OFFICE OF EMERGENCY SERVICES

LAKE COUNTY SHERIFF'S OFFICE

2021

LAKE OPERATIONAL AREA

Lake County Emergency Operations Plan

Extreme Weather Annex

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For

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I. EXTREME WEATHER

General

This contingency plan specifically addresses the entire spectrum for support operations and functions related to extreme weather conditions from relatively minor incident(s) to a large-scale disaster impact. A buildup or warning period may precede some impacts, providing sufficient time to warn the public and implement mitigation measures designed to reduce loss of life, property damage, and effects on the environment. In some cases, a situation may occur with little or no advance warning, thus requiring immediate deployment, coordination and mobilization of resources. All departments and agencies of the County must be prepared to promptly and effectively respond to extreme weather conditions, taking all appropriate actions, including requesting and providing mutual aid.

1. CONCEPT OF OPERATIONS

The National Weather Services (NWS) Eureka Weather Service Forecast Office is responsible for weather forecasting of the Northern California coastal zone, which includes the Lake County Operational Area (OA).

The National Weather Service is in the process of revising its messaging terminology to better describe the hazard and recommended actions. This documents reflects those changes.

a) **Watch:** A watch means that conditions are favorable for the pending threat to occur within the watch area between 1 and 24 hours. Upon receipt of an issued watch, all county departments, cities, state and federal agencies that have operational responsibilities in Lake Operational Area are notified of the pending threat. County departments are responsible to prepare for the possible impact.

b) **Warning:** A warning means that the threat is occurring or is about to occur with immediate impact between 0 and 8 hours. Upon receipt of a warning, Lake County departments, Cities, State, and Federal agencies should take immediate action to prepare their facilities and staff for the warned event. If a severe threat to Lake County occurs, the NWS will use IPAWS to activate the Emergency Alert System and Wireless Emergency Alerts (WEA), and generate NOAA WeatherRadio Alerts for the affected area. Local radio and television stations with Emergency Alert Systems (EAS) capabilities will release prepared Public Information Sheets as requested by the Operational Area.

NWS Eureka will begin to include enhanced wording for extremely windy and low relative humidity fire weather situations. We will use the phrase "**Particularly Dangerous Situation**" to amplify *exceptional* Red Flag Warning events as of today. The objective is to heighten public and fire agency awareness for rare fire weather situations that typically occur once every few years (but could happen more frequently in a period of extreme dryness) which can lead to very extreme fire danger and unusually rapid fire spread.

2. Purpose

The purpose of this Annex is to establish priorities, identify responsibilities and assign tasks with respect to coordinated response operations in mitigating effects upon property, life and the environment during severe weather situations in the Lake Operational Area (OA). This contingency plan addresses Extreme weather and Storm Emergencies dealing with Flooding, Flash Flooding, Landslides, Mud Flows, Dam Failures, Drought Conditions, and Weather Caused Energy Shortages.

3. Special Situation

The Lake Operational Area is susceptible to extreme weather, storm conditions and drought conditions. Extreme weather/storm conditions is a generalized term used to describe thunderstorms, tornadoes, heavy precipitation, high winds, extreme heat or cold, and drought. Extreme weather may cause a variety of damage, depending upon the type of weather situation. Damage may range from temporary power and utility outages due to wildland fire and high wind activity to the sometimes, although rare, destruction from an earthquake or volcanic eruption. Extreme weather such as a drought can have long-term economic repercussions and water shortage conditions.

a) Flooding/Flash Flooding

Clear Lake is a 68 square mile natural lake with a 100 mile rim laced with communities. The lake is fed by natural springs, and is the catchment for over 458 square miles of watershed and secondary blue line streams. The region is laced with numerous streams, creeks and drainages that are impacted by an average rainfall ranging from more than 60 inches per year at ridge tops to 28 inches per year at the lake level. These creeks and waterways are usually subject to some form of flooding during the annual wet winter rain season. The degree of flooding is dependent upon topography, vegetation, the duration and intensity of rain and consequent storm water runoff. Winter storms can generate heavy rainfall action along the coastal mountainous areas. Lake County is fairly broad, with extensive low lands, which includes portions of the City of Lakeport. Extensive floodplains are along Scotts, Cache, Adobe, Putah, Cole, Middle, Copsey, and Kelsey Creeks. Generally, Clear Lake rises freely during heavy winter storms, sometimes causing damaging floodwaters.

Community detention and diversion structures are vulnerable when the Clear Lake level rises above 7.56' feet at the Rumsey Gage. These structures include sanitation district ponds and levees.

b) Middle Creek Levees

Located on Middle Creek, Scotts Creek, Clover Creek and Rodman Slough near Upper Lake, the levees are earthen structure and are at risk once the lake reaches 7.53' Rumsey. Once the lake reaches 9.0' Rumsey, emergency approval should be requested

from the Board of Supervisors to create an emergency spillway, and reclamation property owners and operators should be notified. At 10.0' Rumsey residents should be notified to prepare for evacuation in the event of a breach or overflow. Failure of these levees would inundate approximately a 1750 acre area that has multiple residences and could require or cause closure of the Nice-Lucerne cutoff and State Highway 20.

c) Wastewater Treatment Facilities

Wastewater generated in urban areas is principally treated at public wastewater treatment plants; however, septic systems are used in rural and some residential areas where wastewater treatment systems are not economically feasible. Wastewater treatment systems have the potential to contaminate surface water as a result of direct discharge, exfiltration, storm-induced overflows, and accidents or equipment failures. There are eighteen wastewater systems within the Clear Lake watershed, including nine sewage treatment systems, which are designed to collect treat and dispose of municipal wastewater without discharge to any surface water. Wastewater treatment facilities are impacted by high lake levels, as the collection systems for lakefront developments become inundated, resulting in significant inflow to the systems. Discharge of raw and treated wastewater is prohibited within the Clear Lake Basin. This results in overloading pumping facilities and storage reservoirs causing overflows into tributaries of Clear Lake. The three treatment facilities near the lake within the County's jurisdiction, which are vulnerable, include:

i. Northwest Wastewater Treatment Facility

Lyon's Creek reservoir contains reclaimed wastewater from the Northwest Regional Wastewater Facilities located about 1.5 miles northwest of the city of Lakeport and is 1.7 miles from Clear Lake. Access is from Highway 29 west of the City of Lakeport. The dam is an earth structure on a tributary to Lyons Creek and Clear Lake. The reservoir is emptied each summer by irrigating surrounding pasturelands. During the annual rainy season, treated and disinfected wastewater is stored in the reservoir until irrigation can resume. The capacity of the reservoir is 870 acre-feet. Sixteen pumping stations serve this facility, all which are subject to lake or high groundwater inundation. Additionally, during heavy inflow several pumping stations from the Lakeport Municipal District can reroute their wastewater to this facility in order to prevent their facility from overflowing.

ii. Southeast Wastewater Treatment Facility

Burns Valley reservoir contains reclaimed wastewater from the Southeast Regional Wastewater Facilities located 1.5 miles northeast of Clear Lake just outside the boundary line of the City of Clearlake. Access is from Highway 53 north of the City of Clearlake. This reservoir is an earth structure on a tributary to Burns Valley creek and Clear Lake. The reservoir is emptied each

summer by irrigating surrounding pasture lands. During the annual rainy season, treated and disinfected wastewater is stored in the reservoir until irrigation can resume. The capacity of the reservoir is 560 acre-feet.

iii. Kelseyville Wastewater Treatment Facility

Extensive groundwater saturation will cause the Kelseyville Treatment reservoirs to become inundated with groundwater intrusion. That Intrusion has caused the reservoirs to overflow into the spillway causing discharge to partially treated wastewater into the Clear lake watershed. The facility is located on Gaddy Road near the intersection with Clark Drive in Kelseyville, approximately 2.5 miles from Clear Lake. The capacity of the reservoir is 65 acre-feet. The collection system served by eight lift stations near Clear Lake. Each lift station has an alarm system and a receptacle for emergency backup power.

iv. City of Lakeport Municipal Sewer District

The city of Lakeport operates a wastewater treatment plant on Parallel drive, southwest of downtown Lakeport The waste treatment plant is approximately 1.6 miles from Clear Lake. The wastewater collection system has nine pumping stations, three of which are located within 30 to 60 feet of Clear Lake. The pumping stations have alarms for occurrences such as pump failure, high water level, power failure, or communications failure. There have been system failures and discharges during high lake level floodwaters. Treated water is stored in a 650-acre foot reservoir during winter months.

v. Clearlake Oaks Water District

The Clearlake Oaks Water District operates a facility approximately 0.1 miles from Clear Lake on the eastern side of the lake. High lake water levels can have an impact on the facility during extreme weather months.

d) Landslides

Landslides include all movements of soil, rock or debris as a result of falling, sliding or flowing. The triggering cause may be heavy rainfall or seismic activity. An untimely occurrence of a large earthquake during or soon after a sustained period of moderate to heavy rainfall could produce a landslide problem of monumental proportions. Debris flows and associated storm-triggered landslides' have caused most of the deaths and much of the structural damage attributed to land sliding in California. Such incidents have occurred frequently in the past, and as growth and development place more people, more structures and more roadways in areas susceptible to landslides, the potential; destruction and cost of storm related landslides becomes greater and greater. During severe storm activity, debris avalanches and debris flows may be triggered in both rural and urban areas, smashing

structures, blocking roads, severing utilities and water supply, and injuring or killing people. Damage control and disaster relief may be required from local agencies, private organizations, and state and federal governments. Emergency operations may be seriously hampered by closure of major highways and main roads and loss of communications. Evacuation of dangerous areas may be necessary. Extensive efforts may be required to rescue trapped persons, recover bodies, remove debris, assist in reestablishing vital public services and utilities, and offer continuing care and shelter to affected persons. Lake County lies with contrasting topographic settings: Steep hills and ridges. The hills and ridges to the southeast are characterized by very steep slopes and by sharp differences in the strength and stability of the geological materials underlying the surface soils. These differences are generally expressed by the lack or presence of landslide deposits, which are widely but unevenly distributed on the slopes. Most landslide damage has taken place within pre-existing landslide deposits. Lake county could be isolated if State Highways 20, 175, and 29 were impacted by landslides or large debris flows. Landslides constitute one of the principal hazards to structures, roads, and utilities. A typical soil debris avalanche in Lake County involves a few hundred cubic yards of soil and colluvium and is the result of total saturation.

e) Dam- Reservoir Failure

Dam or Reservoir failures can result from a number of natural or manmade causes such as earthquakes, erosion of the face or foundation, improper sittings, rapidly rising floodwaters, and structural/design flaws. Seismic activity may also cause inundation by the action of a seismically induced wave that overtops the dam without causing failure of the dam, but significant flooding downstream. The major dams, reservoirs and diversion levees in Lake County with high inundation zones are:

Dam Name:	Cache Creek Dam
Lake Owner:	Clear Lake
Dam Owner:	Yolo County Flood Control & Water Conservation District
Telephone:	1-530-662-0265
Capacity:	350,000 Acre Feet
Height of Dam:	35 feet high – Concrete

The Cache Creek Dam is located 5 miles downstream of the outlet from Clear Lake. The dam is a concrete, gravity-type structure.

Dam Name:	Scott Dam
Lake Name:	Lake Pillsbury-Eel River
Dam Owner:	Pacific Gas & Electric (PG& E)
Telephone:	1-800-743-5000
Capacity:	93,724 Acre Feet
Height of Dam:	80 feet with a crest of 250 feet

Scott Dam is located on the upper Eel River in the Mendocino National Forest. The dam is a concrete structure. It can be reached through Potter Valley, Mendocino County or Elk Mountain Road from Upper Lake. Downstream zones include Mendocino County communities, and the Cities of Rio Dell, Fortuna and Ferndale in Humboldt County to the Pacific Ocean.

Dam Name: Indian Valley Dam
Lake Name: Indian Valley Reservoir
Dam Owner: U.S. Bureau of Reclamation
Telephone: 1-530-662-0265
Capacity: 300,000 Acre Feet
Height of Dam: 207 feet high with a crest of 965 feet

Indian Valley Dam is located approximately 5 miles north of Highway 20 between Clear Lake and Williams. It can be reached by Walker Ridge Road to the Chalk Mountain Area. The dam is an earthen structure, and is the largest dam in Lake County. Downstream zones include the Spring Valley Development. Cache Creek also flows into Yolo County populated areas.

Dam Name: Spring Valley Dam
Dam Owner: County of Lake
Telephone: 1-707-263-0119
Capacity: 325 Acre Feet
Height of Dam: 37 feet high

Spring Valley Dam is located approximately 4.7 miles north of Hwy 20 in the Clearlake Oaks community of Spring Valley. It is northwest for Wolf Creek and Chalk Mountain Road. The dam is an earthen structure and is located in Wolf Creek. Wolf Creek travels a short distance and flows into Cache Creek. Downstream zones include the Spring Valley Community.

Dam Name: Coyote Creek Dam
Dam Owner: Hidden Valley Lake Association
Telephone: 1-707-987-9201
Capacity: 3,300 Acre Feet

Coyote Creek Dam is located east of Highway 29, between the communities of Lower Lake and Middletown at the Hidden Valley Lake residential area. Downstream assets include residences, a shopping mall and an elementary school.

Dam Name: Highland Creek Dam
Dam Owner: County of Lake

Telephone: 1-707-263-0119
Capacity: 3,500 Acre Feet
Height of Dam: 75 feet high

Highland Creek Dam is located approximately 0.5 miles west of Adobe Creek Dam. The dam can be reached on Highland Springs Road, Bell Hill Road or the Old Toll Road. The dam is an earthen structure. Downstream zones include Adobe Creek areas and the community of Finley.

Dam Name: Adobe Creek Dam
Dam owner: Lake County Flood Control & Water Conservation District
1Telephone 1-707-263-2341
Capacity: 695 Acre Feet
Height of Dam: 36 feet high

Adobe Creek Dam is located northeast of Highland Springs Reservoir, and is accessible from Adobe Creek Road. Downstream zones include Adobe Creek areas and the community of Finley.

Kelsey Creek Detention Structure
The Kelsey Creek Detention Structure is a groundwater recharge facility located one mile north of Kelseyville. It can be reached from Finley East Road. Failure of the structure would result in a sudden surge in Kelsey Creek. However, overbank flows and flooding would not necessarily occur. The structure is normally open during high flow events.

f) Drought

Northern California has a long and varied history with drought years. Historically, 1976-77 has been considered the high mark in the last one hundred years. Economically, the drought years from 1988 through 1992 severally impacted agriculture operations and communities throughout Northern California. Result of prolonged drought can cause Domestic Water Shortage situations in several areas and communities in the Lake Operational Area.

In conjunction with the Lake County Special Districts office, the Lake County Sheriff's Office of Emergency Services has developed a draft mutual aid plan for the many water purveyors in Lake County. This plan and agreement are one of the first steps to addressing potential water shortages in Lake County.

During incidents that have impacts or require the attention of water providers, a representative from the water purveyors will be in the Emergency Operations Center.

g) Energy Shortage

Currently, there is no facility to distribute locally generated electrical power, nor is there major generating capacity. The electrical power generated by the geothermal fields in Lake County is fed into the regional power grid, and is significantly dependent on the ability to pump waste water into the ground.

During severe weather conditions wide spread power failure is a potential. Energy shortage has a potential impact on the Lake Operational Area. Disruption of current distribution systems for general petroleum products, natural gas and electricity can impose restrictions on the general community. Medical issues addressing life support systems, emergency generator power systems and general response systems can be hampered. Long-term power failure can affect heating systems, along with restrictions and loss of natural gas distribution systems. In the event of a major situation causing a long-term closure of State Highways 20, 29 and 175, and/or restrictions on available petroleum products for the consumer is imposed, daily community activities would come to a standstill.

Should an extended power outage affect the County, the EOC would coordinate with Pacific Gas & Electric & the Department of Social Services to identify critical facilities and those with durable medical equipment; to develop potential solutions and facilitate providing temporary power.

Priorities for power restoration:

i. Hospitals & Emergency Services Facilities
ii. Those dependent on durable medical equipment
iii. Petroleum Distribution Facilities
iv. Public Facilities (including water and sewer services)
v. Residential Service

4. Activation

The Lake Operational Area Emergency Services Manager shall activate this plan when the National Weather Service (NWS) has issued a watch or warning, and that impact is expected to severely impact Lake County. Likewise, activation of the plan will progress in three phases of operation as the emergency expands.

a) Increased Readiness

This phase will be initiated by the receipt of a warning, or the observation that an emergency situation is imminent or likely to occur soon. Actions to be accomplished during this phase include, but are not necessarily limited to:

Notify, review and update SOP's with Field Response Departments;

i. Public Works
ii. Law Enforcement
iii. Fire Services
iv. Medical Services
v. Public Health
vi. Red Cross
vii. Hazardous Materials possible release areas
viii. Evacuation Routes and Shelter Sites
ix. Commercial Utilities

And consider the following actions:

i. Activation of Emergency Notification Systems & IPAWS
ii. Increase Public Information efforts;
iii. Brief key officials on the situation;
iv. Review and distribute maps of flood inundation zones, problem areas, etc;
v. Inspect and test internal governmental communications systems, ACS, ARES, etc.;
vi. Inspect critical facilities and equipment;
vii. Inspect sand bag allocation system;
viii. Mobilize personnel and pre-positioning resources and equipment;
ix. Review and recruit additional staff and Disaster Service Works; and
x. Contact and coordinate with state and federal agencies that may become involved with field activities.

b) Initial Response

Lake County's initial extreme weather response activities are primarily performed at the field response level. Emphasis is placed on departmental response operations under the Incident Command System (ICS).

Priority will be given to the following operations:

i. Conduct evacuations and/or rescue operations.
ii. Make all necessary notifications, personnel, etc.
iii. Evaluate the situation to determine if the incident can be controlled without requesting resources from outside of the Lake Operational Area.
iv. Coordinate the dissemination of warnings, emergency public information, and instructions to citizens with Lake County Sheriff's Office of Emergency Services.
v. Coordinate and Implement precautionary evacuations in potentially impacted area(s).
vi. Restrict movement of traffic and people to closed affected areas.

vii. Identify potential release of hazardous materials into waterways, streams, rivers or other high impact areas.
viii. Mobilize personnel and pre-positioning resources and equipment.
ix. Issue sandbags and material as required through a documented tracking system.
x. Document all actions taken, Document all assigned personnel names and time cards.
xi. Develop a Department Incident Action Plan (IAP) and Implement the Incident Command System.
xii. Evaluate and coordinate a possible request for a Declaration of a Local Emergency with the Lake County Office of Emergency Services.
xiii. When departmental resources are committed to the maximum and additional resources are required, request for mutual aid will be initiated through proper channels and coordination with Lake Office of Emergency Services OES.
xiv. The county is either minimally impacted or not impacted at all, and is requested to provide mutual aid to other jurisdictions within the county, or to other communities.

c) Initial Response into Recovery

During and after initial response, and evaluation of losses, the Sheriff may Proclaim a Local State of Emergency, and further request State (CDAA) and Federal (Stafford Act) assistance. The Emergency Operations Center will assist in the transition to a "recovery mode."

i. If necessary, ratify and renew Local Proclamation.
ii. Ensure all emergency resources & services are returned to pre-incident services.
iii. Conduct initial damage assessment activities.
iv. Ensure services and material requests are stored for after-action analysis and potential cost-recovery activities.
v. Ensure time-sheets & mileage logs are appropriately completed.
vi. Assist departments and agencies with the scheduling of preliminary damage assessments.

5. Special Alert List

Governmental Agencies	Telephone
Sheriff's Office	262-4200/263-2690
Public Works Department	263-2341/994-8205
Countywide Fire Services (CalFire St. Helena)	963-4112
Emergency Medical Services	263-2690
Adventist Health-Clearlake	994-6486
Sutter Lakeside Hospital	262-5100
California Department of Forestry & Fire Protection	987-3089
California Highway Patrol- Kelseyville	279-0103/263-2690
California Department of Transportation (Cal/Trans)	463-4750
Clear Lake Oaks	998-3858
Lakeport	263-6848
U.S. Forest Service-Mendocino National Forest	279-0103/275-2361
Governor's Office of Emergency Services, Coastal Region	800-852-7550 / 916-845-8911

6. Public Warning/Alert and Notification

The Office of Emergency Services is responsible for public warning efforts during the preparedness phases of a disaster, as well as the alert and notification needs during a disaster response. The Public Information Officer (PIO) within the Command Staff of the County EOC is the representative within the OES staff who is responsible for public information efforts. With the approval of the EOC Director, the PIO will disseminate emergency messages to the public regarding preparedness measures to take, evacuation areas and routes (if applicable), emergency resources, measures that County OES is taking during the event; as well as recovery assistance information.