



# Sonoma County Operational Area Emergency Operations Plan Annex

## Extreme Heat Events

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DEPARTMENT OF EMERGENCY MANAGEMENT



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## I. INTRODUCTION

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### **Purpose**

This Annex outlines procedures that guide a collaborative response by local governments, special districts, and allied agencies in the Sonoma County Operational Area (Op Area) to extreme high temperature or heat events. This is a supporting annex to the Sonoma County Operational Area Emergency Operations Plan (EOP).

The Annex provides direction for Operational Area stakeholder organizations including County departments, cities, special districts, community groups, and others, ensuring interagency coordination in accordance with the County's EOP, California Emergency Services Act, Standardized Emergency Management System (SEMS), and National Incident Management System (NIMS).

This Annex accomplishes the following:

- Serve as a planning document to support further development of associated response plans by County departments and Operational Area agencies;
- Provide an overview of the threat that extreme heat events pose to the Operational Area and describe the potential scope of impacts; and
- Provide the incident management organization with contextual information to guide initial response efforts.

### **Scope**

In keeping with the EOP's "all-hazards" approach for local emergency management, the response policies and protocols for an extreme heat event will align with those established in the EOP.

This Annex does not alter existing County department or other Operational Area jurisdiction emergency response standard operating procedures (SOPs), processes, or resources. Emergency response agencies (such as law enforcement, emergency medical services (EMS) and fire) will adhere to existing department SOPs in accordance with all legal requirements.

This annex identifies groups most likely to experience health impacts from extreme heat, and heat-related health conditions. This annex also defines levels of response utilizing the National Weather Service Heat Risk Forecast Tool<sup>1</sup>.

The scale and scope of the response will depend on the intensity and duration of the heat event, which could be a few days to several weeks. A small extreme heat event may only require activation of a public health and public information response. For complex and/or larger extreme heat emergencies that affect many people, coordination of local, regional, state, and federal agencies may be required.

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<sup>1</sup> [https://www.wrh.noaa.gov/wrh/heatrisk/pdf/HeatRisk\\_More\\_Info\\_Web.pdf](https://www.wrh.noaa.gov/wrh/heatrisk/pdf/HeatRisk_More_Info_Web.pdf)

## Preparing and Responding with the Whole Community Strategy

The County of Sonoma strives to incorporate the Whole Community<sup>2</sup> perspective in its emergency planning. By planning with the Whole Community, the County of Sonoma planning strategy incorporates the complexities in the diversity in Sonoma County.

Sonoma County defines disabilities and those with access and/or functional needs as:

*Populations whose members may have additional needs before, during, and after an incident in functional areas, including but not limited to: maintaining independence and the ability to perform the activities of daily living, communication, transportation, supervision, and medical care. Individuals in need of additional response assistance may include those who have disabilities; who live in institutionalized settings; who are elderly; who are children; who are from diverse cultures; who have limited English proficiency or are non-English speaking; or who are transportation disadvantaged.*

Having recognized the need to be inclusive in its emergency planning, the Op Area formed the Sonoma County Access and Functional Needs (AFN) Committee in 2017 to strengthen partnerships with the disability community and those with access and/or functional needs. This team includes representatives from county agencies, local jurisdictions and nonprofit organizations serving people with disabilities and those with access and/or functional needs in Sonoma County. This committee reviewed this Annex in July and provided valuable input.

Furthermore, the County and Op Area are committed to maximizing compliance with the Americans with Disabilities Act and providing the best service to Sonoma County residents and visitors. As such, the County adheres to the guidelines outlined below:

- County services and facilities are equally accessible and available to all persons.
- All the benefits offered by the County are accessible and available to persons with disabilities and others with access and functional needs.
- The County will accommodate people with disabilities and those with access and/or functional needs in the most integrated setting possible.
- During all phases of disaster response, the County will make reasonable modifications to policies, practices and procedures, if necessary, to ensure programmatic and architectural access to all.
- The County will ensure that its shelters are accessible, both physically and programmatically, to afford people with disabilities and others with access and functional needs the opportunity to remain with family and friends in the most integrated setting possible.

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<sup>2</sup> Whole Community is defined by FEMA as "a means by which residents, emergency management practitioners, organizational and community leaders, and government officials can collectively understand and assess the needs of their respective communities and determine the best ways to organize and strengthen their assets, capacities, and interests." FEMA, A Whole Community Approach to Emergency Management, 2011.

[https://www.fema.gov/media-library-data/20130726-1813-25045-0649/whole\\_community\\_dec2011\\_2.pdf](https://www.fema.gov/media-library-data/20130726-1813-25045-0649/whole_community_dec2011_2.pdf)

## II. SITUATION AND PLANNING ASSUMPTIONS

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Temperatures in Sonoma County (the County) can occasionally rise to the point of presenting a danger to the health of residents, especially throughout the summer and fall months. Because of the health risks associated with high temperatures, these events pose an immediate public health threat to County residents.

Average annual temperatures have increased in Sonoma County by 2.7 degrees since 1900.<sup>3</sup> The frequency, intensity, and duration of extreme heat events in the County are projected to increase due to climate change.<sup>4</sup> In addition, heat waves have become increasingly more humid since the 1980s. The County experienced its largest heat wave since 1948 during the statewide heat wave in July 2006. While typical summer temperatures in California contribute to the death of an average of 20 people per year, the 2006 heat wave caused the death of at least 140 people statewide over a 13-day period.<sup>5</sup> During that time, many counties and cities saw an increase in emergency department visits for heat-related illnesses.<sup>6</sup>

People who are adapted to California's traditionally dry daytime heat and nighttime cooling are less able to recover from extreme heat, especially when humidity levels are high.<sup>7</sup> Increased temperatures also lead to higher concentrations of ground-level ozone. Elevated ozone levels aggravate chronic respiratory illnesses like asthma, and can contribute to the development of bronchitis and pneumonia among affected populations.<sup>8</sup>

The increase in heat-related illnesses during the 2006 heat wave, along with dangerous levels of ground-level ozone, show that extreme heat can pose a public health threat to residents in the County, especially for heat sensitive groups such as children, the elderly, the homeless, and people with respiratory conditions. Geographic differences in climate, environmental, and socioeconomic factors can also shape how extreme heat affects County residents.

Unlike events such as wildfires or earthquakes, extreme heat events usually come with some advanced notice. Heat events are often slower to develop, taking several days of continuous, oppressive heat before a significant or quantifiable impact is seen. Heat

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<sup>3</sup> Climate Ready Sonoma County: Climate Hazards and Vulnerabilities, 2014, [https://rcpa.ca.gov/wp-content/uploads/2016/03/Climate-Ready\\_Hazards\\_Vulnerabilities-FINAL.pdf](https://rcpa.ca.gov/wp-content/uploads/2016/03/Climate-Ready_Hazards_Vulnerabilities-FINAL.pdf)

<sup>4</sup> Climate Ready Sonoma County: Climate Hazards and Vulnerabilities, 2014, [https://rcpa.ca.gov/wp-content/uploads/2016/03/Climate-Ready\\_Hazards\\_Vulnerabilities-FINAL.pdf](https://rcpa.ca.gov/wp-content/uploads/2016/03/Climate-Ready_Hazards_Vulnerabilities-FINAL.pdf)

<sup>5</sup> Kim Knowlton, et al., "The 2006 California Heat Wave: Impacts on Hospitalizations and Emergency Department Visits", 2009, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2627866/>

<sup>6</sup> California Office of Statewide Health Planning and Development

<sup>7</sup> California Environmental Protection Agency, Heat-Related Mortality and Morbidity, 2018, [https://oehha.ca.gov/media/epic/downloads/ibs\\_hrmm2018.pdf](https://oehha.ca.gov/media/epic/downloads/ibs_hrmm2018.pdf)

<sup>8</sup> American Lung Association: State of the Air, Sonoma County, <http://www.stateoftheair.org/2013/states/california/contra-costa-06013.html>

events do not usually affect people immediately, but rather their cumulative effects incrementally impact heat sensitive groups and the general public.

The County utilizes the Heat Risk Forecast Tool designed by the National Weather Service (NWS) to identify levels of heat concern, and recommended communication and protective actions during different levels of extreme heat.<sup>9</sup>

### **Planning Assumptions**

- Weather indicators such as Heat Advisories/Warnings will provide enough lead time to coordinate Operational Area partners and develop Public Information and response efforts.
- Access and Functional Needs (AFN)<sup>10</sup> populations may be disproportionately impacted by heat events.
- Some Skilled Nursing Facilities (SNFs) and other residential or congregate care facilities may be affected.
- Social or healthcare support workers who have provided care to vulnerable and medically fragile residents should be able to continue to provide care to their clients.
- As per the EOP, response efforts will utilize County department response protocols and the Incident Command System (ICS). This may include establishing a unified command among law enforcement, fire, EMS, state, and federal response agencies. The County's Emergency Operations Center (EOC) may be activated to coordinate incident support.
- Additional fire/EMS and law enforcement resources may be needed to respond to increased call for service, maintain public order, and/or provide security.
- The demand for emergency public information will be immediate and sustained. Social and traditional media coverage will be extensive.
- Each jurisdiction may have their own Extreme Heat plan or procedure. Every jurisdiction is responsible for their own coordinated response to an extreme heat event in their jurisdiction.
- Extreme heat events may occur concurrently with PG&E Public Safety Power Shutoffs (PSPS), rotating outages, significant wildfires, and/or periods of degraded air quality (ex. wildfire smoke).

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<sup>9</sup> <https://www.wrh.noaa.gov/wrh/heatrisk/?wfo=mtr>

<sup>10</sup> California Statue § 8593.3 defines AFN as “the ‘access and functional needs population’ consists of individuals who have developmental or intellectual disabilities, physical disabilities, chronic conditions, injuries, limited English proficiency or who are non-English speaking, older adults, children, people living in institutionalized settings, or those who are low income, homeless, or transportation disadvantaged, including, but not limited to, those who are dependent on public transit or those who are pregnant.”

### III. HEALTH EFFECTS

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While anyone is at risk of developing heat-related illness, certain populations including infants, elderly, medically vulnerable, and people experiencing homelessness, are at greater risk for experiencing heat-related adverse health outcomes. This Annex was developed using historical data, best practices and with the intention of providing support to as many community members as possible. However, illness could occur at temperatures other than those indicated in this plan based on multiple factors including age, health and lifestyle choices or circumstances. Individuals possessing any combination of the following characteristics or conditions are at greater risk for experiencing an extreme temperature-attributable adverse health outcome:

- Age and underlying conditions: Age and underlying conditions: This at-risk group includes infants and older people (age 65 and older) who may be more susceptible to the effects of extreme in temperature due to their physiology and state of health and/or may be unable to express signs or recognizable symptoms of excess temperature exposure. It also includes people with underlying medical conditions (e.g., heart disease, diabetes, asthma) that may be exacerbated during extreme in temperature.
- Mobility constraints: People with mobility constraints are at higher risk during extreme temperature emergencies if the constraints limit their ability to access appropriately cooled/heated locations. This group includes the very young, the elderly, the very obese, the bedridden, and those with other access and functional needs that may affect mobility.
- Cognitive impairments: People with mental illnesses, with cognitive disorders, or under the influence of drugs or alcohol may be unable to make rational decisions that would help limit their exposure to extreme heat or cold or to recognize symptoms of extreme heat or cold exposure.
- Economic constraints: The poor may be disproportionately at risk during extreme temperature emergencies if their homes lack air conditioning or heating, or if they are less likely to use available utilities because of the cost. In addition, for individuals who reside in high-crime areas, fear of crime can increase their risks by hindering their willingness to take appropriate responses [e.g., opening doors and windows for circulation, visiting cooling/warming centers]. People without permanent housing may be at very high risk for an adverse health outcome because of their unprotected exposure to the extremes of temperature and lack of resources to limit the exposure or to seek medical care if needed.
- Social isolation: Socially isolated individuals are less likely to recognize symptoms of extreme heat or cold exposure. This can delay or prevent treatment and result in more serious health outcomes. Members of this group, which includes the homeless and those living alone, may also be less willing or able to reach out to others for help.

In addition, residents of the County who live in the areas with historically moderate temperature variations and milder climate, such as those residents living in South County, may be less adapted to extreme heat, and often have limited access to air-conditioned spaces during extreme heat events.

### **Heat-Related Health Conditions**

[Appendix 5](#) Heat Related Health Conditions<sup>11</sup> summarizes the typical progression of medical conditions and associated symptoms, over the course of sustained exposure to extreme heat. These symptoms can progress rapidly, especially in persons who are sensitive to extreme heat. Heat stroke, at the upper end of the progression, constitutes a medical emergency and can be life threatening.

## **IV. CONCEPT OF OPERATIONS**

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The Sonoma Operational Area uses a three-phase approach to extreme heat events consistent with the State of California's contingency plans for extreme cold and extreme heat emergencies. These three phases are:

- Phase I: Seasonal Readiness
- Phase II: Warning and Preparation
- Phase III: Emergency Response

When an extreme heat event is projected, an extreme heat event coordination meeting will occur by Sonoma County Department of Health Services (DHS), and Emergency Management (DEM). Monitoring of potential extreme temperature events is the joint responsibility of DEM and DHS.

When response demand exceeds the capabilities of County departments or cities, County Department Operations Centers and the Operational Area Emergency Operations Center (EOC) may be activated.

Beginning with Phase I, DEM and DHS will monitor a series of extreme temperature indicators. These indicators include:

- National Weather Service (NWS) warnings and advisories
- Heat/cold related illnesses/deaths above average
- Severe temperatures accompanied by power outages/rolling black outs
- Two or more jurisdictions declare heat-related emergencies
- State declares a severe heat-related emergency

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<sup>11</sup> <https://www.cdc.gov/niosh/topics/heatstress/heatrelillness.htmlpdf/2015-climate-change.pdf>



While National Weather Service (NWS) forecasts are an important indicator, the NWS is not the sole determinant of an extreme temperature event. The County Public Health Officer in consultation with the Director of Emergency Management (and possibly other County staff and local government agencies) will determine whether circumstances constitute a potential or actual extreme temperature emergency.

When there is a potential for an extreme temperature event, DEM and DHS may convene an extreme heat event hazard assessment meeting to develop possible strategies appropriate to the nature of the potential event. In doing so, they may consider the strategies suggested in this annex or propose new ones.

### **Phase I: Seasonal Readiness**

Initiated at the start of wildfire season, this phase includes all the activities that will assist the Sonoma Op Area and its residents in mitigating or preparing for extreme heat events. Efforts are primarily focused on raising public awareness of the risks of an extreme temperature event in the upcoming season and in preparing County and Operational Area agencies to recognize and respond to such an event.

#### Conditions for Activation

Phase I is routinely activated at the beginning of the summer to help prevent heat through awareness and preparation.

#### Response Activities Options

- Convene extreme heat event meeting to review and update plans
- Identify and maintain list of potential cooling centers
- Implement a coordinated public education program for extreme heat
- Provide outreach to parks and recreation, coaches and outdoor activity venues, senior and day care centers and organizations serving individuals with AFN
- Review this annex, supporting plans and conduct exercises

#### Public Messages

The public messages for Phase I are primarily public service announcements issued by departments and agencies to raise awareness of the potential risks associated with the season. Messages are general in nature and focused on preventing the effects of extreme heat by providing safety awareness and health tips. See [Appendix 3](#) for examples of these public service announcements.

### **Phase II: Warning and Preparation**

Phase II is initiated when an extreme temperature emergency is expected within the next three days, based on an NWS Extreme Heat Forecast and/or other indicators. This phase is characterized by public warnings and response preparations by departments and agencies.

### Conditions for Activation

Based on an assessment of extreme temperature indicators, DHS and DEM determines that an extreme heat emergency is likely to occur within three days. Indicators may include the following:

- NWS Heat Risk Forecast Level 3 or 4
- NWS Extreme Heat Watch/Warning
- Predicted high daytime temperatures accompanied with night low temperatures of 75°F or more.
- California Independent System Operator (CALISO) Stage 2 Electrical Emergency
- Forecasts of significant PSPS events

### Initial Operational Area Notification

If the threat of an extreme heat event is potentially significant, and upon receipt of information from NWS, DEM will notify local governments, County departments, and public safety agencies utilizing DEM Staff Duty Officer (SDO) notification procedures.

### Operational Area Emergency Conference Calls

In the case of a potential widespread heat event, County DEM staff will convene an Operational Area Emergency Conference Call and establish a schedule for follow-up calls. DEM staff will invite potential participants and lead the call to cross-level situational awareness; address resource needs, integrate response activities, and coordinate public information efforts.

Emergency Conference Call Agenda for Extreme Heat:

- Roll Call and Rules
- National Weather Service (NWS) or forecast
  - Conditions summary
  - Timing and location of greatest impacts
  - Estimated time for CAISO emergency actions
- Health Assessment of Potential Impacts
- Concurrent Hazards (Red Flag, PG&E Power Shutoffs)
- Potential Response Strategies
  - Cooling centers
  - Public safety operations adjustments
- Jurisdiction/agency status
  - Preparedness/response activities

- EOC activations
- Cooling centers
- Communications systems status/issues
- Public information efforts/messages
  - PIO (name and contact information)
- Time/date of next emergency conference call

### Proclamation of Local Emergency

Depending on the potential scope and duration of the heat event, the Public Health Officer may proclaim a local Health Emergency. DEM staff may also recommend that the County proclaim a local emergency. Cities and special districts may also consider proclamations as warranted.

### Public Messages

Public messages in Phase II are directed at warning the public of the imminent hazard and providing specific information on how to reduce their risk of injury. Messages provide information on both prevention and immediate treatment of potential injuries. Messages may also include information on specific actions being taken by the County and allied stakeholder agencies to prepare for a response.

### Initial Response Actions

Depending on the potential scope and duration of the heat event, local governments and public safety agencies may begin to implement response efforts. Potential actions include:

- Convene extreme heat event meeting to assess the threat and develop response strategies/action plans for the potential emergency
- Activate Emergency Operations Centers (EOCs) and/or Department Operations Centers (DOCs)
- Assess and consider implementing public health measures including closing at-risk facilities and/or curtailing outdoor activities
- Increase staffing, cancellation of leave, adoption of maximum staffing schedules
- Deploy and/or increase testing of critical equipment (ex. generators)
- Implement of Continuity of Operations Plans (COOPs)
- Maximize readiness of vehicle fleets including fueling
- Prepare facilities
- Protect or shutdown of sensitive electronic equipment

- Identify potential cooling centers and place on standby or activate as appropriate.
- Curtail or halting of non-critical functions
- Identify and notify at-risk populations; prepare to provide assistance as needed
- Increase public information efforts including evaluation of the need for a Joint Information Center (JIC) and/or a public information hotline
- Increase outreach and information flow to vulnerable populations
- Consider sending a representative to PG&E WSOC or requesting a PG&E Agency Representative for the Op Area EOC
- Implement recall of staff as needed

### Status Reporting

As the event develops, Sonoma County DEM staff will monitor and report the status of the Op Area to CalOES and Op Area stakeholders. As time permits, DEM shall contact jurisdictions/county agencies to check their status and/or continue to convene Op Area Conference Calls. Each agency/organization will be asked to provide the following information:

- Current situation (increased public safety stature, response activities, etc.)
- EOC/DOC/ICP activations
- Increased readiness activities (upstaffing, pre-deployment/staging of resources)
- Sheltering, support and public warning operations
- Impacts to transportation, communications, utilities and other critical infrastructure
- Critical issues
- PIO (name and contact information)
- Forecast of major actions and potential needs

Sonoma County Emergency Management will represent the Operational Area in regional NWS and Cal OES conference calls.

### **Phase III: Emergency Response**

Phase III is initiated when an extreme heat event is occurring.

### Conditions for Activation

Based on an assessment of extreme heat indicators, DHS/DEM determine that an extreme heat event emergency is occurring. Indicators may include the following:

- NWS Heat Risk Forecast Level 3 or 4

- NWS Extreme Heat Warning
- CAISO is issuing a Stage 2 or 3 Electrical Emergency or implementing rotating outages concurrent to the Extreme Heat Event
- Increased EMS calls for service and/or emergency room visits

### Response Actions

In addition to fully implementing those actions identified in Phase II, the following efforts may also be employed:

- Convene/continue extreme heat event meeting to coordinate inter-agency activities, integrate into EOC if activated
- Activate a Joint Information Center
- Monitor indicators, particularly heat-related injuries and deaths
- Expand locations and operating hours of cooling centers

### Public Messages

Public messages during Phase III are oriented towards providing information related to the response. Messages are specific and tell the public how and where they can access government services (e.g. location of cooling centers, when to use 911 and hospital emergency departments, etc.). Messages should also include information from Phase II relating to mitigating the effects of the emergency.

## **V. ROLES AND RESPONSIBILITIES**

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### **County Department of Health Services (DHS)**

- As needed:
  - Alert and coordinate efforts of Health Care Coalition (HCC) partner agencies. Conduct conference calls and distribute information.
  - Activate the Medical/Health Operational Area Coordinator (MHOAC) program.
  - Assess potential impacts to medical/health care provider organizations, facilities, and systems.
  - Survey and assess potential impacts to local healthcare and medical systems, residential care facilities and pharmacies. Assist in ensuring emergency power systems are operational.
- Assess the need for and make recommendations regarding a Proclamation of Local Health Emergency.

- Develop and integrate public health messaging; disseminate Public Information messaging.
- Participate in Operational Area conference calls.
- Activate EOC/DOC staff, if needed.
- Support development of cooling centers.
- Provide support for care of pets at cooling centers.

### **Sonoma County Department of Emergency Management (DEM)**

- Receive and distribute NWS forecasts and weather products.
- Assess potential impacts of forecasted events and/or concurrent hazards.
- Notify potentially impacted jurisdictions. Distribute Staff Duty Officer situation updates and conduct Operational Area conference calls with partner agencies.
- Assess the need for and make recommendations regarding a Proclamation of Local Emergency.
- Assess potential public safety impacts and recommend appropriate Operational Area EOC staffing levels.
- Support Public Information coordination.
- As needed:
  - Activate EOC as directed.
  - Conduct public alert & warning messaging.
  - Activate Auxiliary Communications System (ACS) staff to support intelligence gathering, 9-1-1 reporting, and emergency communications.

### **Sonoma County/Operational Area Public Information Officer (PIO)**

- Coordinate public information with impacted local jurisdictions.
- Evaluate the need for a JIC or JIS.
- Post updates to County SoCoEmergency website.
- Coordinate situational updates to elected officials.
- Coordinate with 2-1-1.
- Ensure all efforts support communications with the Whole Community .

### **Cities, Tribal Governments, and Special Districts**

- As needed:

- Participate in Operational Area conference calls.
- Open cooling and/or resource centers.
- Coordinate public information.
- Conduct public alert & warning messaging.
- Open local EOC.
- Respond to increased medical aid and law enforcement calls for service.
- Conduct wellness checks.

### **Sheriff / Municipal Law Enforcement**

- As needed:
  - Activate Nixle to support heat events notifications and/or alerts and warnings.
  - Participate in Operational Area conference calls.
  - Staff Law Enforcement Branch in Operational Area EOC.

### **Fire / EMS**

- As needed:
  - Participate in Operational Area conference calls.
  - Staff Fire Mutual Aid Coordinator in Operational Area EOC.
  - Assess potential impacts to fire detection/reporting and response capabilities.
  - Respond to increased calls for medical aid.
  - Assist in welfare checks.

### **County Human Services Department**

- As needed:
  - Participate in Operational Area conference calls. Staff the Care & Shelter Branch in Operational Area EOC.
  - Designate and alert shelter support staff. Support shelters if needed. Access Functional Assessment Service Teams (FAST).
  - Implement the In-Home Supportive Services (IHSS) Disaster Preparedness Action Plan and prioritize outreach based on IHSS Disaster Preparedness Coding. Provide current disaster preparedness client list to DEM/GIS.

### **County General Services Department**

- Prepare facilities and building systems for extreme heat and potential power loss.
- Support acquisition of facilities to support cooling centers,
- As needed:
  - Manage and maintain building emergency power systems including UPS, generators, and fuel re-supply.
  - Evaluate building safety upon loss of power.
  - Provide alternate facilities in support of continuity of operations efforts.

### **Schools**

- As needed:
  - Participate in Operational Area conference calls.
  - Assess potential impacts to school facilities and systems.
  - Communicate status of school closures or restricted operations.
  - Communicate status with parents and partner agencies.

### **Community Organizations Active in Disaster (COAD)**

- As needed:
  - Participate in Operational Area conference calls. Staff the COAD Liaison in Operational Area EOC.
  - Survey member agencies as to status and issues.
  - Be prepared to outreach to members/clients, check on their status, and provide expanded or enhanced services.

### **Pacific Gas & Electric (PG&E)**

- Participate in Operational Area conference calls. Provide system status updates and forecasts.
- Coordinate with the Operational Area regarding potential/forecast PSPS events or CAISO emergency actions.
- Provide a representative to the Operational Area EOC upon request.



## REFERENCES

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- Sonoma County Operational Area Emergency Operations Plan, March 2014.
- Sonoma County In-Home Supportive Services (IHSS) Disaster Preparedness Action Plan, July 2019.
- Sonoma County Cooling Center Operations Guide, 2021.
- U.S. Environmental Protection Agency, Excessive Heat Events Handbook, March 2016.<sup>12</sup>

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<sup>12</sup> [https://www.epa.gov/sites/default/files/2016-03/documents/ehguide\\_final.pdf](https://www.epa.gov/sites/default/files/2016-03/documents/ehguide_final.pdf)

## APPENDIX 1: NATIONAL WEATHER SERVICE HEAT RISK FORECAST TOOL

According to historical weather and mortality data gathered by the National Weather Service (NWS) and the California Department of Public Health, there appears to be a significant increase in health risk (particularly to heat sensitive groups) when temperatures spike for two or more consecutive days without an adequate drop in nighttime temperature to cool the outdoor and indoor environments.

Forecasting the development and characteristics of an extreme heat event is a critical element of risk assessment, notification and response. To better address heat risk and afford local authorities opportunities to prepare for upcoming heat events, the NWS has developed the Heat Risk Forecast Tool<sup>13</sup>, which measures the deviation of forecasted daily temperature values from historic climatological norms. The Tool addresses seasonal variations as it captures resiliency of communities to heat based on how well they adapt to the heat of the season.

The Heat Risk Tool provides a forecast comprised of a color and numeric value that identifies heat potential for specific geographic areas as well as levels of heat concern and recommended protective action messages. A daily heat risk value is calculated for each geographic area from with current data with predictions for seven days into the future. At this time, the Heat Risk Forecast Tool is being used to influence the issuance of, and add value to, the NWS' official heat advisories and warnings.

Heat risk is portrayed using a numeric format (0-4) and color (green/yellow/orange/red/magenta) scale. It provides one value each day that indicates the approximate level of heat risk concern for any geographic area along with identified groups most at risk. The heat risk forecast is divided into five categories; the higher the value, the greater the level of heat concern is for a geographic location. See Tables 2 and 3 below.

Table 2: Heat Risk Values, Associated Risks, and Levels of Concern

	0	1	2	3	4
<b>HEAT RISK VALUES</b> When the Heat Risk value is:					
<b>RISK OF HEAT EFFECTS</b> ...the risk of heat effects are:	Very Low	Low	Medium	High	Very High
<b>LEVEL OF HEAT CONCERN</b> ...as symbolized by this color:	Green	Yellow	Orange	Red	Magenta

<sup>13</sup> <https://www.wrh.noaa.gov/wrh/heatrisk/?wfo=mtr#>

Table 3: NWS Heat Risk Levels and Concerns

Numerical Value	Meaning	Who/What is at Risk?	For those at risk, what actions can be taken?
0	<ul style="list-style-type: none"> <li>Level of heat poses <b>little to no risk</b></li> </ul>	<ul style="list-style-type: none"> <li>No elevated risk</li> </ul>	<ul style="list-style-type: none"> <li>No preventative actions necessary</li> </ul>
1	<ul style="list-style-type: none"> <li>Heat of this type is <b>tolerated by most</b>; however there is a <b>low risk for sensitive groups</b> to experience health effects</li> </ul>	<ul style="list-style-type: none"> <li>Primarily those who are extremely sensitive to heat</li> </ul>	<ul style="list-style-type: none"> <li>Increase hydration</li> <li>Reduce time spent outdoors or stay in the shade when the sun is strongest</li> <li>Open windows at night and use fans to bring cooler air inside buildings</li> </ul>
2	<ul style="list-style-type: none"> <li><b>Moderate risk for members of heat sensitive groups</b> for health effects</li> <li><b>Some risk for the general population who are exposed to the sun and are active</b></li> <li>For those without air conditioning, <b>living spaces can become uncomfortable during the day</b>, but should cool below danger at night</li> </ul>	<ul style="list-style-type: none"> <li>Primarily heat sensitive groups, especially those without effective cooling or hydration</li> <li>Some transportation and utilities sectors</li> </ul>	<ul style="list-style-type: none"> <li>Reduce time in the sun between 10 a.m. and 4 p.m.</li> <li>Stay hydrated</li> <li>Stay in a cool place during heat of day</li> <li>Move outdoor activities to cooler times of the day</li> <li>Open windows at night</li> </ul>
3	<ul style="list-style-type: none"> <li><b>High Risk for much of the population who are 1) exposed to the sun and active or 2) are in a heat sensitive group</b></li> <li><b>Dangerous to anyone without proper hydration or adequate cooling</b></li> <li><b>Poor air quality</b> is possible</li> <li><b>Power interruptions may occur</b> as electrical demands increase</li> </ul>	<ul style="list-style-type: none"> <li>Much of the population, especially people who are heat sensitive and those without effective cooling or hydration</li> <li>Transportation and utilities sectors</li> </ul>	<ul style="list-style-type: none"> <li>Try to avoid being outdoors in the sun 10 a.m. - 4 p.m.</li> <li>Stay hydrated</li> <li>Stay in a cool place especially during the heat of the day</li> <li>If you have access to air conditioning, use it. Fans may not be adequate</li> </ul>
4	<ul style="list-style-type: none"> <li><b>Very High Risk for entire population</b></li> <li><b>Very dangerous to anyone without proper hydration or adequate cooling.</b></li> <li><b>This is a multi-day extreme heat event.</b> A prolonged period of heat is dangerous for everyone not prepared.</li> <li><b>Poor air quality</b> is likely.</li> <li><b>Power outages are increasingly likely</b> as electrical demands may reach critical levels.</li> </ul>	<ul style="list-style-type: none"> <li>Entire population is at risk.</li> <li>For heat sensitive groups, especially people without effective cooling, this level of heat can be deadly.</li> <li>Most Transportation and utilities sectors</li> </ul>	<ul style="list-style-type: none"> <li>Avoid being outdoors in the sun between 10 a.m. and 4 p.m.</li> <li>Stay hydrated</li> <li>Stay in a cool place, including overnight</li> <li>If you have access to air conditioning, use it. Fans will not be adequate</li> <li>Cancel outdoor activities during the heat of the day</li> </ul>

## APPENDIX 2: COOLING CENTER GUIDELINES

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There are no established criteria for cooling centers. Facilities used as cooling centers are not exempt from rotating outages or power shutoff events.

Listed below are recommendations for consideration when selecting facilities to serve as cooling centers:

### **Recommended:**

- Air conditioning or equivalent (temperature maintained at 79°F)
- Accessible to people with disabilities / ADA compliant
- Ample seating appropriate to the jurisdiction
- Public restrooms accessible to people with disabilities and those with access and/or functional needs
- Access to potable water (drinking fountain, etc.)
- Publicly advertised
- Parking access
- Proximity to public transit

### **Suggested:**

- Backup generators or alternative power sources
- On-site security
- Communications: phone (including TDD/TTY/video capabilities), internet access, sign-language interpreters
- Child-friendly with materials for children to play with while at the cooling center
- Medical personnel such as nurses and/or aides
- Seven-day-a-week operation
- Personal assistance services for people with disabilities and those with access and/or functional needs
- Available televisions, books, games
- Transportation for those lacking their own, including wheelchair-accessible services
- Follow-up procedures for those in need of additional services (health care, social services, etc.)
- Area for pets
- Veterinary resources available if needed

See also the **Sonoma Operational Area Cooling Center Operations Guide, 2021**.

## APPENDIX 3: SAMPLE PUBLIC INFORMATION MESSAGES

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### MEDIA RELEASE

**FOR IMMEDIATE RELEASE**

Date: June 15, 2021

### **County of Sonoma Health Officials issue Heat Alert**

SANTA ROSA, CA – The County of Sonoma Department of Health Services has issued a Heat Alert in response to the National Weather Service’s prediction of consecutive days of 90 to 100-plus degree temperatures on Wednesday, June 16 through Friday, June 18. These weather conditions can cause heat stroke and worsen chronic medical conditions, leading to severe complications and death. Sonoma County Deputy Health Officer Dr. Kismet Baldwin urges residents to take simple steps to stay cool and help prevent heat-related illnesses.

"Extreme heat can pose dangers, but there are many things we can do to reduce heat-related problems," said Dr. Baldwin. "While summertime heat can be dangerous for anyone, including young, healthy people, those most at risk include older adults, young children and those with chronic medical conditions such as heart, breathing or lung conditions."

To protect yourself and your family when the weather is very hot, follow the tips below:

- Never leave anyone including children and pets in a parked car, even briefly. Temperatures in the car can become dangerous within a few minutes.
- Use air-conditioning to cool down or go to an air-conditioned building such as a mall or movie theater. Check indoor mask requirements for the public space you will be visiting.
- Drink plenty of fluids. Do not wait until you are thirsty to drink more fluids. Avoid alcohol, caffeine and sugary drinks. If your doctor generally limits the amount of fluid you drink or has you on water pills, ask how much you should drink while the weather is hot.
- Beat the heat with cool showers and baths.
- Stay out of the sun as much as possible. When possible, avoid strenuous activity during the hottest part of the day (between 11 a.m. and 4 p.m.) and take regular breaks from physical activity.
- Wear loose, lightweight, light-colored clothing to help keep cool.
- Wear sunscreen and a ventilated hat (e.g., straw or mesh) when in the sun and even if it is cloudy.
- Be aware that some medicines affect the body's ability to sweat and stay cool, including antihistamines, antidepressants, over-the-counter sleeping pills, anti-diarrhea pills, beta-

blockers, anti-Parkinson's drugs and psychiatric drugs. Do NOT stop taking medication unless instructed to do so by your doctor.

- Check on your neighbors such as the elderly or those in poor health to see if they need assistance.

“As always, during emergency times we must continue to look out for one another,” said Lynda Hopkins, Chair of the Sonoma County Board of Supervisors. “Keep in close contact with family, friends and neighbors who are medically fragile or work outdoors. It’s important to remind one another to seek shade, drink water and get medical assistance if signs of heat fatigue become prevalent.” For those experiencing homelessness, the Coordinated Entry System is available to offer shelter, services and housing. The program prioritizes those who are most in need of assistance and provides crucial information that helps communities strategically allocate resources and identify gaps in service. Sonoma County’s Coordinated Entry system employs a Housing First model that prioritizes individuals and families facing the highest vulnerability and needs for permanent, supportive housing. Contact Coordinated Entry Monday through Friday, from 9 a.m.-5 p.m. at: [\(866\) 542-5480](tel:(866)542-5480) or email [CE@srcharities.org](mailto:CE@srcharities.org)

For more information about keeping cool in the summer heat, visit the County Emergency information website: [www.socoemergency.org/heat](http://www.socoemergency.org/heat) or call 211. Updates on weather conditions are available from the National Weather Service [www.weather.gov](http://www.weather.gov).

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#### Contact Information

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## COMUNICADO DE PRENSA

**PARA PUBLICACION INMEDIATA**

Fecha: 15 de junio, 2021

### **Los Oficiales de Salud del Condado de Sonoma emiten un Alerta de Calor**

SANTA ROSA, CA – El Departamento de Servicios de Salud del Condado de Sonoma ha emitido un Alerta de Calor en respuesta a la predicción del Servicio Meteorológico Nacional de varios días consecutivos de calor de entre 90 y más de 100°F del miércoles 16 de junio al viernes 18 de junio. Estas condiciones climáticas pueden causar un golpe de calor y empeorar padecimientos médicos crónicos, lo cual puede llevar a complicaciones severas y hasta la muerte. El Oficial Asistente de Salud del Condado de Sonoma, Dr. Kismet Baldwin, les pide a los residentes que tomen sencillas medidas para mantenerse frescos y ayuden a prevenir enfermedades relacionadas con el calor.

"El calor intenso puede constituir un riesgo, pero hay muchas cosas que podemos hacer para reducir los problemas relacionados con el calor" dijo el Dr. Baldwin. "Aunque el tiempo de calor en el verano puede ser peligroso para cualquiera, incluyendo a los jóvenes y a la gente sana, el mayor riesgo lo representa para los adultos mayores, los niños pequeños y aquellos con padecimientos médicos crónicos, como enfermedades de corazón, pulmonares y respiratorias".

Para protegerse a usted y a su familia cuando el clima este muy caliente, por favor siga los siguientes consejos:

- Nunca deje a nadie dentro de un auto estacionado, incluyendo a los niños y a las mascotas, ni por un tiempo breve.
- Utilice el aire acondicionado para refrescarse o vaya a algún lugar con aire acondicionado, como un cine o un centro comercial. Revise los requisitos de utilizar tapa bocas para poder entrar.
- Tome muchos líquidos. No espere hasta que le de sed para tomar algo. Evite el alcohol, la cafeína y las bebidas azucaradas. Si su doctor normalmente le limita la cantidad de líquidos que puede tomar o le ha recetado pastillas de agua, pregúntele cuanto puede tomar de líquidos mientras haga calor.
- Combata al calor con regaderazos y baños fríos.
- Aléjese del sol lo más que pueda. Cuando sea posible, evite las actividades pesadas durante la parte más caliente del día (entre las 11 a.m. y las 4 p.m.) y tome descansos frecuentes.
- Póngase ropa suelta, ligera y de colores claros para mantenerse fresco.

- Utilice bloqueador solar y un sombrero ventilado (p. ej. de paja o de malla tejida) cuando este en el sol y aun cuando este nublado.
- Sepa Ud. que algunas medicinas afectan la capacidad del cuerpo de sudar y mantenerse fresco, incluyendo los antihistamínicos, los anti depresivos, las pastillas para dormir de venta sin receta, las pastillas contra la diarrea, los bloqueadores beta, las medicinas contra el Parkinson y las drogas psiquiátricas. NO deje de tomar sus medicinas a menos que se lo pida su doctor.
- Vigile a sus vecinos que sean adultos mayores o aquellos que están enfermos, para ver si necesitan ayuda.

“Como siempre, durante las emergencias debemos de cuidarnos unos a otros”, dijo Lynda Hopkins, Presidenta de la Junta de Supervisores del Condado de Sonoma. “Manténganse en contacto cercano con la familia, los amigos y los vecinos que sean medicamente frágiles o que trabajen en exteriores. Es importante recordarles a todos que busquen una sombra, que tomen agua y que busquen a un médico si tienen síntomas de fatiga por el calor”. Para aquellos que viven en el desamparo, el Sistema Coordinado de Registro está disponible para ofrecerles albergue, servicios y vivienda. El programa les da prioridad a aquellos que más lo necesitan y proporciona información a las comunidades para que asignen recursos de manera estratégica e identifiquen las fallas en el servicio. El Sistema Coordinado de Registro del Condado de Sonoma emplea un modelo de Vivienda Primero que les da prioridad a las personas y a las familias que enfrentan la vulnerabilidad más alta y la necesidad más crítica de tener vivienda permanente y de apoyo. Contacte al Registro Coordinado de lunes a viernes de 9 a.m. a 5 p.m. al: (866) 542-5480 o al correo electrónico [CE@srcharities.org](mailto:CE@srcharities.org)

Para mayor información sobre cómo mantenerse fresco en el calor del verano, visite la página de información de Emergencia del Condado en: [www.socoemergencia.org/calor](http://www.socoemergencia.org/calor) o llame al 211.

Hay actualizaciones disponibles sobre las condiciones meteorológicas del Servicio Meteorológico Nacional en: [www.weather.gov](http://www.weather.gov).

###

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## APPENDIX 4: SAMPLE STAKEHOLDER EMAIL TEMPLATES

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### Extreme Heat Annex NOT being implemented

*Subject Line should state: Hot Weather Predicted for Sonoma County {Insert Day, Date} – Extreme Temperature Annex NOT being Implemented*

Dear Operational Area Partners,

The National Weather Service-San Francisco has issued a partner email indicating hot weather including Sonoma County between **(insert dates here)**. The NWS is advising hotter than normal temperatures between 95-100 degrees in many inland Sonoma County areas. The temperature table/HeatRisk map for this event is pasted below.

The Extreme Temperature Annex is **NOT BEING IMPLEMENTED**, as implementation triggers are not being met.

Residents are encouraged to follow county agencies and their local governments on social media including SoCoEmergency.org.

## Phase 2 (Warning and Preparation)

*Subject Line should state: Implementation of the Op Area Extreme Heat Annex – to the Warning Phase  
{Insert Day, Date}*

Dear Operational Area Partners,

The National Weather Service-San Francisco Office has issued a partner email indicating hot weather including Sonoma County between (**insert dates here**). The NWS is advising ambient air temperature of 100°F for three (3) or more days and a HeatRisk Level of 3 or 4 for areas in the County.

The Excessive Temperature Annex is being implemented at Phase 2 (Warning and Preparation). Op Area agencies should continue in this phase until the heat event is over or advised otherwise.

Reminder of Potential Actions from the Annex:

- Convene extreme heat event meeting to assess the threat and develop response strategies/action plans for the potential emergency
- Activate Emergency Operations Centers (EOCs) and/or Department Operations Centers (DOCs)
- Assess and consider implementing public health measures including closing at-risk facilities and/or curtailing outdoor activities
- Increase staffing, cancellation of leave, adoption of maximum staffing schedules
- Deploy and/or increase testing of critical equipment (ex. generators)
- Implement of Continuity of Operations Plans (COOPs)
- Maximize readiness of vehicle fleets including fueling
- Prepare facilities
- Protect or shutdown of sensitive electronic equipment
- Identify potential cooling centers and place on standby or activate as appropriate.
- Curtail or halting of non-critical functions
- Identify and notify at-risk populations; prepare to provide assistance as needed
- Increase public information efforts including evaluation of the need for a Joint Information Center (JIC) and/or a public information hotline
- Increase outreach and information flow to vulnerable populations
- Consider sending a representative to PG&E WSOC or requesting a PG&E Agency Representative for the Op Area EOC
- Implement recall of staff as needed

The temperature table/HeatRisk map for this event is pasted below.

CAISO has not issued any emergency alerts or warning in relation to this heat event.

The Operational Area EOC is not activated. DEM Duty Officer only. An Operational Area Coordination Call is scheduled for **{Insert Day, Date}**

Residents are encouraged to follow county agencies and their local governments on social media including SoCoEmergency.org.

### **Phase 3 (Warning and Preparation)**

*Subject Line should state: Activation of the Op Area Extreme Heat Annex – to the Emergency Response Phase {Insert Day, Date}*

Dear Operational Area Partners,

The Sonoma County Operational Area Extreme Heat Annex is being implemented at Phase 3 - Emergency Response due to:

***(Select the appropriate reason(s) below)***

- Forecasted NWS HeatRisk Levels of 3 or 4 for three or more days
- Predicted ambient air temperature of at least 100°F for three or more days
- CAISO is issuing a Stage 2 or 3 Electrical Emergency or implementing rotating outages concurrent to the Extreme Heat Event
- Increased reports of exposure-related illnesses, medical emergencies or mortality reported by Coastal Valleys Emergency Medical Services (EMS) or
- Recommendation by the County Health Officer.

Reminder of Potential Actions from the Annex:

- Fully implementing actions identified in Phase 2
- Convene/continue extreme heat event meeting to coordinate inter-agency activities, integrate into EOC if activated
- Activate a Joint Information Center
- Monitor indicators, particularly heat-related injuries and deaths
- Expand locations and operating hours of cooling centers

The temperature table/HeatRisk map for this event is pasted below.

CAISO has not issued any emergency alerts or warning in relation to this heat event.

The Operational Area EOC is not activated. DEM Duty Officer only. An Operational Area Coordination Call is scheduled for **{Insert Day, Date}**

Residents are encouraged to follow county agencies and their local governments on social media including SoCoEmergency.org.

## APPENDIX 5: HEAT RELATED HEALTH CONDITIONS

Medical Condition	Symptoms	Responses
HEAT CRAMPS	<ul style="list-style-type: none"> <li>• Painful muscle cramps and spasms, usually in muscles of abdomen, arms and legs</li> <li>• Heavy sweating</li> </ul>	<ul style="list-style-type: none"> <li>• Stop all activity and sit in a cool place.</li> <li>• Gently stretch and massage affected muscle groups.</li> <li>• Drink clear juice or a sports beverage.</li> <li>• Consult with a clinician or physician if individual has cardiac problems or cramps do not subside within 1 hour.</li> </ul>
HEAT SYNCOPE (FAINTING)	<ul style="list-style-type: none"> <li>• Skin moist and cool.</li> <li>• Light-headedness, dizziness, fainting</li> </ul>	<ul style="list-style-type: none"> <li>• Sit or lie down in a cool place.</li> <li>• Slowly drink water, clear juice, or a sports beverage.</li> </ul>
HEAT EXHAUSTION	<ul style="list-style-type: none"> <li>• Heavy sweating, weakness, skin is cool, pale, and clammy</li> <li>• Rapid but weak pulse</li> <li>• Normal temperature possible</li> <li>• Possible muscle cramps, dizziness, fainting, headache, fatigue, nausea, and vomiting</li> </ul>	<ul style="list-style-type: none"> <li>• Move individual out of sun and into shady or air-conditioned location.</li> <li>• Lay person down, elevate legs, and loosen or remove clothing</li> <li>• Apply cool, wet cloths or use mister and fan</li> <li>• Give sips of cool water or other non-alcoholic, non-caffeine beverage</li> <li>• Seek medical attention if symptoms worsen or last longer than one hour.</li> <li>• Monitor carefully, as it can quickly progress to heat stroke</li> </ul>
HEAT STROKE (SUNSTROKE)	<ul style="list-style-type: none"> <li>• Altered mental state—irritability, personality changes.</li> <li>• Rapid heartbeat</li> <li>• Rapid shallow breathing</li> <li>• Possible throbbing headache, confusion, nausea, and dizziness</li> <li>• High body temperature (&gt;104°F)</li> <li>• Rapid and strong pulse is possible</li> <li>• Possible unconsciousness</li> <li>• Skin may be hot and dry due to lack of sweating, or moist if caused by exertion</li> </ul>	<ul style="list-style-type: none"> <li>• Heat stroke is a medical emergency. Summon emergency medical services or get the individual to a hospital immediately. Delay can be fatal.</li> <li>• Move individual to a cooler, preferably air-conditioned environment</li> <li>• Reduce body temperature with a water mister, covering with cool sheets or sponging. Use air conditioners</li> <li>• Use fans if heat index temperatures are below the high 90's</li> <li>• Remove clothing</li> <li>• If temperature rises again, repeat process</li> <li>• Offer cool water or other non-alcoholic beverage without caffeine</li> </ul>

## APPENDIX 6: ACRONYMS AND ABBREVIATIONS

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A&W	Alert & Warning
ACS	Auxiliary Communications System
AFN	Access and Functional Needs
ARC	American Red Cross
CAISO	California Independent System Operator
CAO	County Administrator's Office
CHP	California Highway Patrol
CNG	Compressed Natural Gas
COAD	Community Organizations Active in Disaster
COOP	Continuity of Operations Plan
DEM	Department of Emergency Management (Sonoma County)
DHS	Department of Health Services (Sonoma County)
DOC	Department Operations Center
DSW	Disaster Service Worker
EAS	Emergency Alert System
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
GIS	Geographic Information System
GSD	General Services Department (Sonoma County)
HVAC	Heating/Ventilation/Air Conditioning
ICP	Incident Command Post
ICS	Incident Command System
ISP	Internet Service Provider
JIC	Joint Information Center
JIS	Joint Information System
LNO	Liaison Officer
MHOAC	Medical/Health Operational Area Coordinator
NGO	Non-Governmental Organization
NIMS	National Incident Management System
NWS	National Weather Service
OA	Operational Area
OES	Office of Emergency Services (State of California)
PG&E	Pacific Gas & Electric
PIO	Public Information Officer

PSAP	Public Safety Answering Point
PSPS	Public Safety Power Shutoff
REDCOM	Redwood Empire Dispatch Communications Authority
SDO	Staff Duty Officer (Sonoma County)
SEMS	Standardized Emergency Management System
SOP	Standard Operating Procedure
TPW	Transportation and Public Works (County of Sonoma)
UPS	Uninterruptable Power Supply
VoIP	Voice over Internet Protocol
WEA	Wireless Emergency Alert