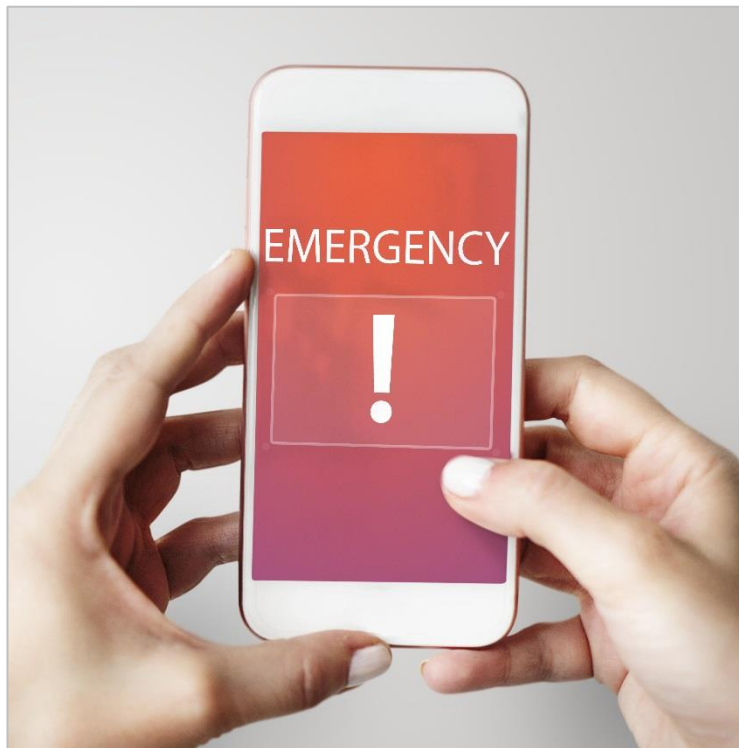# Sonoma County Operational Area Emergency Operations Plan Annex

Community Alert & Warning

DEPARTMENT OF EMERGENCY MANAGEMENT

March 2021

TABLE OF CONTENTS

As an Annex to the Sonoma County Emergency Operations Plan, this document is subject to revision at any time.

Comments and suggestions should be directed to:

County of Sonoma
Department of Emergency Management
707-565-1152

I. INTRODUCTION

Purpose

This Annex establishes general and specific policies, procedures, and protocols for the use of Alert and Warning systems in the Sonoma County Operational Area (Op Area) during actual or potential emergencies that pose a significant threat to life or property. This plan serves as a functional annex to the *Sonoma County/Operational Area Emergency Operations Plan* (EOP).

Timely and effective alerts and warnings are critical to life safety of Sonoma County residents, visitors, and first responders. Residents and visitors must be informed of threats and directed to take appropriate action as quickly and as accurately as possible. Therefore, it is necessary to clearly define authorities, responsibilities, and procedures.

The words "alert" and "warning" often are used interchangeably, but in this document those words are used in specific senses[1]:

> **Alert** - A communication intended to <u>draw the attention</u> of recipients to some previously unexpected or unknown condition or event.

> **Warning** - A communication that encourages recipients to <u>take immediate protective actions</u> appropriate to an emergent hazard or threat.

Scope

This Annex does not preclude an individual jurisdiction from developing plans for Alert and Warning as long as those plans are executed within the authority and boundaries of their respective jurisdiction. However, any alert that is initiated via County systems, by agreement or by request, will conform to this Annex.

Alert and Warning Objectives

This Annex supports the four key objectives of the Sonoma County Alert & Warning program:

1. Proactively warn the public of threats by providing timely, targeted, accurate, and actionable information.
2. Use multiple, redundant and overlapping alerting systems to ensure the best possible dissemination of alerts and warnings.
3. Incorporate social equity measures and ensure the ability to reach individuals with Access and Functional Needs (AFN) and those who are non-English speaking by identifying potential barriers and implementing mitigation strategies as required.
4. Coordinate and assist with the delivery of alerts and warnings across jurisdictional boundaries to assure continuity of messaging.

---

[1] State of California, California Public Alert and Warning System Plan, December 2016.
http://calalerts.org/documents/calpaws/01California-State-Warning-Plan.pdf

Situation Overview

Alert and Warning is a critical function of Emergency Management. The ability to communicate with the general public is essential to the preservation of life and property.

Currently, the field of Alert and Warning is in a state of rapid and significant evolution[2]. Traditional methods of communication such as landline telephones, broadcast television and radio are in decline as U.S. residents shift to wireless broadband, social media, and online platforms for communications[3] and news[4].

Alert and Warning technology has been transformed in the last 10 years in both capability and complexity:

- The widespread adoption of mobile devices and supporting data networks has produced a radical increase in individual connectivity.

- The increased use of Geographic Information Systems (GIS) enables the rapid identification and analysis of specific geographic locations. Specialized GIS hazard assessment models provide rapid forecasts of potential effects.

- The development of competing commercial software systems has produced a new service line which can rapidly deliver multimodal messages to a variety of personal devices and systems (text, cell phone, cable/internet, etc.).

- Wireless alert and warning systems now hold the promise of enabling alert activators to more accurately define target geographic areas.

Public expectations for local government alert and warning services have often escalated significantly beyond current industry practices:

- Time: community members may expect alert and warning messages to be delivered within minutes of a no-notice event (e.g. fire) and hours in advance of a slowly developing event (e.g. flooding).

- Custom delivery: many community members have an expectation that even if they are not enrolled in a local system, that the government will locate them and deliver warning messages to the device/system at hand and in a form/language that is understandable to the recipient.

- Detailed situational awareness: Given the specificity and timeliness of the alert and/or warning message, recipients assume that first responders fully understand the nature, scope, and severity of the incident and this information will be immediately conveyed to the recipient.

---

[2] U.S. Dept. of Homeland Security, Cybersecurity and Infrastructure Security Agency. "Essentials of Alerts, Warnings and Notifications." April 2020.   https://www.cisa.gov/publication/alerts-and-warnings
[3] U.S. Dept. of Health Services, National Center for Health Statistics. "Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, January-June 2020." https://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless202102-508.pdf
[4] Pew Research Center. "Key Findings about the Online News Landscape in America." September 11, 2019. https://www.pewresearch.org/fact-tank/2019/09/11/key-findings-about-the-online-news-landscape-in-america/

- Specific instructions: The capacity for systems to deliver detailed information and graphic content leads recipients to expect instructions customized to their specific circumstance on what action to take, which evacuation routes are recommended, and where additional resources are available.

- Additional information: Community members expect to be able to corroborate the warning message with other sources and obtain additional details (e.g. a phone number to call or an immediately available website).

However, there are significant social and technical challenges to the effective use of alert and warning system including:

- Economic disparity can limit communication. For example, seniors, migrant workers, immigrants, renters and persons living below the poverty line are likely to have given up landlines but not adopted more expensive cell phones capable of receiving wireless alerts. Those experiencing homelessness may be unreachable through any telecommunications system and may be actively avoiding contact with local authorities, making in-person contact difficult.

- Another key issue is the uneven availability of communications systems such as the landline/cable internet and wireless broadband. While 92% of Op Area residents may have access to the internet, 8% do not – and these are often residents living in economically disadvantaged or geographically remote areas. Many warning systems may not be able to reach them. Recent disasters continue to show that people who experience marginalization because of inadequate infrastructure and limited access to basic services are also disproportionately impacted.[5]

- Individuals with Access and Functional Needs (AFN) historically experience a disproportionate number of fatalities during a disaster[6] in part because alerts may not reach them soon enough or in an appropriate form to allow for timely response or evacuation.

- Sonoma County is host to some 10 million visitors each year – about half of whom overnight. These visitors are not enrolled in SoCoAlert, may not be familiar with the Hi-Lo evacuation sirens, and many will be unreachable by WEA.

- Geography and terrain can be significant barriers. In many rural parts of the Op Area, wireless broadband/cell service is spotty or completely unavailable. Landline telephone and cable systems are prone to failure due to loss of power or line damage and availability may be limited. Radio signals are also impacted by mountain ranges and deep valleys. See Appendix A (Communications Hazards and Capabilities) for a more comprehensive analysis.

---

[5] Climate and Development Knowledge Network. "Equity and Inclusion in Disaster Risk reduction: Building Resilience for All." 2014. https://www.preventionweb.net/publications/view/40846

[6] "Evacuation and Transportation." California Office of Emergency Services. https://www.caloes.ca.gov/cal-oes-divisions/access-functional-needs/evacuation-transportation

Warning System Technologies

The Op Area maintains and utilizes multiple alert and warning technology systems. Each provides different capabilities and limitations. See also Table 1 (Summary) below.

Wireless Emergency Alert (WEA)

The WEA system can send a brief text message along with a unique tone to all operating WEA-enabled mobile devices in a specified area. However, WEA operates with the following limitations:[7]

- Not all wireless carriers will transmit the WEA signal as participation in WEA is voluntary.[8] Many low-cost carriers have opted out of participation and customers may not be aware of this. As WEA transmits only through smart devices, this disproportionately affects AFN populations, such as the elderly who are less likely to use smartphones and low-income people who are more likely to use discount carriers and devices.

- Not all wireless carriers distribute WEA messages the same way. Field testing and observation reveals that some carriers will not transmit messages unless their towers are within the designated alerting area.

- Wireless towers are vulnerable to disasters and power shutoffs and may not work.

- Device users may have disabled their alert capabilities, turned off audible notifications or may ignore incoming messages.

- Depending on the wireless carrier and/or the individual smart device, WEA may not be capable of sending full length messages or in Spanish.

SoCoAlert

SoCoAlert is a geographically targetable alerting system that uses contact databases to send automated messages to phone, text, email, and TDD systems. The County uses purchased or donated contact databases which are be augmented by user subscription. Limitations include:

- Databases must be updated periodically. A best practice assumption is that each month 1% of the database will become 'stale' as the population moves.

- Although cell capable, the bulk of contacts will be using land-line. Land-line is now very prone to disruption during power outages due to the use of electrically powered phones and the use of voice-over internet protocol (VoIP).

- The spread of telemarketers has caused many residents to not answer unless they recognize the number - meaning an inordinate number of the public will not pick up their phone and emergency messages will go to voicemail.

---

[7] U.S. Dept. of Homeland Security, FEMA. "Wireless Emergency Alert System." https://www.fema.gov/emergency-managers/practitioners/integrated-public-alert-warning-system/public/wireless-emergency-alerts
[8] U.S. Federal Communications Commission. "Wireless Emergency Alerts." https://www.fcc.gov/sites/default/files/wireless_emergency_alerts_wea.pdf

National Oceanic and Atmospheric Administration (NOAA) Weather Radio (NWR)

Frequently used by the National Weather Service (NWS) and broadcast over most of the Op Area, a NWR alert is capable of sending an alarm and very limited information to radios tuned to the NOAA radio frequency at 162.475. System limitations include:[9]
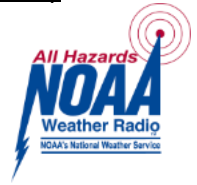
- Requires having a working NWR device and set to the correct channel.
- Single point of failure with only one radio transmitter servicing most of the Op Area and currently without redundant capability.
- Many areas throughout the Op Area are situated in radio "shadows", unable to receive alerts.
- Radio back-up battery systems have short duration in the event of a power failure.
- Op Area does not have independent alerting authority and activation requests may be denied by the NWS.

Emergency Alert System (EAS)

EAS is a national public warning system that requires broadcasters, cable television systems, and wireless cable systems to provide the communications capability that state and local authorities may use to deliver important emergency information to the public. System limitations include:[10]

- Televisions and most radio devices are unable to alert persons who are not watching/listening to local media stations.
- Participation is voluntary, stations may opt to not re-transmit alert messages.
- Power disruption may interfere with transmission and reception.
- Significant portions of the population no longer use traditional radio or cable television in favor of social media and entertainment streaming services and may not receive the alert
- Currently, EAS activation procedures integrate regional media markets and therefore cover most of the San Francisco Bay Area. EAS alerts can be expected to extend well beyond the intended targeted area.

---

[9] National Weather Service, "NOAA Weather Radio." https://www.weather.gov/nwr/
[10] U.S. Dept. of Homeland Security, FEMA. "Emergency Alert System." https://www.fema.gov/emergency-managers/practitioners/integrated-public-alert-warning-system/public/emergency-alert-system

Hi-Lo Sirens

Hi-Lo audible sirens are mounted on select law enforcement and other emergency vehicles. Their unique tone (similar to a European ambulance) is designed to warn local residents to evacuate. System limitations include:

- Little information can be conveyed other than there is some sort of emergency. Residents may experience reluctance to act on a Hi-Lo siren and will seek additional information, possibly clogging the 911 system.
- The effective audible range may be limited by rugged terrain, heavy vegetation, densely built areas, or how much sound can be heard inside a building.
- Law Enforcement and other emergency responder resources will be at a premium during disasters. Each vehicle can cover only limited ground and the ability to accomplish even moderate-level alerting will be challenging.

Nixle®

Nixle is a commercial notification system for sending text messages and emails to those who register to receive messages. Because of its format and large base of subscribers, the system serves as a robust platform for quickly sending longer messages to large numbers of the public. While primarily a public information tool used by public safety and government agencies, Nixle can be used to reinforce and extend emergency warnings. Limitations include:

- Nixle is a passive system. There is no ring tone/alarm associated with it, other than a user's standard text/email alert settings.
- Nixle text messaging relies on wireless broadband systems that may be degraded or inoperative during a disaster.

Table 1 below summarizes the various mass communications mediums that each alert system can utilize:

Table 1: Summary of Alert Systems and Communications Mediums

Communications Medium	Alert System					Nixle
	WEA	EAS	SoCoAlert	NWR	Hi-Lo Sirens	
Cell Phone - Voice			✔			
Cell Phone - Text	✔		✔			✔
Broadcast Television		✔				
Cable Television [1]		✔				
Radio		✔				
Streaming Video/Radio						
Landline/VoIP			✔			
Email			✔			✔
NOAA Weather Radio				✔		
Mobile audible siren					✔	
SoCoEmergency.org [2]	✔		✔			

[1] Local channels only
[2] Messages posted after being sent via warning systems

II. CONCEPT OF OPERATION

Alert and Warning program activities extend across three phases of emergency management - preparedness, response, and recovery. In each phase, there are two critical roles that drive efforts: 1) Alert and Warning Authority and 2) Alert Originator.

Alert and Warning Authority

An Alert Authority is a public official that is granted the authority to alert the public of emergency situations through Federal, State, and local laws.[11] Alert and Warning Authority is vested in any Incident Commander, Emergency Operations Center (EOC) Director, or Public Safety Agency senior officer for alerting within their own jurisdiction. Alerting that will impact jurisdictions outside their own must be coordinated with the respective Alerting Authority as described below.

For alerts and warnings that cross jurisdictional boundaries within the Op Area, Alerting Authority is limited to:

- The Sheriff. Authority may be delegated to the senior officer on duty;

- The County EOC Director; or

- The County Administrator as Director of Emergency Services. Authority may be delegated to the Assistant County Administrator.

For alerts and warnings that extend beyond the Op Area, no County or city agency have Alerting Authority. SoCoAlert, WEA, and NWR may not intentionally launch messages outside the Op Area boundaries. However, as a design component of the system, the Emergency Alert System will broadcast into multiple Operational Areas in the San Francisco Bay region. This does not preclude an Alerting Authority from broadcasting alerts, but Alert Originators must clearly identify in the message their intent to alert only in their Op Area to prevent confusion.

Alert and Warning Originators

Alerting Originators are individuals who have been designated and trained to draft and distribute the alert and warning messages through the approved notification systems.[12] Alert Originators receive the message request from an Alert Authority and use the alert systems to send the message.

If no Alert Authority is available and due diligence has been conducted by the Alert Originator in attempting to communicate with a designated Alert Authority during an incident with potential imminent loss of life, then authority devolves to Alert Originators.

---

[11] State of California, Statewide Alert & Warning Guide, p. 59. http://calalerts.org/guidelines.html
[12] ibid

In the situation where no Alert Authority is available and there is an imminent threat to life, Emergency Coordinators from the Department of Emergency Management will send alerts based on their understanding of the situation in the field assisted if possible by REDCOM and Sheriff Dispatch, or in direct communication with an Incident Command Post. If DEM Alert Originators are unavailable, then REDCOM and Sheriff Dispatchers will send alerts based on their understanding of the situation in the field. If DEM is unable to launch alerts due to lack of internet connectivity, then DEM will request support via mutual aid Alert Originators.

Phase I: Preparedness

Successful alerting requires significant, continuous effort to identify and train key staff on procedures and technical systems. The alerting systems themselves must be regularly maintained and databases updated. Alert and warning efforts will only succeed if residents have been engaged and educated as to how the systems work, how to receive information and what actions should be taken.

During the preparedness phase, those agencies and organizations[13] that have a role in the Alert & Warning program will:

- Identify, train and test Alert Authorities;

- Identify, train and test Alert Originators;

- Conduct periodic maintenance for alerting systems including updating/validating contact databases and address information;

- Conduct periodic tests of alerting systems to ensure functionality as well as operator proficiency; and

- Conduct continual public outreach to educate, encourage enrollment in alerting systems, and encourage personal readiness when receiving alerts

Phase II: Response

When an incident warrants the activation of alert and warning systems, the Alert Authority will direct an Alert Originator to prepare and disseminate alerts and warnings as needed. See also the sections below on *Activation Criteria* and *Message Content*.

As the County uses various alerting systems to access the different communications mediums, Alert Originators will coordinate their messaging as closely as possible to ensure a continuity of information. As the incident matures, messaging should be coordinated closely with the County EOC Public information Officer or Joint Information Center.

Because of known limitations of all systems and the likelihood that incidents will disrupt communications, multiple and redundant alerting systems will be used. For most incidents, WEA, SoCoAlert, EAS, and/or NOAA Weather Radio (NWR) will be used as the

---

[13] For example, public safety agencies, dispatch centers, emergency management offices, community disaster preparedness associations, selected community based organizations, etc.)

primary alerting systems. Nixle, social media and traditional media may be also used to reinforce warnings and provide more detailed information.

Considerations should be given to ensure alerts and warnings are delivered to residents that may not have access to these communications technologies. Depending on the nature and scope of the event, additional warning efforts may need to be undertaken including use of hi-lo sirens, social media, or door-to-door in-person warnings.

Phase III: Recovery

Upon suspension of active alerting, the Alert Originator will:

- Send "all clear" messages, if needed. See Appendix E (All Clear Messaging Policy).

- Immediately preserve message data sent and conduct 'hot wash' reviews with stakeholder agencies to evaluate the effectiveness of the alerting effort.

- The Op Area Coordinators Forum - Alert and Warning Subcommittee may conduct a formal After Action Review to determine effectiveness and identify areas for improvement in future Alerting, and may publish an After Action Report.

Alert and Warning Activation Criteria

Alerts may be issued any time there is an imminent threat to life and property. The types of systems used are influenced by the nature of the specific threat, the size of the area affected, and other factors. This may be a judgement call on the part of the Alerting Authority and if time permits, the Alert Authority should consult with the appropriate agencies and information resources to weigh factors that should be considered before launching an alert. Key criteria to be considered include:

- The potential impacts of the threat;

- Time of day;

- Required actions by the public;

- Time available for the public to react; and

- Environmental considerations that may magnify the effects of the incident (e.g. fuel loads or wind speed for fire, roads network for evacuation, etc.)

The above criteria notwithstanding, the Alerting Authority is to use best judgement and err on the side of caution. Issuing a false alarm with sufficient information to lead a reasonable person to conclude a threat exists is acceptable.

Alert and Warning Message Content

Successful alert and warning messages have specific common components. However, circumstances may not allow for all components to be included. The Alert Originator may not have sufficient incident information or - in the case of WEA, NWR, and TDD - the systems limit the length of messages.

Specific message components include:

- Identify the Alert Authority (e.g. Sonoma County Sheriff, Sonoma Fire District, etc.)
- Description of threat (e.g. wildfire, flood, tsunami, hazardous material)
- Guidance for protective action (evacuation warning or order/shelter-in-place)
- Location of hazard/shelter-in-place or evacuation areas
- Time available to act (IMMEDIATE/NOW or timeframe if available)
- Future information source (always include www.socopsa.org or other link)[14]

Where possible, Alert Originators will use pre-scripted templates and modify as necessary. See Appendix B (Message Templates).

Alert and Warning System – Prioritization of Use

While use of warning systems is often thought of in terms of escalating incident severity (see Figure 1 below), the Sonoma Op Area will prioritize use of warning systems in the following order to maximize the timeliness and scope of warning efforts:

1. Wireless Emergency Alerts (WEA): for use in short-notice incidents with threat to life, health or property. WEA messages should be augmented with SoCoAlert and Nixle messages to provide additional coverage and detailed information.

2. SoCoAlerts: because of the additional time required to prepare a SoCoAlert, these will ordinarily be issued following a WEA to provide additional coverage and detailed information. For incidents that provide a long lead time (e.g. flood or power shutoffs), SoCoAlert should be the primary means of alerting.

3. NOAA Weather Radio (NWR): Alerts should be sent at the same time as a WEA, SoCoAlert and/or EAS message. The NWR should target challenging service areas[15], areas impacted by loss of power, as well as the deaf and hard of hearing community. Note: NWR messages may be vetoed for dissemination by the NWS.

4. Emergency Alert System (EAS): EAS messages go out to a majority of the Bay Area and cannot be limited to the Op Area, EAS should be limited to incidents that pose a threat to life, health or property over a significant area.

---

[14] Based on State and Federal guidance expanded for local needs. See California Statewide Alert & Warning Guide, p. 39. http://calalerts.org/guidelines.html

[15] Challenging areas include those underserved by cellular and/or wireless broadband or where farmworkers and others live in employer-provided housing without access to TV/radio

5. Hi-Lo Sirens: Many Op Area law enforcement and fire agencies have installed Hi-Lo sirens on their vehicles. These sirens produce a unique tone similar to that of ambulances in Europe. The unique tone is used only in case of evacuations. These sirens can be used to augment other warning systems or by themselves in areas where traditional communication systems are unreliable due to their remote nature, or subject to failure of electrical or communications systems.

6. Nixle: primarily a public information tool for public safety agencies and local governments, Nixle can be used to reinforce and extend emergency warnings.

7. Social media (ex. Facebook, Twitter, and Nextdoor): These social media networks should be used aggressively and near-simultaneously if possible with WEA/SoCoAlert/NWR. These networks are "passive" in that they don't activate devices or use an alarm tone - they should be used only after the primary warning systems are activated. Additionally, messaging should be consistent as possible across the platforms.

Figure 1: Common Hierarchy of Use for Alert & Warning Systems – Based on Severity/Extent of the Threat
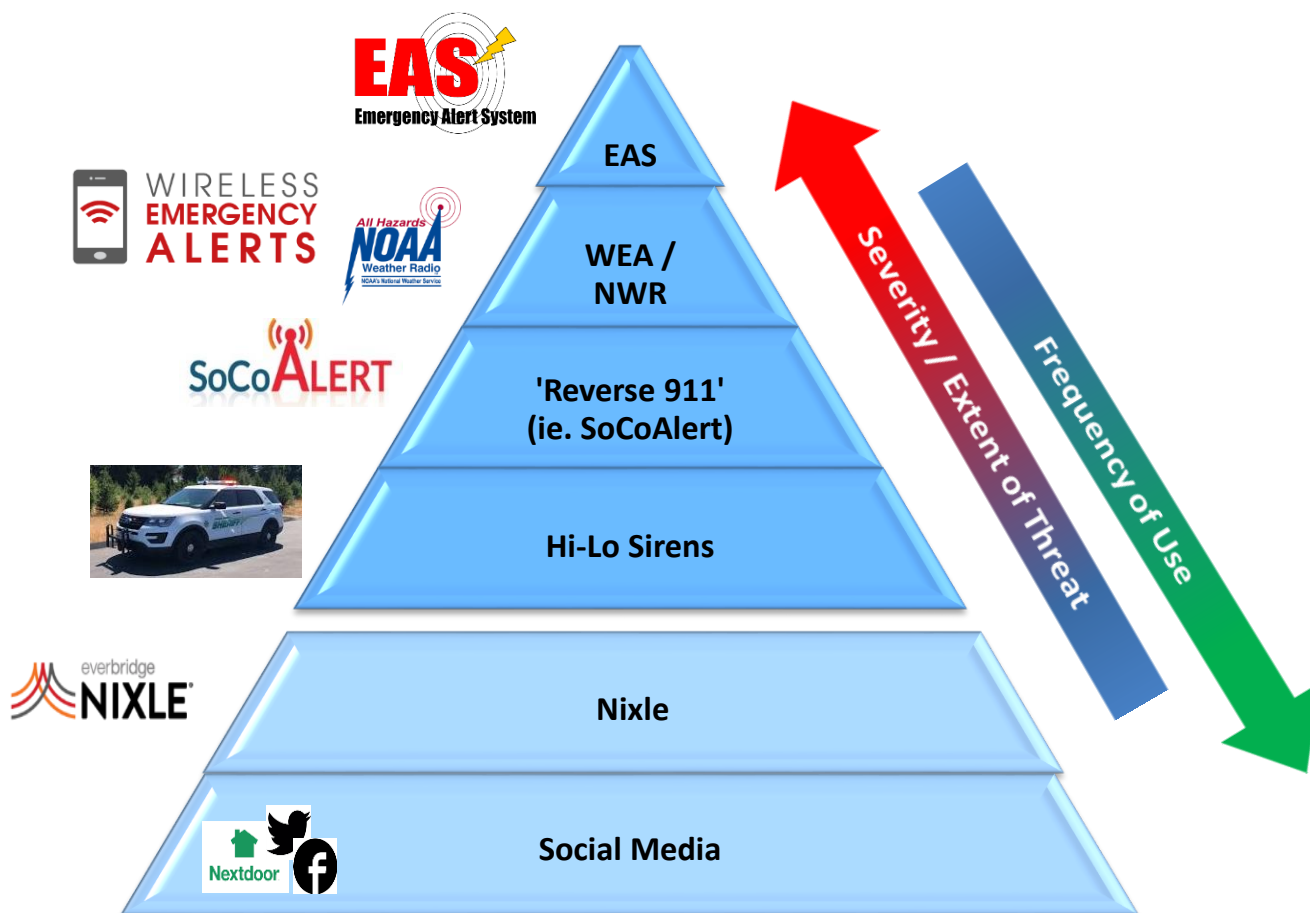
Alert and Warning Tactics

For all alerts, the following tactics are prescribed:

1. Go Big. Except in circumstances where a very narrow and defined alerting area is required, alert areas should cover the entire potential area that may be affected and neighboring communities. Disasters may expand rapidly, however even when they do not, neighboring communities may suffer secondary or tertiary effects of a disaster including supporting evacuation traffic, shelters, or limited transit into the affected area. In Sonoma County, the accepted rule-of-thumb is to make the alert area larger than the area directly impacted or threatened.

2. En Español. Simultaneously provide a fully interpreted Spanish language version of the message.

3. Verify transmission and receipt of alerts. Successful use of many alert and warning platforms may not result in successful public alerting. If the computer systems or transmission systems fail, the Alert Originator may falsely believe they have succeeded in issuing an alert, when in fact the alert has failed to reach the public.

   - Where possible, the Alert Originator should contact known individuals in the alert area to confirm the alert has successfully launched. This could be the Incident Commander or other responders.

   - Review the system launch records to ensure that the FEMA message exchange has successfully received and relayed the message.

   - Do not assume automatic successful dissemination of alerts.

4. Speed is essential in no-notice or fast-moving incidents. An alert that is incomplete or is not fully verified, while not optimal, is better than a completely accurate alert sent after it is no longer relevant.

5. Include Access and Functional Need (AFN) capabilities. Use every available method of alerting to ensure that persons with disabilities or other AFN get alerts with sufficient time to respond. Ensure that the needs of persons living below the poverty line and/or who may be homeless are considered in the type of alert utilized. As technologies become available, proactively incorporate them to aid in alerting and warning. Specific systems to be used include:

   - Use of NWR radios with bed shaker/strobe light attachments for individuals who are deaf or hard-of-hearing.

   - Use of case workers and/or automated polling systems to query persons with disabilities/medically fragile to determine needs for assistance as part of the In-Home Support Services (IHSS) Disaster Response Plan.

   - Evaluate the need and potential to utilize Hi-Lo vehicle sirens and internal stakeholder organizations to warn homeless individuals.

6. Where possible, use the voice message option in SoCoAlert. People respond better to voice messages than they do to text messages during an emergency. However, do not use Text-to-Speech systems.

7. Be aware that all systems may fail or not fully perform. Do not rely on any single system. Alert Originators should not hesitate to use any and all available systems if the situation warrants. For example, in areas with significant numbers of visitors such as the coast, use of the WEA system may be warranted even if the target area is relatively small.

8. Irrelevant warnings can fatigue the public rapidly and lead to recipients discounting further warning messages. Every effort should be made to limit warning delivery to only those actually at immediate risk.

9. People rarely act on a single warning message alone. To be effective, warnings should be delivered in various formats via various media, both to increase reliability of warning delivery and to provide a sense of corroboration that will encourage recipients to take protective actions.

III. ROLES AND RESPONSIBILITIES

Specific roles and responsibilities for alert & warning are assigned to stakeholder organizations as follows:

County Agencies

Sonoma County Sheriff

- Primary Alert Authority for evacuations.

- Alert Originator for SoCoAlert, WEA, and EAS.

- System activator for Sheriff's Office Nixle messages.

Department of Emergency Management (DEM)

- Manage County Alert & Warning Program and maintain warning systems including SoCoAlert, WEA, EAS, and NWR.

- Alert Originator for SoCoAlert, WEA, EAS, and NWR messages.

- Primary responsibility to train and test Alert Authorities and Originators in SoCoAlert, WEA, EAS, and NWR.

- Coordinate Alert and Warning preparedness and response efforts throughout the Op Area.

- Chair of the Alert and Warning Subcommittee.

- Conduct After Action analysis of emergency alerts, as needed.

- Proponent for research and development of alert and warning systems.

- Primary liaison to state and federal agencies for alert and warning coordination.

Sonoma County Op Area Emergency Coordinators Forum - Alert & Warning Subcommittee

- Provide a forum for the discussion and coordination of alert and warning policies and procedures.

- Develop and review procedures for use across the Op Area.

- Conduct After Action Reviews and/or prepare After Action Reports as needed.

Sonoma County Op Area Emergency Operations Center (EOC)

- Upon activation, act as the primary Alert Authority for the Op Area.

- With the PIO, or in conjunction with the JIC, assist in the coordination of Alerts across the Op Area.

<u>Sonoma County Department of Human Services</u>

- Maintain In-Home Supportive Services (IHSS) Program Client List and coordinate secured access to data by alert and warning originators as needed.

- Upon activation of the IHSS Disaster Response Plan, provide supplementary Alert and Warning to at-risk clients.

<u>Incident Commander</u>

- Upon activation, the Incident Commander acts as an Alert Authority for their assigned area of responsibility.

- Provide situational awareness to the Alert Originator.

<u>Sonoma County Information Service Department (ISD)</u>

- Assist Sonoma County DEM with technical support and updating of public facing websites as necessary.

<u>Sonoma County Administrator's Office – Communications Office</u>

- Publish alerts on County of Sonoma social media platforms (Facebook, Twitter and Nextdoor).

- Maintain pulse of the community through rumor monitoring and advise the Incident Commander on warning effectiveness, feedback, and misinformation

- Working with ISD, coordinate consistent messaging on the SoCoEmergency.org and other County websites.

- Coordinate with GIS regarding representation of warning products on public-facing map.

- Through regional Joint Information System (JIS), share alert messaging with partners for release on their jurisdiction's platforms.

Cities

- Maintain primacy of authority and responsibility for alert and warning function.

- Appoint and train Alert Authorities and Originators for their respective jurisdictions.

- If required, request Alert and Warning aid through the DEM and/or Op Area EOC.

- Alerts that require cross-jurisdictional coordination will be originated by County agencies.

- Where applicable, coordinate Alert and Warning with the DEM and/or Op Area EOC for continuity of message.

Other Agencies

Fire Departments/Districts

- If serving as Incident Commander, determine if an alert or warning message is required to protect public safety.

- Provide situational awareness to the Alert Originator.

Police Departments

- Primary Alert Authority for evacuations.

- If serving as Incident Commander, determine if an alert or warning message is required to protect public safety.

- Provide situational awareness to the Alert Originator.

Redwood Empire Dispatch Communications Authority (REDCOM)

- Serve as conduit of information between Incident Commanders and Alert Originators.

- Alternate Alert Originators for SoCoAlert, WEA, and EAS.

National Weather Service (NWS)

- Primary Alert Originators for EAS and NWR systems for weather-related emergency messaging.

- Alert facilitators for NWR systems for non-weather emergency messages (NWEM).

IV. INFORMATION COLLECTION, ANALYSIS, AND DISSEMINATION

Collecting and sharing timely and accurate situational awareness information is the fundamental first step in providing alerts and warnings. Various agencies have a role in developing this information and either directly initiate alerts or ensure the information is shared with Alert Originators.

Table 2: Incident Hazard Information Coordination

Hazard Information	Source	Primary Alert Authority	Primary Alert Originator Responsibility	Notes
Weather *(Including Red Flag)*	National Weather Service (NWS) CA-Nevada River Forecast Center	NWS	NWS	Op Area will not repeat NWS warnings
Public Safety Power Shutoff (PSPS)	PG&E	PG&E	PG&E	Op Area may warn target areas of potential loss of alerting and communications
Tsunami	Tsunami Warning Center	NWS	NWS	Op Area will target alerts for predicted affected area
Flood	National Weather Service CA-Nevada River Forecast Center	Op Area EOC	Dept. of Emergency Management (DEM)	Op Area will target alerts for predicted affected area
General Evacuation	Sheriff Fire Agencies Cities	Sheriff Law Enforcement	DEM	May require coordination with multiple jurisdictions
Wildfire	CalFire Fire Agencies REDCOM	Sheriff Law Enforcement	DEM	May require coordination with multiple jurisdictions
Hazardous Materials	Fire Depts/Districts Permit Sonoma	Sheriff Law Enforcement *(Evacuation)* Fire Agencies *(Shelter In Place)*	DEM	

V.   REFERENCES, AUTHORITIES, AND POLICIES

- Sonoma County Operational Area Emergency Operations Plan, October 2014

- Sonoma County Hazard Mitigation Plan, October 2016, prepared by Sonoma County Permit & Resource Management Department under the direction of Sonoma County Fire & Emergency Services

- State of California, Alert & Warning Guidelines, March 2019
  http://calalerts.org/documents/2019-CA-Alert-Warning-Guidelines.pdf

- State of California, Emergency Alert System (EAS) Plan, October 2017

- California Public Alert and Warning System (CalPAWS) Plan, December 2016
  http://calalerts.org/documents/calpaws/01California-State-Warning-Plan.pdf

- IPAWS Memorandum of Agreement between Sonoma County Department of Emergency management and the Federal Emergency Management Administration dated 9 July 2020

APPENDICES

 A. Communication Systems Hazards

 B. Message Template Matrix *(Published Separately Online)*

 C. Alert and Warning Field Guide *(Published Separately Online)*

 D. Alert Correction Policy and Procedures

 E. All Clear Messages Policy and Procedures

 F. Training and Testing

Appendix A: Communication Systems Hazards

History and Background

The major watershed moment for Alert & Warning in the Sonoma Operational Area came on the night of October 8, 2017 when the Sonoma Complex Fires (Tubbs, Nuns and Pocket Fires) broke out over a wide front in the lightly settled mountain range between Napa and Sonoma counties. Moving with unprecedented speed, the fire reached into densely populated areas with little or no notice causing a massive spontaneous evacuation and 20 residents lost their lives.

In the aftermath of the disaster, there was much criticism of the way alerts and warnings were conducted. One potentially available warning system (WEA) was not used and the perception was that the systems used were less than effective, with significant numbers of residents never receiving any alerts from the County of Sonoma or the City of Santa Rosa.

Many factors contributed to this. The speed of the fire and the lack of real-time intelligence regarding the fire location meant that in some cases, neighborhoods were alerted after the fire had already reached them.[16] In others, the fire damaged or destroyed telecommunications and/or power infrastructure degrading landline communications. Additionally, there was a concern that wide-spread alert and warning might result in public panic and congest evacuation routes.

The events of the Sonoma Complex Fires of 2017 continue to provide strong impetus to improve and expand alert and warning systems. But there are unmistakably clear lessons: in future incidents, alert & warning efforts must be undertaken early in an incident, assume a worst-case potential, and use every available system and method.

In October of 2019, the Kincade Fire broke out during a high wind event. Warning efforts were implemented earlier and over a much wider area using WEA, SoCoAlert and the NWR. Other systems such as Nixle alerts and social media networks augmented the warning, Hi-Lo sirens were used to alert the public and neighborhood groups helped spread the warning quickly. The massive and successful effort to warn and evacuate 190,000 residents demonstrated that these warning systems could be effectively utilized when integrated with the larger response effort.

In 2020, warning systems were again extensively used in the responses to the LNU Lightning Complex (Walbridge and Meyers Fires) and Glass Fires. The City of Santa Rosa also activated EAS for the Glass Fire. In 2020, the Op Area utilized WEA more extensively than any single local or state government in the United States.[17]

---

[16] County of Sonoma. "October 2017 Complex Fires Emergency Operations Center After Action Report", 2018, p. 4. http://sonoma-county.granicus.com/MetaViewer.php?view_id=&event_id=945&meta_id=244351

[17] U.S. Dept. of Homeland Security, FEMA. "IPAWS Seminar - 2020 Recap", February 24, 2021, 13:15. https://femaipawslab.webex.com/recordingservice/sites/femaipawslab/recording/210bbf2970e0436fa 2855095c048b6cf/playback

Communication Systems Hazard Analysis

Communication systems hazards are those technical, environmental, sociological, systemic, and situational factors that may individually or collectively prevent timely warning. Understanding these hazards is imperative to conducting effective alert and warnings.

In general, the following factors will slow or prevent effective alert and warning:

- Insufficient or unclear processes

- Compromised telecommunication systems

- Communications systems limitations

- Insufficient situational awareness

- Insufficient alert originator and alert authority training

- Access and Functional Needs challenges

- Insufficient translation resources

- Audience non-reception (phone spam blockers, turned off phone, etc.)

Notably in each of the wildfire incidents in 2017, 2019, and 2020, many wireless broadband systems and landline cable systems were compromised or did not function in threatened areas.[18] These systems failed due to loss of power from electrical systems, or were subject to Public Safety Power Shutoffs (PSPS) or were physically damaged by fire. In all cases, the ability of local governments to use these systems to send emergency warnings via WEA, SoCoAlert, and EAS were similarly compromised. The resilience of wireless broadband systems is an increasingly fundamental factor in determining the success of warning efforts.[19]

An overview of the key natural hazards that threaten the Op Area is available in the Sonoma *County Hazard Mitigation Plan*.[20] These hazards pose significant challenges for the built environment including communications systems and power. Major events such as earthquake, wildfire, or flooding may disrupt, overload, or destroy the communications infrastructure upon which many alert and warning systems depend.

The above factors and numerous sub-factors create a difficult – if not impossible - environment within which any single system is able to effectively communicate with the entire general public. Thus, it is the position of the Op Area to utilize every available and appropriate method for alerting when the incident requires.

---

[18] North Bay/North Coast Broadband Consortium, Telecommunications Outage Report, April 2018. Accessed at https://ecfsapi.fcc.gov/file/1053130424752/EAS-1.-NBNCBC-Telecommunications-Outage-Report-2017-Firestorm.pdf

[19] https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M344/K021/344021480.PDF

[20] County of Sonoma, Hazard Mitigation Plan, 2016. Accessed at https://sonomacounty.ca.gov/PRMD/Long-Range-Plans/Hazard-Mitigation/Approved-Update/

Appendix B: Message Template Matrix *(Published Separately Online)*

The crafting of an effective warning message requires many elements as outlined in Section II of this Annex (Alert & Warning Message Content). Alert Originators may be significantly challenged to quickly create warning messages in two languages, for 12 different formats, using five different systems, under stressful situations in which they may not have good awareness of the situation and seek to incorporate best practices. To mitigate the potential for errors and to speed their creation, the Op Area uses a message template generator which provides messages in all required formats and in English and Spanish languages.

Publication of this template in a fixed document is impractical as it is frequently updated based on changes in technology, lessons learned and revised guidance. The message template generator may be found in a downloadable Excel spreadsheet format at: https://sonomacounty.ca.gov/DEM/Public-Reports/.

EVACUATION TEMPLATE
Fill in this section below
Use highlight boxes for quick WEA message - Start with B9
Follow tips indicated for the template to work

|				
Up to 4 Zones can be listed - For each zone, fill out all boundary fields if known - Otherwise leave all boundary fields blank	Select Order or Warning from dropdown - leave row blank	Zone # - Use Dropdown or leave row blank	"South of" boundary - type in	"North of" boundary - type in
	Evacuation Order	2W3		
	Evacuation Warning	1B1		
Use Dropdown	Agency/Department issuing alert	Sonoma Co Sheriff		
Use Dropdown	Hazard	Fast-moving Fire		
Choose 1 from dropdown	Which URL to get more info? SoCoPSA.org for SoCoEmergency website or SoNixle.org for Sheriff Nixle page	www.socopsa.org		
Leave blank if doesn't apply	Add "or call 2-1-1" after URL to RSS/App/Email/EAS message? Y or Yes - only if they have been advised of incident	Yes		

Appendix C: Alert and Warning Field Book *(Published Separately Online)*

The successful use of alert and warnings systems is an intricate process that must be accomplished rapidly. To work properly, Alert Authorities must quickly develop situational awareness of the incident, determine actions that the public should take, and transmit that information to Alert Originators. Alert Originators, in turn, need to render the information into the appropriate languages and system formats, transmit the messages and ensure the messages have been delivered.

Each step of this process can result in errors that will be compounded if not detected early and corrected. The use of the technical systems are in some cases complex and the risk of a technical misstep resulting in a failure to alert is both real and common. To mitigate failure, the *Alert and Warning Field Book* acts as a Standing Operating Procedure for actions taken by the Alerting Authority and Alert Originators and detailed instructions for the use of all alerting systems.

Publication of the Field Book as a fixed document is impractical, due to its size and the need to periodically update as systems and procedures change. The most current version may be downloaded at https://sonomacounty.ca.gov/DEM/Public-Reports/

The downloadable version is a REDACTED document with certain elements removed in order to safeguard the security of these systems. Un-redacted versions may be requested by any Alert Authority/Originator by contacting the Department of Emergency Management, Community Alert & Warning Manager.
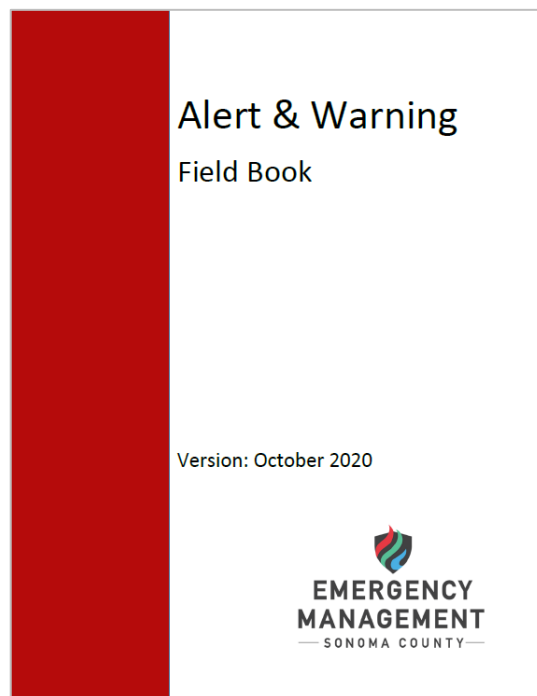
Appendix D: Alert Correction Policy and Procedures

General

Factors such as technological challenges, insufficient incident information, operator fatigue, or procedural failure, can cause an emergency notification message to be sent containing erroneous information or to the wrong audience. In these circumstances, Sonoma County alerting authorities may need to take swift corrective measures if the launched messages have the possibility to cause actions to be taken by the public that may result in a threat to life, property, or environment.

Due to the nature of alerting during a crisis, care must be exercised when issuing correcting corrected messages. Immediate correction, while desirable, could result in further confusion of the public as to which is the correct message should be followed. Also, in the haste to send corrective messages, additional errors can be committed, compounding the original error, causing additional confusion of the public, and creating distrust of Alerts and Warnings at the moment when trust is needed most.

Concept of procedure

1. **Detect.** The Alert Originator has the responsibility to check their alerts to ensure they launched properly and to the targeted audience. Often detection of errors are identified by the Alert Originator in reviewing recently launched alerts. The Alert Originator will also monitor the situation to determine if situational changes have made alerts incorrect or invalid. Once an error is detected, the Alert Originator shall communicate the situation with the Alert Authority and, if appropriate, dispatch centers and relevant incident command posts. If the EOC is activated, the Operations and Public Information (PIO) section chiefs should be notified immediately.

2. **Analyze.** The Alert Originator will conduct an analysis of the erroneous message. The analysis should consider:

   - What are the specific false elements of the alert?

   - Will the false elements, as sent, present a threat to life?

   - Will sending a corrected message create confusion and add, rather than reduce, the threat of public danger?

   - What specific information needs to be sent to the public to correct the errors?

   - What is the best method of disseminating the corrected information?

   If appropriate and when possible, this analysis should be conducted with the Alert Authority, affected public safety agencies, city jurisdictions, and the PIO. However, timeframe constraints may make it counter-productive to be all-inclusive.

3. **Plan.** After conducting an analysis, the Alert Originator, in conjunction with appropriate agencies and/or personnel, will quickly develop a plan of action on what systems to use, determine the proper message, and assess the timing for delivering the message.

4. **Coordinate.** If time permits before disseminating the message, the Alert Originator should coordinate the corrected message with dispatch centers, the PIO section and 2-1-1. When confronted with conflicting information and instructions, many members of the public will seek confirmation before taking action. Coordinating with the most likely sources of information for the public (i.e. 9-1-1, 2-1-1, social media) will reduce the impact on those sources.

5. **Disseminate.** As soon as the corrective message is crafted, it should be launched as quickly as possible while ensuring accuracy.

    - A corrective message should be launched only if expressly approved by the Alert Authority.

    - Corrective messages must be clearly marked "**CORRECTION**" or some similar prominent indicator at the start of the message to avoid any additional confusion.

Methods for sending correction message

Corrections may be disseminated through social media, mass media, and Nixle for non-life-threatening erroneous messages. Example: providing wrong alert authority in the message (Sheriff Office vs Police Dept.). Example: Incorrect location of a temporary evacuation point.

Note: Corrections may be disseminated via SoCoAlert, WEA, NWR, and EAS only for incorrect information that may result in death or injury to the public. Example: location of hazard.

Authorization for correction

Authorization to send corrections rests with the Alert Authority of the original message. However, if the Alert Authority is not available and the Alert Originator, based on analysis, has reasonable expectations that failing to send a correction will result in loss of life, the Alert Originator is authorized to launch corrections.

Message content

An all-clear message must be to the point. As with all messages, it must be provided in both English and Spanish languages.

Appendix E: All-Clear Messaging Policy and Procedures

General

The initial alerts/warnings issued for an immediate threat may use all available and appropriate methods. However, once the initial alert message is issued, circumstances or incident conditions may change and allow residents to return their property and/or resume normal activities. The focus of this all-clear policy is to support the rapid release of messaging that the threat is gone and an emergency no longer exists. For clarity, this is not for communicating about re-entry after a significant evacuation – this activity requires detailed pre-planning, careful inspection of the affected areas for remnant hazards, and is best disseminated through mass media. This policy differs from the process for correcting alerts and works in conjunction with that policy.

Criteria for All-Clear

1. The original threat or hazard of the alert is neutralized, found to be false or insignificant, or has abated to the point that it no longer threatens to life or property.

2. No secondary, cascading threat or hazard exists nor is anticipated.

3. The Incident Commander and/or Alerting Authority deems the situation safe to issue the all-clear message.

Concept of procedure. Procedures for issuing an all-clear are dependent on the type of protective action given and the systems used for dissemination of the original Alert.

General Guidance. Alert Authorities should consider issuing an all-clear message to reduce anxiety among the population. However, any all-clear message should not increase public anxiety or confusion. The Alert Authority should consider the length of time elapsed between the time of the original alert and when the all-clear message would be given as well as the protective action.

Evacuation Warning and Orders. When Evacuation Warnings are issued, the community is ready or getting ready to evacuate. A portion of the population may have evacuated due to the perceived threats. In the case of Evacuation Orders, the community is in the process of leaving the area or has already evacuated, and will not be able to return or access the threatened area.

The issuance of an all-clear message is appropriate and if authorized by the Alert Authority with the following considerations:

- Nixle, social media, and traditional media are the primary method for declaring an all-clear for an Evacuation Warning and Order.

- For the use of SoCoAlert, the Alert Authority must recognize that the jurisdiction may be billed for using the system and determines that the all-clear message would be appropriately sent via the system.

- In order to minimize disruption and impact of the community, all-clear messages should not be issued between 10:00 pm and 6:00 am - unless issued shortly after the original alert. Example: an evacuation warning is sent at 2130 but the warning is cancelled at 2300. Use of SoCoAlert for the all-clear would be appropriate.

- SoCoAlert may be effective in reaching those who may have evacuated, as most primary contact phone numbers in the system are generally cell phone numbers. In using the SoCoAlert system, residents could be contacted with the all-clear message while being evacuated outside the alerted area.

- WEA will not generally be used for sending all-clear messages, except in cases of shelter-in-place (SIP) where WEA was used to initiate the SIP order. For evacuation orders, it is assumed that the evacuees will be outside the area and not able to be reached by a WEA.

- EAS is seldom used for an all-clear message. As EAS is also tied with the greater Bay Area, use of the system for this purpose is not appropriate, even if the EAS was used during the initial alert. All-clear information should be disseminated via traditional media, such as television and radio, which is the primary method of sending out an EAS message.

- NWR is not an appropriate use for all-clear messages as the tones used are only for actionable alerts.

Shelter in place. The Alerting Authority has a responsibility to issue an all-clear message following a shelter-in-place order because the public may shelter where they have little or no access to multiple forms of media or communication. In this scenario, the Alerting Authority should use the same systems to issue the all-clear as was used for the initial alert message. An issuance of an all-clear message is required with the following considerations:

- Nixle, social media, and traditional media are the primary method for declaring an all-clear for the shelter-in-place.

- SoCoAlert will be used for an all-clear if it was used to issue the original alert message.

- WEA may be used for an all-clear only if it was used to issue the original alert. Use of WEA for an all-clear message when not used for the initial alert may impact those outside the initial alert area and also create greater uncertainty as WEA is most commonly expected to be activated only when there is a significant hazard.

- EAS is generally not used for an all-clear message as it extends to the Greater Bay Area. Use is not appropriate even if EAS was used during the initial alert.

- NWR is not an appropriate use for all-clear messages as the tones used are only for actionable alerts, even if used for the initial alert.

Authorization for All-Clear. The decision to send an all-clear message to the public rests with the Alert Authority of the affected jurisdiction (s). Alert Originators may prompt an Incident Commander / Alert Authority about the benefit or timing of an all-clear message, but may not send a message without the expressed authorization from the Alert Authority.

Message Content

- An all-clear message must be to the point.

- Message must be in both English and Spanish languages.

- Consider the following language:

  Subject: *<INCIDENT> - All clear. Resume normal activities.*

  Body: The <describe threat> is under control and the all-clear notification has been issued by <authority>. Normal activities may be resumed. For more information, call 211 or visit SoCoEmergency.org. Do not call 911 unless it is an emergency.

Appendix F: Training and Testing

General

The Op Area Alert and Warning program requires personnel assigned as Alert Authorities and Alert Originators understand their roles and responsibilities and are able to demonstrate proficiency in their assigned systems. Initial training, refresher training, and periodic testing ensure all systems are functional and personnel are properly prepared to issue alerts or warnings. To accomplish this, all Alert Originators will receive training and periodic testing and Alert Authorities will receive periodic training.

Alert Originator Training

Initial training for Alert Originators is dependent on the systems used. All DEM Emergency Coordinators are trained on SoCoAlert and the Integrated Public Alert & Warning System (IPAWS – which includes WEA/EAS/and NWR) using the alerting systems within 30 days of beginning employment. For DEM employees training includes:

1. Familiarization with Alert & Warning Doctrine to include Alert Authority, alert message development and other best practices

   - Completion of FEMA IS-247 & IS-251 courses (any version)

   - Social science considerations

2. Use of the alerting system to include:

   - Creation and launching of SoCoAlerts

   - Creation and launching of IPAWS alerts through WEA, EAS and NWR

   - Familiarization and manipulation of message templates to send an alert

3. Procedures for inter-agency coordination for Alert & Warning

4. Use of alternative and auxiliary Alert & Warning systems

Training requirements will change and develop as the function, technology, and community needs evolve.[21] Alert originators other than DEM employees will be trained in accordance with their agency requirements.

Alert Authority Training

The DEM will host Alert Authority training to ensure Alert Authorities understand the capabilities and limitations of alert and warning systems and how to properly request alerts. This training will be held in conjunction with the Annual Op Area Wildfire Workshop and other times and locations as requested.

---

[21] State of California, Public Alert and Warning Program Assessment for Sonoma County, 2018.

Testing

In addition to validating the operability of warning systems, Originator and Authority training will be reinforced by periodic testing in accordance with the table below. DEM may coordinate participation in additional regional, state or federal tests and exercises.

Table 3: Warning System Testing Responsibilities and Frequency

Action	Responsible Organization	Testing Frequency					
		Daily	Weekly	Monthly	Quarterly	Semi-Annually	Annually
Alerting System Operational Check	DEM	✓					
DEM Staff Duty Officer Alert & Warning Drill	DEM		✓				
NWS NOAA Weather Radio Test Alert	NWS Monterey		✓				
FEMA IPAWS[22] Lab Monthly Test	DEM			✓			
Dispatcher Quarterly FEMA IPAWS Test	DEM Comm. Centers				✓		
SoCoAlert Review	DEM					✓	
Alert Authority Training and Testing	DEM						✓
Alert and Warning Functional Exercise	DEM						✓

---

[22] Integrated Public Alert & Warning System, FEMA