to become IPAWS Alerting Authorities directly.

IPAWS ALERT & WARNING CHECKLIST			
Step	Action	Owner	Completion Date
1	Acquire IPAWS-compatible software.		
2	Establish memorandums of agreement with FEMA.		
3	Apply for IPAWS public alerting authority permissions.		
4	Complete web-based IPAWS training (IS-247).		
5	Establish internal policies and standard operating procedures (SOPs) for use of IPAWS channels.		
6	Train internal staff and other related personnel. <ul style="list-style-type: none"> • Train IPAWS operators using IPAWS web-based training (IS-247), proprietary materials based on your WEA SOPs, and your service provider's training materials. • Train other staff (e.g., dispatchers, 911 operators, public relations personnel) on the purpose and usage of IPAWS channels to prepare them for the impacts of system use. 		
7	Coordinate plans for IPAWS deployment with emergency response agencies, such as cities and special districts, within your jurisdiction, including how to request notification by an Alerting Authority.		
8	Coordinate plans for IPAWS deployment with emergency response agencies in adjacent jurisdictions and the state.		
9	Complete internal testing of IPAWS channel operations.		
10	Educate the public about IPAWS using state-generated materials (if available), press releases, media interviews, social media, agency websites, presentations at town hall and civic group meetings, etc.		

13. ALERT AND WARNING MESSAGING

Emergency alerts and warnings must be accessible and capable of reaching diverse populations. To effectively relay information, the delivery should be coordinated, prompt, reliable, and contain actionable information for the whole community. Messages should use clear, consistent, accessible, culturally, and linguistically appropriate language and terminology. Warning messages that do not answer key questions may lead to those affected seeking additional information from uninformed friends or relatives or relying on superstitions, urban myths, and other sources of misinformation.

To maximize warning effectiveness, the tone and language of a warning message should be:

- **Specific** – The message should make it clear which people are at risk and what protective action they should take. Inevitably, some people who are not at risk will receive the message; they should be able to determine that they don't need to take protective action from the message content.
- **Consistent** – The public should receive consistent and mutually reinforcing messages through all media and from all sources.
- **Confident** – Even if the underlying information is uncertain, there should be no hedging or ambiguity about the protective action recommendations.
- **Clear** – Wording must be in plain language, preferably at the fourth-grade level, that can be easily understood. Technical jargon should be avoided.
- **Accurate** – If people learn or suspect they are not receiving correct and complete information, they may begin to ignore both the message and source.

Many warning delivery systems have limitations on character length or composition that require a warning message to be brief. However, “keep it short” is not necessarily a good guideline for composing a warning message. The warning messages should address five essential topics:

Source	Identify what agency/authority the alert or warning is coming from. This should be a source that is familiar to and trusted by the community.
Hazard	Describe the threat and its impacts.
Location	Articulate the impact boundaries in common language, i.e., use street names, landmarks, neighborhood names, etc.
Protective Action	Say what protective action to take, the time to do it, how to accomplish it, and how doing it reduces the impact.
Time	Give the expected duration, if known, or “until further notice.”

Because of character limitations and the inability to include multimedia in most initial notifications, it is also recommended to include a URL for, or a hyperlink to, a website that hosts additional alert information, or to suggest that alert recipients monitor media outlets for additional information. URLs or hyperlinks can also be used to direct individuals to messages in ASL or other written and spoken world languages. Be sure to confirm the capacity of the resource to avoid the potential of overloading the site.

The order of message content has an impact on alert recipient response time. Since different delivery channels dictate the length of messages, below are the optimal message structures for both short (90-140 characters) and long (up to 1380 characters) messages.

Short messages work best if the content is presented in the following order:

Source, protective action, hazard, location, duration/expiration time.

Longer messages work best if the message content is provided in the following order:

Source, hazard, protective action, location, duration/expiration time.

While it is impossible to pre-script message templates for every possible hazard, those responsible for alerts and warnings should prepare templates ahead of time in the most commonly used languages. Messages should give clear direction on protective actions to be taken by the public. Common protective action recommendations include:

- Shelter in place (with or without detailed instructions such as sealing and/or locking doors and windows).

- Evacuate immediately.
- Prepare to evacuate (Including contact information for accessible transportation providers or information to take some other specified action when advised).
- Observe or be on the lookout.
- Take health precautions, such as boiling water.
- Making note of distribution instructions (for food, water, ice, building materials, medications, etc.).

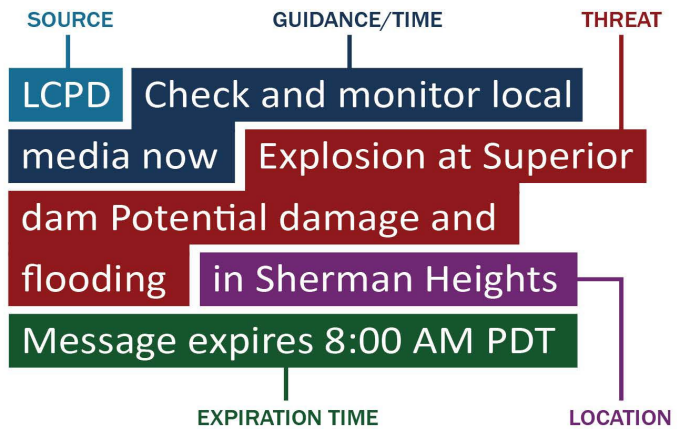
In addition to the message topics listed above, including additional incident information can help reduce milling (the time it takes for people to act). Common protective actions and information include:

- Direction to avoid calling 9-1-1 unless the caller is experiencing a life-threatening emergency.
- The number of a toll-free hotline to access more information or assistance.
- Evacuation locations, routes, road closures, shelter locations, etc.
- Reminders of what people should take with them when evacuating (medicines, pets, etc.).
- Instructions for sheltering in place or locking down.

The following diagram, adapted from Dr. Dennis Mileti's 2018 FEMA PrepTalk, shows how source, threat, location, guidance/time, and expiration time are arranged in a message template and in a sample message.



EXAMPLE



TEMPLATE

[Insert title and organization of a local, familiar, *SOURCE* authoritative message source] **Check and monitor** *GUIDANCE/TIME* **local media now** [insert description of event, dam *THREAT* name, and threat here] **in** [insert location of threat *LOCATION* here] **Message expires** [insert time here] *EXPIRATION TIME*

Graphic Credit: Dr. Dennis Mileti (2018) <https://www.fema.gov/preptalks/mileti>

Another concern is whether to select IPAWS or another alerting system. Each has a different “end-user” look, so the message should be developed to ensure all selected platforms will receive the critical information. Best-practice studies have shown that some alerts, such as AMBER Alerts, may be best targeted to transportation corridors rather than the whole community in the late evening/early morning hours.

See Appendix 18.2 for sample messages.

14. ALERTING COORDINATION

Disasters are not typically limited to jurisdictional boundaries. However, Alerting Authorities are generally bound to their own jurisdiction. When considering issuing an alert and/or warning to the public, multi-jurisdictional coordination, communication, and collaboration should be a priority.

To the extent possible, a warning originator should target warnings to the area known to be at risk and coordinate with any other affected jurisdictions as soon as possible. If the initial warning originator lacks the ability to deliver warnings to the at-risk area, coordination with other jurisdictions should be given priority. Having relationships in place to ensure continuity of operations is imperative. If a warning is issued from a higher level of government or jurisdiction, lower levels within the target area of the initial warning need not repeat that warning. However, local jurisdictions should issue additional warning messages, or request assistance from an Alerting Authority, if needed, to communicate local variations of the recommended protective action, to expand the target area for the message, or to utilize local warning dissemination capabilities that will enhance the delivery of the warning to people at risk.

Evacuation messages are particularly demanding on their originators, as they must be coordinated with agencies responsible for transport, traffic control, and evacuee reception and sheltering. Confusing and/or uncoordinated evacuation orders can have unintended adverse consequences. Evacuation messages must come from the jurisdiction's designated authority, often the local law enforcement authority, and should address information such as:

- Direction and destination of travel (with a map image included, if possible).
- Routes to be used and routes to be avoided.
- Means of travel (by auto, by bus, on foot, etc.).
- Accessible transportation and sheltering resources.
- Things to take along (papers, medications, pets, etc.),
- Expected duration of relocation (a few hours, a day, etc.).
- Phone number or social media links for additional information.

15. TRAINING REQUIREMENTS

To ensure effective and efficient use of alert and warning capabilities, agencies should hold regular training exercises testing their alert and warning policies, procedures, and systems. Training and exercises should also address inclusive messaging and access or functional needs-related considerations. It is recommended that jurisdictions create a training program consisting of readily available coursework divided into sections of system access and responsibilities. Below is a recommended structure.

Technician – A level designed for those who can physically access and send on platforms within the jurisdiction’s alert and warning program. Technicians should do:

- Monthly tests to themselves if they have not sent a real-world message during the month.
- Training from the system vendors designed to teach technical skillsets within the system specific to message sending.

If a person is to be a sender for any portion of IPAWS, he or she must also have completed the following (as per FEMA requirements):

- IS-247a: IPAWS Alerting Authority Online Training (required under FEMA MOU).
- IPAWS Rules of Behavior: Read, understand, and sign the IPAWS Rules of Behavior.

This training helps public safety officials understand the IPAWS-OPEN system, and

- Is for official use only.
 - Requires approved email accounts for access.
 - Requires users to create user IDs and passwords based on the provided guidelines.
 - Requires users to follow guidelines for protecting physical devices used for accessing IPAWS-OPEN and to use only officially approved devices.
- IS-251: IPAWS for Alerting Authorities Best Practices

Practitioner – A level designed for those who request message sends and craft messages.

Practitioners should:

- Read articles that explain the social science of alert and warning, such as:
 - A Guide to Public Alerts and Warnings for Dam and Levee Emergencies (US Army Corps of Engineers).
 - Best Practice Guide for Warning Originators (Office of the US Attorney General of the US).
 - WEA Messages: Impact on Physiological, Emotional, Cognitive and Behavioral Responses (U.S. Department of Homeland Security).
 - Best Practices in Wireless Emergency Alerts (U.S. Department of Homeland Security).
 - PrepTalks Discussion Guide: Modernizing Public Warning Messages (Dr. Dennis Mileti).
- Complete PER-304: Social Media for Natural Disaster Response and Recovery
- Complete G290-291: Basic PIO and JIC-JIS
- Understand the access and functional needs-related demographics and considerations within their jurisdiction.

Practitioners who will be a crafter of messages to be distributed through IPAWS should complete:

- IS-251: IPAWS for Alerting Authorities Best Practices

Program Administrator – A level designed for those overseeing the entire alert and warning program. Program Administrators should complete all coursework under the previous two levels and should:

- Complete training from the system vendors designed to teach technical skillsets within the system specific to data refresh and management.
- Complete training from local GIS professionals within the jurisdiction if the system(s) in use require geo-coding and/or shape files.

- Be knowledgeable in cross-jurisdictional coordination techniques within the jurisdiction.
- Complete L0388: Advanced Public Information Officer or L-402: Liaison Officer.

Cal OES through the Alert and Warning Program provides just-in-time training for Alerting Authorities which includes the following:

- Information regarding the evaluation, purchase, and operation of Wireless Emergency Alert system (WEA) and the Emergency Alert System (EAS) equipment and software, including capabilities that address communications for the access and functional needs community.
- Training of WEA and EAS function within an alert system, including message creation, and troubleshooting technical issues.
- Best practices for establishing Alert and Warning programs, consultation, and training on when and how to send WEA and EAS alerts.

16. SYSTEM TESTING AND EXERCISE REQUIREMENTS

Jurisdictions should conduct regular training and exercises, including tests, of all components of the alert and warning program to ensure the ability to send accessible emergency notification information across the entire program. Especially for systems not in use daily, testing should be coordinated prior to execution to ensure appropriate rules and regulations are followed. Any impediments should be identified and a resolution at the lowest jurisdictional level possible should be developed.

Jurisdictions should assess every component of their alert and warning program and identify the appropriate testing cycles for each piece. Systems that are used daily (e.g., social media) may not require system testing frequencies as aggressive as those for components that are used rarely (e.g., a telephonic distribution system). It is an industry best practice to conduct a system-wide test periodically to highlight flaws in system interoperability and compatibility. This is best done at the start of a potentially long event (e.g., slow-rise flooding or wildland fire) or to coincide with an educational preparedness campaign (such as the Great Shakeout or National Preparedness Month). Large-scale tests such as these have the benefit of renewing the public's knowledge of the system(s) being used as well as encouraging citizen opt-ins for those systems that allow that.

It is important to understand testing limitations. For example, it is not allowable to test on unlisted or E911 database phone numbers.

For testing to be completed on IPAWS, jurisdictions can contact the Cal OES Alert & Warning Coordinator or FEMA IPAWS Program Management Office for assistance with both the live and test message viewers and/or the Joint Interoperability Test Command Lab. Some IPAWS service providers may also provide a testing element. Testing should include law enforcement agencies, emergency management, dispatch/911 centers, neighboring agencies, media partners, and members of the community.

References and Authorities:

- The Americans with Disabilities Act of 1990, As Amended
- The California Emergency Services Act; California Government Code (GC) § 8550 et seq.
- GC § 8593.3 (AB 2311, Brown, Chapter 520, 2016)

- GC § 8593.3.(c) (AB 477, Cervantes, Chapter 218, 2019)
- GC § 8593.3.2 (AB 580, Rodriguez, Chapter 744, 2021)
- [Integrating Access and Functional Needs within the Emergency Planning Process – Best Practices for Stakeholder Inclusion, June 2020](#)
- Standardized Emergency Management System; California Code of Regulations, Title 19, Division 2, Chapter 1
- State of California Emergency Plan, October 2017
- California Public Alert and Warning System (CalPAWS) Plan, December 2016
- State of California Emergency Alert System Plan, October 2017
- Standardized Emergency Management System Guidelines, November 2009
- Code of Federal Regulations Title 47, §11.55-EAS operation during a State or Local Area emergency
- [IPAWS Strategic Plan FY14-FY18 FINAL-Signed \(06052014\)](#)
- National Incident Management System, FEMA, December 2008
- “Public Alert and Warning System,” Presidential Executive Order 13407, June 26, 2006
- Warning, Alert, and Response Network (WARN) Act, October 13, 2006
- National Response Framework, Second Edition, Federal Emergency Management Agency, May 2013
- “National Strategy for Integrated Public Warning,” Partnership for Public Warning, February 2003, Washington DC
- “Effective Disaster Warnings,” Report by the Working Group on Natural Disaster Information Systems Subcommittee on National Science and Technology Council Committee on Environment and Natural Resources, November 2000

17. GLOSSARY OF TERMS

Access and Functional Needs (AFN) – As defined in Government Code section 8593.3, access and functional needs refers to individuals who have developmental, intellectual, or physical disabilities; chronic conditions or injuries; limited English proficiency or non-English speaking; or, individuals who are older adults, children, or pregnant; living in institutional settings; low-income, homeless, and/or transportation disadvantaged.

Advisory – Highlights special conditions that are less serious than a warning, shelter in place, or evacuation. They are for events that may cause significant inconvenience, and if caution is not exercised, could lead to situations that may threaten life and/or property.

Agency – A division of government with a specific function offering a particular kind of assistance. In the Incident Command System (ICS), agencies are defined either as jurisdictional (having statutory responsibility for incident management) or as assisting or cooperating (providing resources or other assistance).

Agency Representative – A person assigned by a primary, assisting, or cooperating federal, state, territorial, tribal, or local government agency or private entity that has been delegated authority to make decisions affecting that agency or organization's participation in incident management activities following appropriate consultation with the leadership of that agency.

Alert – A communication intended to attract attention and warn of a danger or threat, typically with the intention of helping the public avoid or deal with the danger or threat.

Alert Aggregator – The Alert Aggregator, known as the IPAWS Open Platform for Emergency Networks (IPAWS-OPEN), is the part of IPAWS that collects emergency alerts, authenticates the sender, and makes the alerts available for alert dissemination services.

Alerting Authority – Alerting Authorities are public officials who are granted the authority to alert the public of emergency situations through federal, state, and local laws. These are designated in a local FCC EAS Plan and within a signed FEMA MOA.

Alert Origination Tool – Alert origination tools are software products used by emergency managers, public safety officials, and other Alerting Authorities to create and send critical life-saving messages to the public or to other emergency

management officials for collaboration.

Alerting Originator – Alerting Originators are designated individuals who have the authority and the training to draft and distribute the alert and warning messages through the approved notification systems.

AMBER Alert – The AMBER Alert Program is a voluntary partnership between law-enforcement agencies, broadcasters, transportation agencies, and the wireless industry to activate an urgent bulletin in the most serious child-abduction cases. AMBER Alerts are one of the three categories of Wireless Emergency Alerts (WEA).

Civil Danger Warning (CDW) – A warning of an event that presents a danger to a significant civilian population. The CDW, which usually warns of a specific hazard and gives specific protective action, has a higher priority than a Local Area Emergency (LAE) (e.g., contaminated water supply, terrorist attack). Public protective actions could include evacuation, shelter in place, or other actions (such as boiling contaminated water or seeking medical treatment).

Civil Emergency Message (CEM) – An emergency message regarding an in-progress or imminent significant threat(s) to public safety and/or property. The CEM is a higher priority message than the Local Area Emergency (LAE), but the hazard is less specific than for a Civil Danger Warning (CDW).

Collaborative Operating Group – IPAWS is structured around Collaborative Operating Groups (COG). A COG is a virtual organization of Alerting Authorities that holds membership in IPAWS-OPEN and manages system access within that organization. When the application process is complete, FEMA will assign each agency a COG Identification Number and Digital Certificate.

Common Alerting Protocol (CAP) – The Common Alerting Protocol (CAP) is an XML-based OASIS data format standard adopted by FEMA for exchanging public warnings between alerting technologies. CAP allows a warning message to be sent simultaneously over many warning systems to many different outlets (e.g., radio, television, mobile devices, Internet).

Community Outreach Information Network (COIN) – A grassroots network of people and trusted leaders who can help with emergency response planning and delivering information to at-risk populations in emergencies and disasters.

Disaster – The occurrence or imminent threat of widespread or severe damage, injury, or loss of life or property, or significant adverse impact on the environment, resulting from any natural or technological hazards or a terrorist act, including but not limited to fire, flood, earthquake, wind, storm, hazardous substance incident, water

contamination requiring emergency action to avert danger or damage, epidemic, air contamination, blight, drought, infestation, explosion, civil disturbance, or hostile military or paramilitary action.

Emergency – A suddenly occurring and often unforeseen situation which is determined by the Governor to require state response or mitigation actions to immediately supplement local government in protecting lives and property, to provide for public health and safety, or to avert or lessen the threat of a disaster. Local government's adaptation of this definition connotes an event that threatens to or does inflict damage to people or property, exceeds the daily routine type of response, and still can be dealt with using local internal and mutual aid resources.

Emergency Alert System (EAS) – The Emergency Alert System (EAS) is a national warning system designed to allow authorized officials to broadcast emergency alerts and warning messages to the public via cable, satellite, or broadcast television, and both AM/FM and satellite radio. Run by FEMA, the Emergency Alert System is part of Integrated Public Alert and Warning System (IPAWS).

Emergency Notification and Tactical Alert Center (ENTAC) – The California Highway Patrol (CHP) Emergency Notification and Tactical Alert Center (ENTAC) is responsible for AMBER Alerts via IPAWS for the State of California, triggering use of EAS and WEA accordingly.

Evacuation – The action of evacuating a person or a place; persons leaving a place of danger and going to a safer place.

FIPS Codes – Federal Information Processing Standards Codes (FIPS Codes) are a standardized set of numeric or alphabetic codes issued by the National Institute of Standards and Technology (NIST) to ensure uniform identification of geographic entities. The entities covered include states, counties, American Indian and Alaska Native areas, etc. FIPS Codes are used by IPAWS as one method to specify geographic warnings for Imminent Threat Alerts.

Imminent Threat Alerts – “Imminent Threat” is one of the three categories of Wireless Emergency Alerts. Imminent Threat Alerts must meet specific criteria for urgency, severity, and certainty.

Integrated Public Alert and Warning System (IPAWS) – IPAWS is available to United States federal, state, local, territorial, and tribal government officials as a way to alert the public via the Emergency Alert System (EAS), Wireless Emergency Alerts (WEA), NOAA Weather Radio, and other National Weather Service dissemination channels, the internet, existing unique warning systems, and emerging distribution technologies. In the event of a national emergency, the President will be able to use IPAWS to send

a message to the American people quickly and simultaneously through multiple communications pathways. IPAWS is managed by FEMA.

IPAWS-OPEN – IPAWS Open Platform for Emergency Networks (IPAWS-OPEN) is the Alert Aggregator that receives and authenticates messages transmitted by Alerting Authorities and routes them to alert dissemination services.

Jurisdiction – A range or sphere of authority. Public agencies have jurisdiction at an incident related to their legal responsibilities and authority for incident mitigation. Jurisdictional authority at an incident can be political or geographical (e.g., city, county, state, or federal boundary lines) or functional (e.g., police department, health department).

Law Enforcement Warning (LEW) – A warning of a bomb explosion, riot, or other criminal event (e.g., a jailbreak). An authorized law enforcement agency may blockade roads, waterways, or facilities, evacuate, or deny access to affected areas, and arrest violators or suspicious persons.

Local Area Emergency (LAE) – An emergency message that defines an event that, by itself, does not pose a significant threat to public safety and/or property. However, the event could escalate, contribute to other more serious events, or disrupt critical public safety services. Instructions and information, other than public protective actions, may be provided by authorized officials. Examples include a disruption in water, electric or natural gas service, or a potential terrorist threat where the public is asked to remain alert.

Memorandum of Agreement (MOA) – An agreement document between two or more agencies establishing reciprocal assistance to be provided upon request (and if available from the supplying agency) and laying out the guidelines under which this assistance will operate. For IPAWS, a Memorandum of Agreement (MOA) is a cooperative document written between parties to work together on an agreed-upon project or to meet an agreed objective. FEMA executes MOAs with Alerting Authorities who would like to use IPAWS to send alerts and warnings as well as system developers who would like to test products in the IPAWS-OPEN test environment.

Mutual-Aid Agreement – Written agreement between agencies and/or jurisdictions that they will assist one another upon request by furnishing personnel, equipment, and/or expertise in a specified manner.

National Warning System (NAWAS) – A communication system of the federal government which provides a warning to the population of an attack or other national emergency. Reception is at local and state warning points.

National Weather Services (NWS) – Federal government agencies charged with weather-related reporting and projections. The National Weather Service is part of the National Oceanic and Atmospheric Administration (NOAA).

NOAA Weather Radio – “The voice of the National Weather Service.” NOAA Weather Radio broadcasts National Weather Service warnings, watches, forecasts, and other hazard information 24 hours a day. It is provided as a public service by the National Oceanic and Atmospheric Administration (NOAA). The NOAA Weather Radio network has more than 480 stations in the 50 states and near adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and U.S. Pacific Territories.

NOAA Weather Radio's Specific Area Message Encoding (SAME) – Provides, in a digital format specific, timely information on the nature and location of a threat to the safety of those most immediately at risk from severe weather or other hazards. Its greatest value is to significantly improve the automatic selection and distribution of messages about events that threaten people and/or property.

Non-Weather Emergency Message (NWEM) – NWEM refers to emergency messages about hazardous events for the public that are originated by government organizations other than the National Weather Service, but still utilize NWS alert dissemination services.

Operational Area – The county and its subdivisions with the responsibility to manage and/or coordinate information, resources, and priorities among local governments and serve as the link between the local government level and the regional level.

Presidential Alert – A Presidential Alert is one of the three categories of Wireless Emergency Alert (WEA) messages. Presidential Alerts are reserved for use by the President of the United States in the event of a national emergency.

Primary Entry Point (PEP) Stations – Primary Entry Point (PEP) Stations (also known as LP-1 and LP-2) are private/commercial radio broadcast stations that cooperatively participate with FEMA to provide emergency alert and warning information to the public prior to, during, and after incidents and disasters.

Severe Weather Potential Statement – This statement is designed to alert the public and state/local agencies to the potential for severe weather up to 24 hours in advance. It is issued by the local National Weather Service office. This could be used to make citizens aware of the non-weather situation.

Severe Weather Statement – A National Weather Service product that provides follow-up information on severe conditions which have occurred or are currently occurring.

Could use a statement for evacuation or shelter-in-place updates.

Shelter in Place – Take immediate shelter where you are at home, work, school, or wherever you can take protective cover. It may also mean "seal the room"; in other words, take steps to prevent outside air from coming in.

SILVER Alerts – Information about at-risk seniors or older adults distributed by California Highway Patrol through the Emergency Alert System (EAS).

State – When capitalized, refers to the State of California.

Warning – Communication intended to persuade members of the public to take one or more protective actions to reduce losses or harm.

Wireless Emergency Alerts (WEA) – Wireless Emergency Alerts (WEA) were established pursuant to the Warning, Alert and Response Network (WARN) Act under Federal Communication Commission (FCC) rules. Alerting Authorities can broadcast WEAs to cellular carrier customers with compatible mobile devices located in the geographic vicinity of cellular towers serving an affected area.

18. APPENDICES

18.1. RECORD OF CHANGES

The California Statewide Alert and Warning Guidelines will be reviewed at a minimum, every two (2) years. The SEMS Alert and Warning Committee is responsible for conducting the review. Time critical updates may be initiated at any time and submitted using this same process. Any updates or changes to this document will be submitted to the California Governor’s Office of Emergency Services Leadership for approval prior to implementation.

Once approved, all changes to the document will be recorded in the Revision Record.

Revision Record

VERSION	DATE	DESCRIPTION OF CHANGE
1.0	March 2019	GC § 8550 et seq. GC § 8551
2.0	September 2023	GC § 8593.3 GC § 8593.3.(c) GC § 8593.3.2

18.2. ALERT AND WARNING PROGRAM CHECKLIST

Minimum expectation checklist for jurisdictions and designated Alerting Authorities implementing an alert and warning program within the State of California.

Establishing an Alert & Warning Program	
<input type="checkbox"/>	Develop a Local Alert & Warning Plan that includes all of the key steps below.
<input type="checkbox"/>	Clearly identify and train designated Alerting Authorities within the jurisdiction on local alert & warning capabilities and their role and responsibilities in the Local Alert & Warning Plan.
<input type="checkbox"/>	Clearly identify and train designated Alerting Originators within the jurisdiction on local alert & warning capabilities and their role and responsibilities in the Local Alert & Warning Plan.
<input type="checkbox"/>	Develop a training plan for Alerting Authorities and Originators to ensure expertise on local alerting protocols, system expertise, and IPAWS, including Emergency Alert System (EAS) Event Codes and Wireless Emergency Alerts (WEA).
<input type="checkbox"/>	Apply for IPAWS at https://www.fema.gov/how-sign-ipaws to obtain authority and tools for accessing federal warning systems.
<input type="checkbox"/>	Select, install, and train on a public alert & warning platform that incorporates a wide range of alerting methods.
<input type="checkbox"/>	Establish redundant alert & warning capabilities via neighboring jurisdictions, the California State Warning Center, and the National Weather Service.
<input type="checkbox"/>	Test coordination protocols with the primary and secondary Public Safety Answering Point (PSAP) per the Local Alert & Warning Plan.
<input type="checkbox"/>	Coordinate alert and warning protocols with cross-agency, cross-jurisdictional partners, the State, and the National Weather Service (NWS).
<input type="checkbox"/>	Confirm that the warning system technology is secure, and software is up to date.
<input type="checkbox"/>	Identify and train multiple individuals as designated Alerting Authorities and Originators to ensure someone with authority to approve an alert and someone with the ability to execute an alert is accessible at all times.
<input type="checkbox"/>	Ensure messaging platforms account for accessibility considerations for individuals with access or functional needs.
<input type="checkbox"/>	Conduct routine emergency exercises and drills to test the Alert and Warning System, including alerting protocols, roles and responsibilities, and technology capabilities.

<input type="checkbox"/>	Read and understand the Statewide Alert & Warning Guidelines, CA State Warning Plan, and, if applicable, County and/or Local EAS Plan.
<input type="checkbox"/>	Incorporate alert and warning systems into Local and Operational Area standard procedures and protocols, as appropriate.
<input type="checkbox"/>	Coordinate with all Alerting Authorities within an Operational Area, Operational Areas within same Local EAS Plan, and neighboring jurisdictions that serve the same population(s).
<input type="checkbox"/>	Coordinate training, testing, and exercising of countywide alerting and warning systems.
Executing an Alert & Warning Program	
<input type="checkbox"/>	Issue warnings when there is an imminent threat to life or health.
<input type="checkbox"/>	Ensure that alert and warning messages are accessible and issued as soon as feasible.
<input type="checkbox"/>	Confirm the jurisdiction for the incident prompting the alert.
<input type="checkbox"/>	Confirm the incident location.
<input type="checkbox"/>	Ensure warning messages are distributed to, and are accessible for, all members of the community at risk, including persons who use commonly spoken languages, individuals who are blind, have low vision, are deaf or are hard of hearing.
<input type="checkbox"/>	Craft messages with appropriate tone and language to maximize warning effectiveness.
<input type="checkbox"/>	If other jurisdictions (cities, Operational Areas, tribes) are affected, ensure those jurisdictions' public safety officials and PSAPs are provided the emergency alert and warning information.
<input type="checkbox"/>	Ensure warning messages are updated and refined as additional information becomes available.
<input type="checkbox"/>	Ensure that a warning message sent in error is promptly clarified or retracted.
<input type="checkbox"/>	Avoid issuing irrelevant warnings.
<input type="checkbox"/>	Implement considerations for the whole community.
Issuing Alert & Warning Notifications	
<input type="checkbox"/>	Limit the alert and warning distribution area, as much as technically feasible, to the area at risk.

<input type="checkbox"/>	Ensure the notification is reviewed for accuracy by a second person for verification before dissemination, whenever feasible.
<input type="checkbox"/>	Identify the originating agency clearly.
<input type="checkbox"/>	Ensure the message includes source, hazard, location, protective actions, and timeframe whenever possible, given message length constraints.
<input type="checkbox"/>	Update and refine messages as additional vetted information becomes available.
<input type="checkbox"/>	Ensure that any message sent in error is promptly clarified or retracted.
<input type="checkbox"/>	Ensure accessible resources are available to find additional information about the alert and warning notification.
<input type="checkbox"/>	Send a follow-up message when the threat has passed, or the warning is no longer applicable.
Maintaining an Alert & Warning Program	
<input type="checkbox"/>	Establish a regular (weekly or monthly) alert and warning technology maintenance check to confirm technology is operational.
<input type="checkbox"/>	Annually review and update the Local Alert and Warning Plan.
<input type="checkbox"/>	Annually review, update, and train (new personnel) the key personnel with alert and warning responsibilities within the Local Alert & Warning Plan.

18.3. ALERT AND WARNING SAMPLE MESSAGES

Below are sample messages alerting agencies can use as a guide to draft a specific message relevant to a local emergency. These samples are not exhaustive. Final messages should always be tailored to the specific needs of the unique event precipitating their need.

18.3.1. EVACUATION SAMPLE MESSAGES

Long Messages

- This is [Agency] with a mandatory evacuation order for [location]. Take the following protective actions and leave immediately: 1. Gather all family members. 2. Gather all pets. 3. Gather only essential items. 4. Be sure to bring essential medications with you. 5. Turn off all appliances and lights in your home.

Lock your home. The evacuation route is: [Evacuation Route]. An Evacuation Center is open at [Name and Location of Evacuation Center]. For more

information, please tune to local radio and television stations, visit [url], or call [###-###-####].

- Marin County Sheriff's Office is issuing a mandatory evacuation order for [location]. The National Weather Service has issued a flood warning for [location]. All residents in the impacted area should evacuate immediately. An Evacuation Center/Shelter is open at [location]. For more information, go to [insert resource]. Please listen to [radio station] for updated details.

Short Message

- Wildfire threat–Evacuation Order for [location]–Leave now–Details on [Agency] website

18.3.2. SHELTER-IN-PLACE SAMPLE MESSAGES

Long Messages

- This is [Agency] reporting mandatory shelter-in-place for residents in [location] due to a hazardous materials release. Take self-protective actions immediately: 1. Go inside immediately and stay inside your house or building. 2. Bring pets indoors only if you can do so quickly. 3. Close all windows and doors. 4. Turn off air conditioners and heating system blowers. 5. Close fireplace dampers. 6. Gather radio, flashlight, food, water, and medicines. 7. Call 911 only if you have a true emergency. You will be advised when this dangerous condition has passed, and it is safe to go outside and resume normal activities. For more information, please tune to local radio and television stations, visit [url], or call [###-###-####].
- The Fire Department requests everyone within a ½ mile radius of [location] to get inside and remain inside due to a hazardous materials release. Stay indoors, close your windows, turn off your air conditioner, and bring your pets indoors. More information to follow. [link]

Short Message

- Hazardous Release. All within ½ mi of [location]: Get Inside. Stay Inside. Stay Tuned.

18.3.3. WEATHER AWARENESS SAMPLE MESSAGES

Long Messages

- This is [Agency] reporting mandatory evacuation order for [location] due to potential flooding. Take the following protective actions and leave immediately:
 1. Gather all family members or other individuals.
 2. Gather all pets
 3. Gather only essential items.
 4. Be sure to bring essential medications with you.
 5. Turn off all appliances and lights in your home.
 6. Lock your home. The evacuation route is: [Evacuation Route]. An Evacuation Center is open at [Name and location of Evacuation Center]. For more information, please tune to local radio and television stations, visit [URL], or call [###-###-####].
- The National Weather Service is predicting flooding in [location] within the next 24 hours. Police are advising residents who live in this area to be prepared for potential evacuation at any time. Information on how to prepare to evacuate is [here](#). Updates to follow.

Short Message

- Flood Warning for [location]. Avoid area. Turn Around–Don't Drown. Stay tuned for updates.

18.3.4. ACTIVE SHOOTER SAMPLE MESSAGE

Long Message

- This is [Law Enforcement Agency] reporting an active shooter near [location]. Avoid the area. If you are near [location], get inside, stay inside, and take the following protective measures: 1. Go inside immediately and stay inside your residence. 2. Bring pets indoors only if you can do so quickly. 3. Close and lock all windows and doors. 4. Call 911 immediately if you have a true emergency or hear or see any suspicious activity in or near your location. You will be advised when your safety is no longer at risk. For more information, please tune to local radio and television stations, visit [URL], or call [###-###-####].
- As of [time], Police advise the public to avoid the area of [insert location]. Officers are responding to an active shooter. Those located in the area should seek shelter and mute phones. If engaged with the shooter, RUN, HIDE, FIGHT. Please go to [link] for additional information and stand by for further instruction.

Short Message

- Active shooter near [location]. Avoid Area or Run, Hide, Fight. Stay tuned for updates.

18.4. MODEL PROGRAM & SAMPLE LOCAL ALERT AND WARNING PLAN

Based on local needs, a model alert and warning program contains the following:

ALERT & WARNING PROGRAM CONCEPT



THREAT

Exists or is imminent



SITUATIONAL AWARENESS

Dictates that the public be warned

PROGRAM

MANAGEMENT

1. Immediate, 24/7 availability and responsiveness
2. Clear operating authority and established procedures
3. Capability to obtain and integrate additional resources
4. Robust, redundant, and survivable technology systems
5. Resources that effectively serve individuals with Access and Functional Needs

RESOURCES

- Staff
- Emergency Management
 - Law Enforcement
 - Fire
 - EMS
 - Dispatch
 - Authorized Public Information Officers Trained/ Experienced message originators and system activators
- Technology

KEY COMPONENTS



COMMUNITY ENGAGEMENT

PUBLIC EDUCATION



PROCEDURES

JURISDICTIONS



DELIVERY SYSTEMS

The sample Local Alert and Warning Plan below is for a fictional county called California County. It contains the basic elements necessary to establish and maintain an effective alert and warning program. Jurisdictions in the process of assessing an existing program or establishing an initial program can use this sample to begin discussions within their jurisdiction on how to develop a robust program that meets the needs of their specific community. The sample plan is not a final plan for any one jurisdiction. The sample is provided as an initial starting point from which a local jurisdiction can develop a detailed final plan through extensive collaboration and coordination with internal and external stakeholders based on specific local needs and considerations.

In addition to the components of the sample plan below, local jurisdictions should consider the following topics when developing their custom plan for the needs of their specific jurisdiction:

- Training coordination between neighboring jurisdictions
- Memorandums of Understanding/Agreement with local partners
- Authorized Requestors
- Requesting Procedures