County of Sutter

Emergency Operations Plan

Sutter Operational Area

Annex 7

Extreme Weather and Seismic Events Plan

February 2015

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TABLE OF CONTENTS

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Section 1 - INTRODUCTION

General

This annex is general in nature and written to augment existing checklists and SOPs currently in place. Extreme Weather and Seismic Events, while unrelated, are addressed together due to the infrequent nature of occurrence. Please refer to the **Sutter County OA EOP, Basic Plan Chapter B, Section 2 Threat Matrix**.

Sutter County is susceptible to extreme weather/storm conditions. Extreme weather/storm conditions are a generalized term used to describe severe thunderstorms, tornadoes, heavy precipitation, high winds, extreme heat or cold, and extended periods of drought. Extreme weather may cause a variety of damage, depending on the type or weather situation. Damage may range from temporary power and utility outages due to thunderstorm and high wind activity to the sometimes, although rare, destruction of a tornado. Extreme weather such as a drought can have long-term economic repercussions.

No active earthquake faults are known to exist in Sutter County. Regionally, active faults could generate ground motion that would be felt in Sutter County. A series of small faults within the Sutter Buttes area exhibit evidence of quaternary motion. Generally, these movements on these faults were associated with deep-seated volcanism, but may have been partially related to other crust deformation processes. These faults are not considered active.

No active volcanoes are known to exist in Sutter County. The Sutter Buttes were formed from volcanic activity and are now extinct. The Sutter Buttes last erupted during a Pleistocene glacial period. The closest "active" volcano is Mt. Lassen, in Shasta County, which last erupted between 1914 and 1917, with minor activity continuing until 1921. The fall of fine ash was reported as far away as Elko, Nevada, more than 500 kilometers east of Lassen Peak. Even though the volcano has not erupted since 1917, it demonstrates volcanic activity through its fumaroles, mud pots, and hydrothermal areas.

Emergency Plan Management and Updates

The Emergency Operations Division will be responsible for updates and maintenance of this plan.

Authority Citations

The authority for Emergency Operations and Disaster Preparedness used in development of this annex of the Sutter County Operational Area EOP are found in the **Sutter County OA EOP, Basic Plan Chapter A, Section 6**.

This plan augments the Sutter County Operational Area Emergency Operations Plan, dated October 2011.

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Section 2 – PLAN OVERVIEW

Concept of Operations

This plan or the applicable portions of this plan will be implemented as directed by the County Administrative Officer, Sheriff, County Fire Chief, or Incident Commander as appropriate.

Guidance for implementation is in the **EOP Basic Plan Chapter D, Response Phase - Initial Response,** in **ANNEX 1 - Emergency Support Functions Handbook and Checklists, Section 3, General Response Checklists,** and in **ANNEX 2 – Emergency Operations Center Handbook and Position Checklists.**

Additional supplemental information is provided in the attachments of this annex.

During a disaster or emergency, this plan will be implemented in accordance with the Standardized Emergency Management System (SEMS).

Personnel assigned to the organizational levels of SEMS will follow checklists/SOPs established by the EOP or the appropriate annex to the EOP. The Emergency Operations Director or Incident Commander will determine communication equipment usage and any equipment issued to an emergency worker will be documented and tracked to ensure proper accountability of the asset. Coordination of public or media information releases will be through the PIO. The Management function of SEMS will determine what information is to be released and when the appropriate timeframe for such a release will occur.

For more information on SEMS/ICS refer to the **Sutter County OA EOP Basic Plan, Chapter A**, **Section 3**. The SEMS functions for response are indicated in this annex ***Attachment A, SEMS Functions.***

The federal Department of Homeland Security has established that the National Incident Management System (NIMS) will be used during an emergency/disaster. The State of California, through Executive Order S-2-05, has established that the implementation of SEMS/ICS substantially meets the requirements of NIMS.

For more information on NIMS refer to the **Sutter County OA EOP Chapter A**.

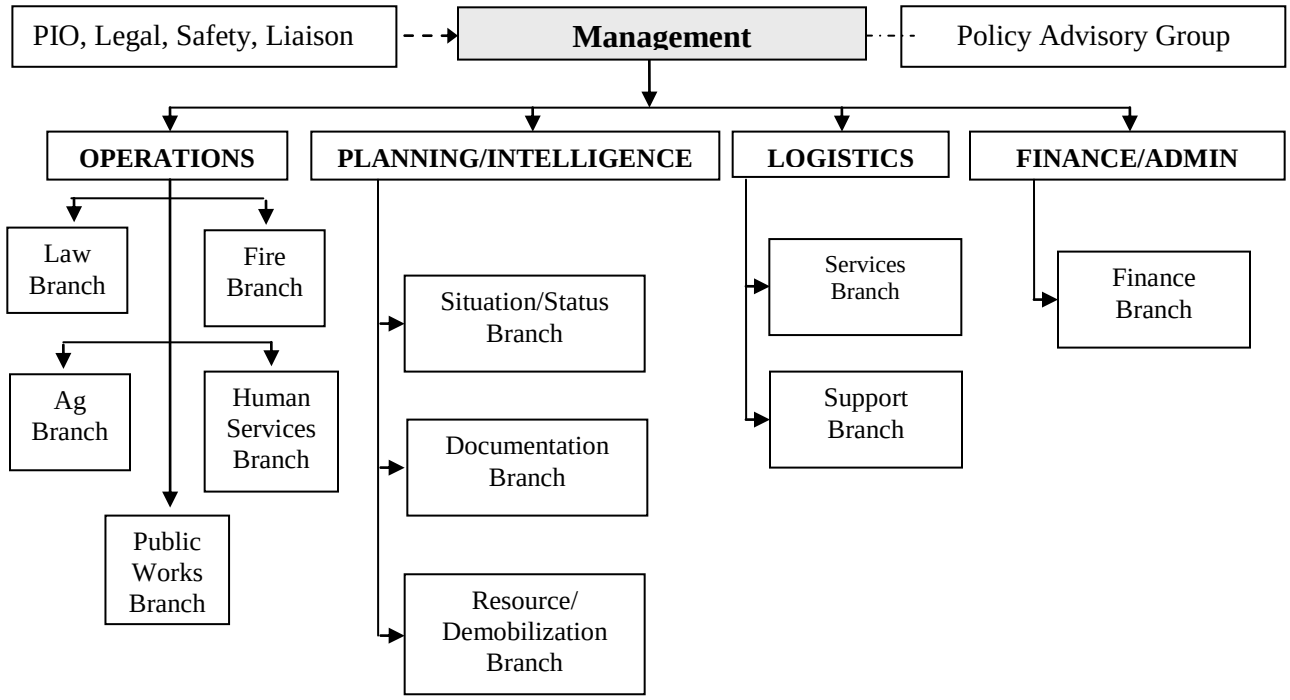
Emergency Organizational Structure

During an extreme weather or seismic event/emergency, the Incident Commander will establish the initial command and control functions based on the Incident Command System. Most events/emergencies will be operationally controlled on-scene and coordination of Operational Area resources will be made through a Level 1 or 2 activation of the Emergency Operations Center when deemed necessary by the Incident Commander or Emergency Operations Director.

During a Level 3 activation of the Emergency Operations Center, the Emergency Organization operates under SEMS, with the Emergency Operations Director providing leadership to the

Management Function. The Management Function provides Command and Control to the Emergency Operations Team and consists of the Sheriff, the County Fire Chief, Public Works Director and the Emergency Operations Manager. This membership may change based on the nature of the emergency. The chart below is representative of a Level 3 Activation of the Emergency Operation Center (EOC) for a large-scale event.

Emergency Organization Chart



Operations –

Law Branch:
Field Ops, Detention, and Dispatch
Fire Branch:
Fire, HazMat Response, and Rescue
Ag Branch:
Biologists and Animal Control
Human Services Branch:
Care & Shelter, Red Cross,
and Medical Transport
Environmental Health, Mental Health**,**
and Public Health
Public Works Branch:
Reconnaissance, Engineering Support,
and Heavy Equipment Support

Finance & Administration –

Finance Branch:
Invoice Processing and Payroll Tracking

Planning & Intelligence –

Situation/Status Branch:
Planning & Forecasting, Field Observation, and Info Collection/Display
Documentation Branch:
Written and Visual/Graphic
Resource and Demobilization Branch:
Personnel, Equipment, and Material

Logistics –

Services Branch:
Communications
County Employees and Volunteers
Information Systems Technicians
Support Branch:
Supplies, Equipment, Transportation, and Facilities
(EOC, Off-Site Work Areas, and R&R Areas)

Section 3 – HAZARD ANALYSIS FOR EXTREME WEATHER

General

Most extreme weather occurs in the Sutter County Operational Area in the form of high winds and flooding. Flooding is addressed in **ANNEX – 5 Floods and Dam Failure**. High winds include straight-line winds and tornadoes. Additionally, when other events (hail, lightning, and winter weather) occur, they do so infrequently. Even though it is an infrequent occurrence, tornadoes do occur in Sutter County. The most recent was an F0 tornado that touched down west of Yuba City in March of 2005. In the past, Sutter County has declared disasters for extreme weather; including severe winter storms, drought, freezes, and heavy rains/winds. The following is a brief synopsis of the types of extreme weather that could be experienced in the Sutter County Operational Area. The information provided is for informational purposes only and responders will rely on their appropriate checklist for such events.

Thunderstorms and Lightning

Some thunderstorms can be seen approaching, while others hit without warning. It is important to learn and recognize the danger signs and to plan ahead.

A *severe thunderstorm watch* is issued by the National Weather Service when the weather conditions are such that a severe thunderstorm (damaging winds 58 miles per hour or more, or hail three-fourths of an inch in diameter or greater) is likely to develop. This is the time to locate a safe place in the home and tell family members to watch the sky and listen to the radio or television for more information.

A *severe thunderstorm warning* is issued when a severe thunderstorm has been sighted or indicated by weather radar. At this point, the danger is very serious and everyone should go to a safe place, turn on a battery-operated radio or television, and wait for the "all clear" by the authorities.

Because light travels much faster than sound, lightning flashes can be seen long before the resulting thunder is heard. As a rule, if you hear thunder, you are close enough to be struck by lightning. Knowing how far away a storm is does not mean that you're in danger only when the storm is overhead. Lightning has been known to strike up to 15 miles away from the parent cloud. Lightning causes on average, 87 fatalities each year across the nation.

Tornadoes

Tornadoes are spawned by thunderstorms. While common thinking is that severe weather is a problem of the distant prairie dwellers in Kansas and Oklahoma, the truth of the matter is that all fifty states experience severe weather. For example, one should not forget the super outbreak of tornadoes that ripped through portions of Ohio on April 4, 1974. During this outbreak, the deadly Xenia, Ohio, tornado killed 34 people and caused millions of dollars in damage. Another deadly outbreak occurred on May 31, 1985, when 10 tornadoes trekked across Ohio and 17 across Pennsylvania. Damage from the event was estimated in the millions of dollars.

While tornadoes grab headlines due to their swift and destructive nature, flash floods, lightning, straight-line winds, and hail are more common by-products of thunderstorms and result in many more deaths and millions of dollars in damage each year. In fact, tornadoes kill an average of 82 people per year nationally.

Flash Flooding/Flooding

The number one weather related killer is flooding. Flooding deaths often occur as people try to drive through flooded roads and become trapped or swept away in the rushing waters. More information is provided in **ANNEX 5 - Floods and Dam Failure**.

Straight-Line Winds

Straight-line thunderstorm winds, occasionally in excess of 100 miles an hour, can uproot trees and destroy buildings. Often, the damage from straight-line wind events is blamed on tornadoes. Similar to tornado preparedness, it is important that you designate safe areas to provide shelter from straight-line winds produced by thunderstorms.

Hail

Hail is produced by many strong thunderstorms. Hail can be smaller than a pea or as large as a softball and can be very destructive to plants and crops. In a hailstorm, take cover immediately. Pets and livestock are particularly vulnerable to hail, so bring animals into a shelter. Thunderstorms in Sutter County occasionally produce damaging hail. While fatalities from hail are few, hail injures many and causes millions of dollars in damage each year.

Extreme Cold

Extreme winter weather takes a toll on lives and property throughout many portions of the United States. Heavy snow and freezing rain are responsible for numerous traffic fatalities each year. Moreover, hundreds of deaths and injuries from hypothermia, exposure, and frostbite are reported each year as bitter cold air masses plunge into the United States during the winter. Although the above weather conditions are often accepted as facts in the Sierra, when ice and snow falls in the valley it's a different story. When extreme winter weather hits in the valley, it usually manifests itself in the form of snow and ice on the highways. To a degree, there is always an exposure threat.

Extremely cold temperatures often accompany a winter storm or are left in its wake. Prolonged exposure can cause frostbite or hypothermia and can become life-threatening. When extremely cold temperatures are accompanied by wind, an especially dangerous situation exists.

Wind Chill is based on the rate of heat loss from exposed skin caused by the combined effects of wind and cold. As the wind increases, heat is carried away from the body at an accelerated rate, driving down the body temperature, leading to hypothermia. A wind chill chart is located in **Attachment B**.

Extreme Heat

Heat waves do not elicit the same immediate response as floods, fires, earthquakes and typical disaster scenarios. They destroy less but have claimed more lives over the past fifteen years than all other declared disaster events combined. For example, the 1989 Loma Prieta earthquake resulted in 63 deaths, while the 1992 Northridge earthquake was responsible for the loss of 55 lives. The catastrophic 2003 Southern California Firestorms resulted in 24 deaths. The worst single heat wave event in California occurred in Southern California in 1955, when an eight-day heat wave resulted in 946 deaths.

Typical summer temperatures in California contribute to the untimely demise of 20 people on average per year. The Heat Wave in July 2006 was the attributable cause of the deaths of 138 people, throughout California, over a 13 day period. We did not see the billions of dollars in damage as we did in the two earthquakes cited, nor did we see over three thousand homes damaged, as we did in the year 2003 firestorm; but we saw approximately twice the number of human deaths due to the heat wave as we saw in each earthquake, and almost six times the fatalities from the heat wave as was observed in the devastating firestorm of year 2003. Heat waves are obviously less dramatic and more deadly.

Heat emergencies are often slower to develop. It could take a number of days of oppressive heat for a heat wave to have a significant or quantifiable impact. Heat waves do not strike victims immediately, but rather their cumulative effects slowly take the lives of vulnerable populations.

In 2006, the National Weather Service established a Heat Index Program Alert system. The alert system will notify CalOES and local governments of forecasted extreme heat periods allowing for the activation of appropriate plans. The Heat Index Chart is provided in **Attachment C** for reference and planning purposes.

Drought

Water managers today use hydrologic records of the past century to estimate how climatic conditions would affect future water availability and water needs. Planners take into account the normal fluctuations of wet and dry years in allocating deliveries from reservoirs and in determining how much water will be provided from other sources. Because the state has also experienced extreme and prolonged droughts, the most recent one occurring from 1987 to 1992, many local water agencies have developed drought contingency plans for such rare but extreme conditions that can result in significant socio economic and environmental impacts.

The most severe recorded drought in California occurred in 1976-1977. Two consecutive years with little precipitation (4th driest and the driest year in the recorded history) left California with record low storage in its surface reservoirs and groundwater levels dangerously lowered. Socio economic and environmental impacts were very severe during these extreme drought conditions. The total loss due to the drought during these two years exceeded $ 2.5 billion ($6.5 billion at today's cost). The most recent prolonged drought lasted 6 years from 1987-1992. During the first 5 years of the drought, in San Joaquin valley the groundwater extractions exceeded the recharge by 11 million acre-feet which caused increased land subsidence in some areas. DWR

studies indicate that in 1990-92, the drought resulted in reduced gross revenues of about $670 million to California agriculture. Energy utilities were forced to substitute hydroelectric power with more costly fossil-fuel generation at an estimated statewide cost of $500 million in 1991. The drought also adversely affected snow-related recreation businesses. Some studies suggest as much as an $85-million loss for snow-related recreation businesses during the winter of 1990-91.

Section 4 – HAZARD ANALYSIS FOR SEISMIC EVENTS

General

For the purposes of emergency planning the term, ***"Seismic Events"*** as it relates to this annex will include earthquakes ***and volcanoes***. The following is a brief synopsis of the seismic events that could be experienced in the Sutter County Operational Area. The information provided is for informational purposes only and responders will rely on their appropriate checklist for such events.

Earthquakes

Earthquakes are the result of forces deep within the Earth's interior that continuously affect the surface of the Earth. The energy from these forces is stored in a variety of ways within the rocks. When this energy is released suddenly, for example by shearing movements along faults in the crust of the Earth, an earthquake results. The area of the fault where the sudden rupture takes place is called the focus or hypocenter of the earthquake. The point on the Earth's surface directly above the focus is called the epicenter of the earthquake.

The severity of an earthquake can be expressed in terms of both intensity and magnitude. However, the two terms are quite different, and they are often confused.

Intensity is based on the observed effects of ground shaking on people, buildings, and natural features. It varies from place to place within the disturbed region depending on the location of the observer with respect to the earthquake epicenter.

Magnitude is related to the amount of seismic energy released at the hypocenter of the earthquake. It is based on the amplitude of the earthquake waves recorded on instruments which have a common calibration. The magnitude of an earthquake is thus represented by a single, instrumentally determined value.

As stated previously in this annex, there are no active faults in Sutter County. However, fault activity in other areas, depending on intensity, could be felt in this region. Resulting ground movement from such events is expected to be minimal for this region. Information provided by the United States Geological Service (USGS) website shows faults in Butte, Yolo, and Yuba Counties.

The Richter Magnitude Scale

Seismic waves are the vibrations from earthquakes that travel through the Earth; they are recorded on instruments called seismographs. Seismographs record a zigzag trace that shows the varying amplitude of ground oscillations beneath the instrument. Sensitive seismographs, which greatly magnify these ground motions, can detect strong earthquakes from sources anywhere in the world. The time, location, and magnitude of an earthquake can be determined from the data recorded by seismograph stations.

The Richter magnitude scale was developed in 1935 by Charles F. Richter of the California Institute of Technology as a mathematical device to compare the size of earthquakes. The magnitude of an earthquake is determined from the logarithm of the amplitude of waves recorded by seismographs. Adjustments are included in the magnitude formula to compensate for the variation in the distance between the various seismographs and the epicenter of the earthquakes. On the Richter Scale, magnitude is expressed in whole numbers and decimal fractions. For example, a magnitude of 5.3 might be computed for a moderate earthquake, and a strong earthquake might be rated as magnitude 6.3. Because of the logarithmic basis of the scale, each whole number increase in magnitude represents a tenfold increase in measured amplitude; as an estimate of energy, each whole number step in the magnitude scale corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number value.
At first, the Richter Scale could be applied only to the records from instruments of identical manufacture. Now, instruments are carefully calibrated with respect to each other. Thus, magnitude can be computed from the record of any calibrated seismograph.

Earthquakes with magnitude of about 2.0 or less are usually called micro earthquakes; they are not commonly felt by people and are generally recorded only on local seismographs. Events with magnitudes of about 4.5 or greater--there are several thousand such shocks annually--are strong enough to be recorded by sensitive seismographs all over the world. Great earthquakes, such as the 1964 Good Friday earthquake in Alaska, have magnitudes of 8.0 or higher. On the average, one earthquake of such size occurs somewhere in the world each year. Although the Richter Scale has no upper limit, the largest known shocks have had magnitudes in the 8.8 to 8.9 range. Recently, another scale called the moment magnitude scale has been devised for more precise study of great earthquakes.

The Richter Scale is not used to express damage. An earthquake in a densely populated area which results in many deaths and considerable damage may have the same magnitude as a shock in a remote area that does nothing more than frighten the wildlife. Large-magnitude earthquakes that occur beneath the oceans may not even be felt by humans.

The Modified Mercalli Intensity Scale

The effect of an earthquake on the Earth's surface is called the intensity. The intensity scale consists of a series of certain key responses such as people awakening, movement of furniture, damage to chimneys, and finally--total destruction. Although numerous intensity scales have been developed over the last several hundred years to evaluate the effects of earthquakes, the one currently used in the United States is the Modified Mercalli (MM) Intensity Scale. It was developed in 1931 by the American seismologists Harry Wood and Frank Neumann. This scale, composed of 12 increasing levels of intensity that range from imperceptible shaking to catastrophic destruction, is designated by Roman numerals. It does not have a mathematical basis; instead it is an arbitrary ranking based on observed effects.

The MM Intensity value assigned to a specific site after an earthquake has a more meaningful measure of severity to the nonscientist than the magnitude because intensity refers to the effects actually experienced at that place. After the occurrence of widely-felt earthquakes, the Geological Survey mails questionnaires to postmasters in the disturbed area requesting the

information so that intensity values can be assigned. The results of this postal canvass and information furnished by other sources are used to assign an intensity value, and to compile isoseismic maps that show the extent of various levels of intensity within the felt area. The maximum observed intensity generally occurs near the epicenter.

The lower numbers of the intensity scale generally deal with the manner in which the earthquake is felt by people. The higher numbers of the scale are based on observed structural damage. Structural engineers usually contribute information for assigning intensity values of VIII or above.

The following is an abbreviated description of the 12 levels of MM Intensity:

I. Not felt except by a very few under especially favorable conditions.

II. Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.

III. Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration similar to the passing of a truck. Duration estimated.

IV. Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.

V. Felt by nearly everyone; many awakened. some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.

VI. Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.

VII. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.

VIII. Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.

IX. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.

X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rail bent.

XI. Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.

XII. Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Another measure of the relative strength of an earthquake is the size of the area over which the shaking is noticed. This measure has been particularly useful in estimating the relative severity of historic shocks that were not recorded by seismographs or did not occur in populated areas. The extent of the associated felt areas indicates that some comparatively large earthquakes have occurred in the past in places not considered by the general public to be regions of major earthquake activity. For example, the three shocks in 1811 and 1812 near New Madrid, Mo., were each felt over the entire eastern United States. Because there were so few people in the area west of New Madrid, it is not known how far it was felt in that direction. The 1886 Charleston, S.C., earthquake was also felt over a region of about 2 million square miles, which includes most of the eastern United States.

Since there are no active faults in the Sutter County Operational Area, it is expected that an earthquake in the surrounding areas may generate up to a maximum MM intensity of V.

Volcanoes

Volcanic eruptions are one of Earth's most dramatic and violent agents of change. Not only can powerful explosive eruptions drastically alter land and water for tens of kilometers around a volcano, but tiny liquid droplets of sulfuric acid erupted into the stratosphere can change our planet's climate temporarily. Eruptions often force people living near volcanoes to abandon their land and homes, sometimes forever. Those living farther away are likely to avoid complete destruction, but their cities and towns, crops, industrial plants, transportation systems, and electrical grids can still be damaged by tephra, lahars, and flooding.

As previously stated, there are no active volcanoes in the Sutter County Operational Area. However, given the last eruption of Mt Lassen produced significant ash to reach Elko, Nevada, it is expected that an event bolstered by wind patterns, could deliver ash to the Sutter County Operational Area.

Additionally, any ground shaking produced by the volcano would produce similar hazards as identified in previous paragraphs above on earthquakes. Due to the distance involved between this region and Mt Lassen, pyroclastic flows and lava flows are not seen to be viable hazards. Therefore, this analysis will focus on hazards associated with ash-fall.

Ash fall can adversely affect crops and livestock in a variety of ways, but it is very difficult to predict exact consequences and associated costs of potential ash damage or mitigation measures. Ash falls may be poisonous to livestock and result in clinical diseases, including hypocalcaemia, fluorosis, fore stomach and intestinal damage, and secondary metabolic disorders.

Where there is a significant ash fall, clean water will likely be in short supply. Natural water sources and man-made ponds may be temporarily contaminated by ash, and water-pumping equipment can be damaged by the abrasive ash. When ash falls lead to the complete burial of

pastoral plants for 5-7 days, it is likely that all plants will die, as also occurs with heavy silting and flooding. Even if ash is removed within 5 days, plants may still die from burning if the ash is acidic.

Volcanic ash fall can quickly lead to the widespread loss of electricity for millions of people, businesses, and critical life-support services. Power-generating facilities may shut down during heavy ash fall and may not start again until ash has been removed from the facility, air-intake systems, and insulators. Weather conditions during an ash fall affects the extent to which ash adheres to electrical insulators—loss of power typically occurs when ash is wet. Immediate ash removal is the best strategy to prevent widespread power outages.

Volcanic ash can cause many different problems to electrical distribution systems. The most commonly problems are supply outages resulting from insulator flashover, controlled outages during ash cleaning, and line breakage.

Ash fall may severely disrupt transportation systems over extremely large areas for hours to days, including roads and cars, airports and aircraft, and railways. An ash fall of 1-3 mm can seriously reduce visibility on highways, make roads slippery for cars, strand travelers, damage vehicles and aircraft that operate in ashy conditions, and result in the temporary shut down of airports and highways. Returning transportation systems to normal service following an ash fall requires the removal and disposal of ash and the cleaning of vehicles, aircraft, and facilities. Cleanup operations will be most efficient when a disposal site for the ash is identified before ash begins to fall (see considerations for identifying an ash dump site) and residents, businesses, and utilities coordinate their activities.

Heavy ash fall may result in the collapse of roofs under the weight of ash and high levels of respirable ash in the air (ash particles less than 10 microns in diameter). The collapse of roofs can be deadly for people within buildings, but falling ash is not yet known to result in serious injury or disease from inhalation. Ash and coarser particles inhaled from within a hot, dense pyroclastic flow or surge, however, almost always results in death from burns or asphyxiation. People exposed to ash fall and subsequent ash-filled air, commonly experience various eye, nose, and throat symptoms. Based on historical eruptions, short-term exposures to ash, however, are not known to pose a significant health hazard. Long-term health effects of volcanic ash have not yet been demonstrated.

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Section 5 – GENERAL PLAN RESPONSIBILITIES

Emergency Operations Center

Emergency Operations Center activation and staffing levels are found in **ANNEX 2 – Emergency Operations Center Handbook and Position Checklists.**

The following is a general guide of the responsibilities for the Emergency Organization:

Management

Management assignments are reflected in ***Attachment A, Emergency Support Functions – Extreme Weather and Seismic Event.***

Operational Structure

The County of Sutter will activate the appropriate SEMS/NIMS functions based upon the level of the extreme weather or seismic event/emergency.

Coordination of Disciplines

Sutter County will use multi-agency, multi-discipline coordination in its response to an extreme weather or seismic event/emergency.

Inclusion of Non-Profit Agencies/Organizations

Non-profit organizations, such as the American Red Cross will be involved in extreme weather or seismic event response planning. Sutter County will contact the appropriate non-profit organizations in the event of a potential threat or actual event.

Public Information

The Public Information Officer (PIO) will be activated as soon as practical during an emergency. The PIO will coordinate with media for news releases.

News release procedures will be agreed upon, and established for the Sutter County EOC, the Unified Command, and other interested parties.

Safety and Security

During a potential threat or actual event, employee safety and operational security will be key concerns for Sutter County.

During actual emergency operations, heightened safety and security procedures will be in force and will be followed by county personnel. Security and safety procedures will also be

implemented for all command posts and other operational sites. The Sheriff's Department will serve as lead for security functions.

Information Sharing and Dissemination

During an actual emergency or disaster the release of information raises significant issues regarding information sharing and dissemination. Security and confidentiality concerns must be weighed against operational needs and public interest.

The notification of an event and any subsequent updates will be made verbally through the most secure form of landline available. Written confirmations of notification and updates will be used. Emergency response personnel will observe communication security procedures. Sensitive information will not be communicated by cell phone or radio.

Sutter County will have scheduled briefings for EOC staff and other emergency response personnel and will coordinate briefing times, reporting approaches, and news releases as much as possible with other SEMS levels.

Sheriff's Office

The Sheriff, or designee, will determine and establish SOPs required for the operation and deployment of law enforcement assets controlled by his Department and as authorized by Local, State, and Federal Statutes/Regulations.

Within the EOC, the Sheriff's Office (SO) will assume the security function.

The Sheriff Office will be the lead for perimeter security, access control, traffic/crowd control, evacuations, and notifications. The Sheriff Office will also coordinate coroner issues and assist with damage assessment and fatalities management. ***Existing procedures may be modified as necessary depending on the situation.***

The Sheriff Office will request law enforcement mutual aid if needed to accomplish these functions.

Fire Services

The County Fire Chief, or designee, will determine and establish SOPs required for the operation and deployment of OA Fire assets controlled by the Division and as authorized by Local, State, and Federal Statutes/Regulations.

Fire Services will be the lead for fire response, hazardous materials events, and medical/rescue operations. Fire Services will provide support, if possible, to the Sheriff's Office for evacuation activities. ***Existing procedures may be modified as necessary depending on the situation.***

Additionally, the County Fire Chief will request fire and rescue mutual aid if needed.

Emergency Management

The Emergency Operations Manager or designee will assist the Incident Commander during a Level 1/2 Activation of the EOC, or before EOC activation has occurred, to provide information required or other necessary reporting systems as needed. During a Level 3 Activation (Full-Scale), assistance to the Incident Commander will be coordinated through the appropriate EOC function. Additionally, the Emergency Operations Division will provide general awareness information to the public on extreme weather or seismic event preparedness/prevention. This may be accomplished through the county website, Public Services Announcements, or other media.

Operations

The Incident Commander (IC) may be the Sheriff or the County Fire Chief depending on the nature of the situation and availability of staff. If this is the case, the Sheriff or County Fire Chief will designate a representative to the Management Function of the EOC, until the Sheriff or County Fire Chief can be operationally released from the on-scene Command and Control function.

Public Works will serve as lead for damage assessment and will be the representative for utilities concerns. Potential public works activities include:

- reconnaissance of public infrastructure (roads, bridges, facilities, and utilities)
- alternate route identification
- building access
- utility access re-routing
- temporary repairs

Public Works will assist with access and crowd control and fatalities management. The Director of Public Works will request public works mutual aid if needed. They will coordinate with the Sheriff Office on security issues if needed.

Planning/Intelligence ***Attachment A, Emergency Support Functions – Extreme Weather and Seismic Event.***

Includes situation, documentation, demobilization, and resources units.

Logistics Support Requirements ***Attachment A, Emergency Support Functions – Extreme Weather and Seismic Event.***

The Logistics Branch will be responsible for identifying and procuring supplies, services, equipment, and facilities that will be required for Emergency Operation activities.

During emergency operations, particular emphasis will be placed on maintaining OA capabilities of computer systems, telecommunications, including land line and radio.

Finance ***Attachment A, Emergency Support Functions – Extreme Weather and Seismic Event.***

It will be necessary to track costs associated with an event or potential event. Within Finance/Administration Branch there may be a separate Cost Unit to track the costs of the event.

Continuity of Operations

It will be necessary to ensure continuity of day-to-day operations during a potential threat or actual event. This includes payroll processing, contracts management, personnel actions, and file security.

Training and Exercises

Training will be coordinated as necessary to ensure safe, secure, and effective operations of equipment and procedures. The Emergency Operations Division will notify departments, jurisdictions, and agencies of training opportunities, as they are available. Any Operational Area grant funds identified to be expended for exercise/training will be coordinated with the Emergency Operations Division to ensure proper allocation/tracking of the funds before expenditure occurs.

Exercises are important for the successful response of personnel during an emergency or disaster. If an exercise interferes or otherwise hampers normal operations the exercise will be terminated and not resumed until the problem is corrected.

Attachment A
Emergency Support Functions - Extreme Weather and Seismic Event

Emergency Support Functions	Management	Operations	Plan/Intel	Logistics	Fin/Admin
ESF-1 Transportation	EO Director, Agency Reps	PW/SO	Resource Tracking And Demobilization	Procurement Branch	
ESF-2 Communication and Information Technology	EO Director, Agency Reps	SO Dispatch	Situation Analysis	Info Tech & Communications Branch	
ESF-3 Public Works and Engineering	OA Public Works Branch Chief	PW/Agency Reps	Situation Analysis		
ESF-4 Firefighting	OA Fire Coordinator	Fire Branch	Situation Analysis	Procurement Branch	
ESF-5 Emergency Management	EO Director/Incident Commander	OPS Chief	P&I Chief	Logistics Chief	Admin Chief
ESF-6 Mass Care, Housing, and Human Services	OA Mass Care and Shelter Branch Chief	OA Human Services	Situation Analysis	Procurement Branch	
ESF-7 Resource Support	OA Logistics Branch Chief		Resource Tracking	Procurement Branch	Finance
ESF-8 Public Health and Medical Services	OA Health Branch Chief	Health Unit Leader	Situation Analysis	Procurement Branch	
ESF-9 Urban Search and Rescue	SCSO	SCSO/Fire	Situation Analysis	Procurement Branch	
ESF-10 Oil and HazMat Response	OA HazMat Coordinator	Fire Branch	Situation Analysis		
ESF-11 Agriculture and Natural Resources	Ag Commissioner	AG Branch	Situation Analysis		
ESF-12 Energy	EO Director, Agency Reps	Public Works Branch Chief	Situation Analysis		
ESF-13 Public Safety and Security	OA Law Coordinator	SCSO	Situation Analysis		
ESF-14 Long Term Community Recovery	EO Director		Documentation and Demobilization	Personnel Branch	Finance
ESF-15 External Affairs	EO Director/PIO		P&I Chief		

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Attachment B

Wind Chill

WIND CHILL CHART																	
MPH	TEMPERATURE (degrees F)																
Calm	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
EQUIVALENT CHILL TEMPERATURE																	
5	32	27	22	16	11	6	0	-5	-10	-15	-21	-26	-31	-36	-42	-47	-52
10	22	16	10	3	-3	-9	-15	-22	-27	-34	-40	-46	-52	-58	-64	-71	-77
15	16	9	2	-5	-11	-18	-25	-31	-38	-45	-51	-58	-65	-72	-78	-85	-92
20	12	4	-3	-10	-17	-24	-31	-39	-46	-53	-60	-67	-74	-81	-88	-95	-103
25	8	1	-7	-15	-22	-29	-36	-44	-51	-59	-66	-74	-81	-88	-96	-103	-110
30	6	-2	-10	-18	-25	-33	-41	-49	-56	-64	-71	-79	-86	-93	-101	-109	-116
35	4	-4	-12	-20	-27	-35	-43	-52	-58	-67	-74	-82	-89	-97	-105	-113	-120
40	3	-5	-13	-21	-29	-37	-45	-53	-60	-69	-76	-84	-92	-100	-107	-115	-123
45	2	-6	-14	-22	-30	-38	-46	-54	-62	-70	-78	-85	-93	-102	-109	-117	-125
	LITTLE DANGER				INCREASING DANGER (Flesh may freeze within 1 minute.)						GREAT DANGER (Flesh may freeze within 30 seconds.)						

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Attachment C

Heat Index

The following chart identifies the Heat Index as temperature and relative humidity rise:

	The Heat Index												
Air Temp (° F)	**Relative Humidity**												
	40	**45**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**
110 °	136	143	152										
105°	123	129	135	141	148								
100°	111	115	119	124	129	135	141	147					
95°	*101*	*104*	107	110	114	117	122	126	131	136	141		
90°	*92*	*94*	*96*	*98*	*100*	*103*	106	109	112	115	119	127	132
85°	84	85	86	88	89	*91*	*93*	*95*	*97*	*99*	*102*	*104*	107
80°	80	80	81	81	82	82	83	84	84	85	86	86	87
Exposure to full sunshine can increase Heat Index values by up to 15° F.													

The following chart shows the health risks as Heat Index rises:

Heat Index	**Category**	**Possible heat disorders for people in high risk groups**
130°F or higher	Extreme Danger	Heatstroke risk extremely high with continued exposure.
105° - 129°F	Danger	Sunstroke, Heat Cramps and Heat Exhaustion likely, Heatstroke possible with prolonged exposure and/or physical activity.
90° - 105°F	*Extreme Caution*	*Sunstroke, Heat Cramps and Heat Exhaustion possible with prolonged exposure and/or physical activity.*
80° - 90 °F	Caution	Fatigue possible with prolonged exposure and/or physical activity.

The National Weather Service will initiate its Heat Index Program Alert procedures when the high is expected to exceed 105° - 110° (depending on local climate) for at least two consecutive days.

The heat index is how hot the heat-humidity combination makes it feel. As relative humidity increases, the air seems warmer than it actually is because the body is less able to cool itself via evaporation of perspiration.

As the heat index rises, so do health risks.

- When the heat index is 90°F, heat exhaustion is possible with prolonged exposure and/or physical activity.
- When it is 90°-105°F, it is probable with the possibility of sunstroke, heat cramps or heat exhaustion with prolonged exposure and/or physical activity.
- When it is above 105°F, sunstroke, heat cramps or heat exhaustion is likely, and heatstroke is possible with prolonged exposure and/or physical activity.
- When it is 130°F and above, heatstroke and sunstroke are highly likely with continue exposure. Physical activity and prolonged exposure to the heat increase the risks.

Heat Exhaustion occurs when the body is dehydrated**.**

- Symptoms -- headache, nausea, dizziness, cool and clammy skin, pale face, cramps, weakness, profuse perspiration
- First Aid -- move to a cooler spot, drink water with a small amount of salt added (one teaspoon per quart)
- Without Intervention -- it can lead to collapse and heatstroke.

Heatstroke occurs when perspiration cannot occur and the body overheats.

- Symptoms -- headache, nausea, face flushed, hot and dry skin, no perspiration, body temperature over 101°F, chills, rapid pulse
- First Aid -- cool person immediately, move to shade or indoors, wrap in a cool, wet sheet, get medical assistance
- Without Intervention -- it can lead to confusion, coma, and **death**.

Attachment D

LOCAL CHECKLIST FOR EXTREME HEAT/COLD

Typical local government EOC activation in response to an excessive heat/cold related event is found in Section 2 of this Annex.

Suggested tasks associated with these functions are shown in the illustration below with the understanding that this is just an example/recommendation since **not every county/ local area** is structured the same.

Department/ Agency	Responsibility
Office of Emergency Management (Local OEM)	Emergency Management
Local OEM	Planning/Intelligence
Executive Officer Designee	Public Information
Local Welfare / Parks and Recreation / Community Development (coordinate with American Red Cross)	Care & Shelter (Coordinate with volunteer, non-profit organizations, vulnerable populations reps.)
County Public Information Officer (City P.D.)	Emergency Notification
County Sheriff/Coroner	Law Enforcement/Coroner Operations
Public Works / Dept. of Transportation (supplemented by School Districts)	Transportation
County Health Department	Public Health (Coordinate with volunteer, non-profit organizations, vulnerable populations reps.)
Emergency Medical Services Agency	Emergency Medical Services
Local Animal Control/ County Agriculture Commissioner	Agriculture Livestock (including pet issues)

LOCAL GOVERNMENT Checklists

The following represents some actions that if undertaken, should assist local governments in addressing heat/cold related emergencies. **This checklist is not prescriptive, but only suggestive and by no means** an exhaustive list. Each local government may have changes and/or additions to make to adapt it to their jurisdiction. Local preparedness efforts must be coordinated across levels of local government, within the SEMS framework.

Seasonal Approach

Seasonal preparedness efforts should always be incorporated appropriately.

Subsequent phases for an excessive heat wave are listed below:

- Seasonal Readiness
- Increased Readiness Phase
- Phase 1 – Heat/Cold Alert
- Phase 2 – Heat/Cold Emergency

Local Guidance for Phase I – Seasonal Readiness

Local Activity	Responsible Dept./Agency *(Suggestive)*	Completed (✓)
Planning Establish "working group" consisting of those agencies/ departments, private, volunteer and service organizations, faith-based groups to identify the vulnerable populations and develop a strategy for notification and emergency actions to include establishing cooling/warming facilities and transportation. Determine local activation levels of a heat/cold emergency plan utilizing the activation levels and phases indicated in this document and local weather conditions and climatic variations, Develop a plan for coordinating in-home visits to vulnerable populations with volunteer and service groups.	- Emergency Management - Administration - Public Health - EMS Medical Director - National Weather Service - Local pollution control agency	
Awareness • Volunteer and service organizations, private sector, faith based organizations, medical and care facilities, schools representatives, law enforcement and fire personnel and other representatives to determine the location of vulnerable populations and determine needs. • Local agencies collaborate to identify any anticipated needs or problems. • Develop public safety materials that include posters, flyers, public media announcements. • Establish processes to rapidly disseminate heat advice to vulnerable populations in a timely manner through service groups, CERT, disability organizations, care providers, medical and health facilities, workplaces, schools, public facilities and private industries. Ensure compliance with program accessibility for deaf persons via captioning or sign language interpretation by all broadcasters for all emergency messages. • Consider utilizing current grant funding (i.e., EMPG, Homeland Security) to develop 2-1-1 capability and reverse 911 system with TTY/TDD capabilities to contact persons with disabilities, including text paging for the deaf and hard of hearing. • Conduct "Heat/Cold Awareness" fairs and exercise heat plans. • Identify and stockpile key resources such as generators, water	- Public Information - Emergency Management - Law Enforcement - Fire Services - Medical/Health - Community Development	
Cooling/warming Facilities. • Identify facilities that can be used for cooling/warming centers and contact facility owners. It may be helpful to coordinate with local chambers of commerce, public agencies and the CDFA and other state agencies with facilities in the area to identify Cooling/Warming Centers • Coordinate with local utilities to identify buildings best suited for cooling/warming stations that would not be subject to rotating blackouts. • Provide points of contact for initiating cooling/warming center operations, if necessary. • Develop criteria for cooling/warming facilities keeping in mind to consider accommodations for pets and possible 24 hour	- Emergency Management - Health and Welfare - Community Development - Parks and Recreation	

Local Activity	**Responsible Dept./Agency *(Suggestive)***	**Completed (✓)**
operations. *(Cooling/Warming **Stations**, e.g., hospitals, **ARE** exempt from rotating blackouts.* *Cooling/Warming **Centers** are **NOT** exempt from rotating blackouts.* *There is no clearly defined criteria for Cooling/Warming Centers.* ***Check with local utilities for information/process about exempting local identified Cooling/Warming Centers.)***		
Transportation • Develop a transportation working group consisting of public, private, volunteer and service organizations to identify and develop a transportation component and procedures to ensure vulnerable populations are provided transportation to cooling/warming stations. • Identify and coordinate procedures, including memoranda of understanding, to ensure transportation is available for those in need of cooling/warming centers.	- Emergency Management - Public Works - Emergency Medical Services - Transit providers	

Local Guidance for Phase II – Increased Readiness

Local Activity	Responsible Dept./Agency *(Suggestive)*	Completed (✓)
Awareness • Volunteer and service organizations, private sector, faith based organizations, medical and care facilities, schools representatives, law enforcement and fire personnel are put on notice to be prepared to contact l vulnerable populations. • Local agencies collaborate to identify any unanticipated needs or problems. • Develop any additional public safety materials that include posters, flyers, and public media announcements. • Disseminate heat advice to vulnerable populations in a timely manner through the local emergency alert systems, service groups, CERT, California Service Corps (CSC), disability organizations, care providers, medical and health facilities, workplaces, schools, public facilities and private industries. Ensure compliance with program accessibility for deaf persons via captioning or sign language interpretation by all broadcasters for all emergency messages	- Public Information - Emergency Management - Law Enforcement - Fire Services - Medical/Health - Community Development	
Cooling/Warming Facilities • Ensure that the facilities identified for cooling/warming centers and cooling/warming stations will be available. • Confirm the points of contact for cooling/warming center and cooling/warming station operations. • Identify the services provided at the cooling/warming facilities keeping in mind to consider accommodations for pets and possible 24 hour operations. • Coordinate with the local electric utility to identify and develop procedures for the operations of volunteered "cooling/warming centers" that could be exempted from rotating blackouts. *Cooling/warming **Stations**, e.g., hospitals, **ARE** exempt from rotating blackouts.* *Cooling/warming **Centers** are **NOT** exempt from rotating blackouts. There is no clearly defined criteria for Cooling/warming Centers.* ***Check with local utilities for information/process about exempting local identified Cooling/Warming Centers.)***	- Emergency Management - Health and Welfare - Community Development - Parks and Recreation	
Transportation Notify private, volunteer and service organizations involved in the transportation component and procedures to ensure availability to transport vulnerable populations to cooling/warming facilities. Ensure that coordinate procedures, including memoranda of understanding, are in place to ensure transportation is available for those in need of cooling/warming centers.	- Emergency Management - Public Works - Emergency Medical Services - Transit providers	

Local Activity	Responsible Dept./Agency *(Suggestive)*	Completed (✓)
Other • Identify heat/cold emergency actions that will require emergency regulations or ordinances. • Ensure there is a program for in-home visits to vulnerable populations with volunteer and service groups. • Identify and stockpile key resources such as generators, water.	- Emergency Management - City Attorney/County Counsel - Care & Shelter coordinators and staffs	

Local Guidance for Phase III – Heat/Cold Alert

Local Activity	Responsible Dept./Agency *(Suggestive)*	Completed (✓)
Send heat/cold related notifications to CA State Warning Center (CSWC)	Emergency Management	
Local Public Information Officer (PIO) notifies CALOES Regional Administrator who contacts CalOES PIO to distribute to the impacted OAs heat/cold emergency pre-scripted educational materials specific to the heat event at hand.	- Public Information Officer	
Distribute information specific to the heat/cold event at hand to local jurisdictions.	- Public Information Officer	
Cities and counties should begin activating pre-identified Cooling/warming Centers and work with volunteer groups to identify additional Cooling/Warming Centers that may be needed.	Emergency Management Health and Welfare Medical and Health facilities	
Enter Cooling/Warming Center information into the appropriate Web Portal on the CalOES website for public availability.	CalOES OA OEM	
Activate Heat/Cold Emergency Plan	- Emergency Management	
Release pre-scripted heat/cold protective measures to all media sources	- Public Information Officer	
Activate telephone heat/cold hotlines.	- Public Information Officer	
Alert neighborhood volunteer groups, volunteer and service groups, CERT, disability organizations, social services agencies, medical facilities and care homes.	- Emergency Management	
Activate cooling/warming centers and direct public buildings to provide cooling/warming facilities to those in need as appropriate.	- Utilities - Health and Welfare - Medical and Health facilities	
Coordinate and brief all emergency responders on actions to be undertaken and responsible departments/agencies.	- Emergency Management	
Coordinate with local utilities to assess power restrictions or limitations.	- Emergency Management	
Activate transportation resources to assist those without transportation get to cooling/warming facilities.	- Care and shelter organization and staff	
Direct public buildings to provide cooling/warming facilities to those in need.	- Care and shelter organization and staff	
Request mutual aid as needed through SEMS if weather forecast indicates a heat/cold emergency may be imminent.	- Emergency Management	
Activate EOC to the extent necessary.	- Emergency Management	
Establish regular public official briefings to include weather updates and actions taken and planned.	- Emergency Management	

Local Activity	Responsible Dept./Agency *(Suggestive)*	Completed (✓)
Schedule regular reporting and monitoring procedures with cooling/warming facilities, volunteer and service organizations, utilities, public safety, medical facilities.	- Emergency Management	
Utilize cooling/warming center website to notify the public of locations and hours of operation.	- Emergency Management	
Determine whether or not to declare a local emergency (or public health emergency) based on conditions or projected conditions.	- Governing Body with recommendation from: - Emergency Management - Public Health	
Consider reductions in energy usage in local public buildings and reduced hours of operations that would not impact the cooling/warming facility operations.	- Emergency Management	
Monitor power usage.	- Utilities	
Consider activation of Emergency Operations Center.	- Emergency Management	
Activate "hot line" for public information.	- Public Information Officer	
Implement a method to track heat/cold-related deaths and medical emergencies associated with the heat/cold event.	- Law Enforcement - Medical Officer	
Ensure all employees review and update their home emergency plans.	- Emergency Management - Personnel/Human Resources	

Local Guidance for Phase IV – Heat/Cold Emergency

Local Activity	Responsible Dept./Agency *(Suggestive)*	Completed (✓)
Monitor and determine need for more cooling//warming facilities and resource needs.	- Emergency Management - Care and Shelter	
Activate EOC	- Emergency Management	
Establish regular media releases.	- Public Information Officers	
Track heat/cold related fatalities and medical emergencies.	- Law Enforcement - EMS Medical Director	
Prioritize public offices that should remain open and close others to conserve energy.	- Emergency Management - Buildings and Grounds - Public Officials	
Issue targeted heat/cold advisories to vulnerable populations through all sources.	- Public Information - Public Health Officer - EMS Medical Director	
Monitor cooling/warming facilities providing regular updates on numbers of persons at each, disability-related needs, support issues, power availability.	- Emergency Management - Care and Shelter	
Coordinate activities with Operational Area and neighboring jurisdictions. If Operational Area coordinate with CALOES Regional providing information updates, resource assessments and mutual aid requests.	- Emergency Management	
Declare emergency (local and/or public health) as appropriate.	- Governing body or Health Officer, if so authorized	
Identify any regulatory or ordinance issues that may need to be suspended.	- Emergency Management - County/City Counsel	
Establish regular briefings with the National Weather Service.	- Emergency Management - Public Health - EMS Medical Director - Care and Shelter	
Ensure all fleet vehicles fuel tanks have ample fuel in the event of power failure.	- Public Works	
Ensure employees have updated heat/cold emergency materials and methods for checking on family members.	- Emergency Management - Personnel/Human Resources	
Continuously review and update emergency resource inventories.	- Emergency Management - Resource Management	

Local Activity	**Responsible Dept./Agency** ***(Suggestive)***	**Completed (✓)**
Ensure pet and animal heat/cold impacts are being addressed through special facilities or pet accommodation at cooling/warming facilities.	- Emergency Management - Animal Control - Agriculture Officer	
Request state activation of state emergency cooling/warming facilities (fairgrounds, etc.) in the vicinity as needed.	- Emergency Management - Care and Shelter - Utilities - Medical/Health facilities	
Survey emergency resources and facilities to determine replenishment needs.	- Emergency Management - Resource Management	
Notify Ambulance providers and hospitals to expect and prepare for surge in heat/cold-related illnesses.	- Local EMS Agency	
Maintain regular reports to the Operational Area or CALOES Region if Operational Area.	- Emergency Management	
Track heat/cold related fatalities and medical emergencies.	- Law Enforcement - EMS Medical Director	

Attachment E

LOCAL CHECKLIST FOR REPORTING SEVERE WEATHER

The following is a list of types of weather observations that are critical to National Weather Service.

Tornadoes
Funnel Clouds
Wall Clouds
Hail
Damaging Winds
Flooding
Dam Breaks
Rainfall Amounts
Damage Reports
Ice or debris dams in local waterways
Observed snowfall of 1 inch or more for an event

Please report the following information to National Weather Service – Sacramento (916) 979-3049				
Precipitation	☐ **Inches**	☐ **Rain**	☐ **Sleet**	☐ **Mixed**
Hail	☐ **1/10 Inch (BB)** ☐ **¼ Inch (Pea)** ☐ **½ Inch** ☐ **¾ Inch (Penny)** ☐ **1 Inch (Quarter)** ☐ **1¼ Inches (Half Dollar)** ☐ **1½ Inches (Golf Ball)**		☐ **2 Inches** ☐ **2½ Inches (Tennis Ball)** ☐ **3 Inches (Baseball)** ☐ **3½ Inches** ☐ **3¾ Inches (Softball)** ☐ **4 Inches or Larger** ◉ **None**	
Snow	**Snowfall**	**Snowfall Start Date**	**Snowfall Start Time**	**Snow Depth on Ground**
	Liquid Equivalent	**Snowfall End Date**	**Snowfall End Time**	
Wind	**MPH**	☐ **Estimated** ☐ **Measured**		

Observed Weather	☐ **Tornado/Funnel Cloud**	☐ **Flooding**
	☐ **High Winds**	☐ **Flood Damage**
	☐ **Wind Damage**	☐ **Ice or Debris Dam**
	☐ **Precipitation Report**	☐ **Other Damage**
	☐ **Snow Report**	☐ **Other Weather Observations**

NOTES

1. This information should be coordinated with the Emergency Operations Center or the Incident Commander.

2. Identify the appropriate contact and ensure information flows through a single point of contact (PIO, Plan & Intel Section) to minimize duplication reporting and inaccuracies.