Sutter Butte Flood Control Agency: Flood Safety Plan

As required by CA Water Code Section 9650

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Abbreviations

CA DWR	California Department of Water Resources
Cal Fire	California Department of Forestry and Fire Protection
Cal OES	California Office of Emergency Services
Caltrans	California Department of Transportation
CB	Citizens' band
CCC	California Conservation Corps
CDEC	California Data Exchange Center
CERT	Community Emergency Response Team
CESRS	California Emergency Services Radio System
CLEMARS	California Law Enforcement Mutual Aid Radio System
CLERS	California Law Enforcement Radio System
CNG	California National Guard
CNRFC	California-Nevada River Forecast Center
CPSCS	Consolidated Public Safety Communications System
EAS	Emergency Alert System
EDIS	Emergency Digital Information Service
EMS	Emergency Management System
EOC	Emergency Operations Center
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FOC	Flood Operations Center
GPS	Global Positioning System
IC	Incident Commander
ICP	Incident Command Post
ICS	Incident Command System
IPAWS	Informational Public Alert Warning System
JIC	Joint Information Center
LD	Levee District
LMA	Local Maintaining Agency
NWS	National Weather Service
OA	Operational Area (County)
OASIS	Operational Area Satellite Information System
OES	Office of Emergency Services
PIO	Public Information Officer

PL 84-99	Public Law No. 84-99 (1984), the law that gives the Corps of Engineers authority for emergency management activities
PSAP	Public Safety Answering Point
RACES	Radio Amateurs Civil Emergency Services
RD	Reclamation District
REOC	Cal OES's Regional Emergency Operations Center
SBFCA	Sutter Butte Flood Control Agency
SEMS	Standardized Emergency Management System
SOC	Cal OES's State Operations Center
USACE	US Army Corps of Engineers

1 Introduction

In this chapter:

- The purpose and scope of this Flood Safety Plan.
- This Flood Safety Plan's relationship to the Butte County Operational Area Emergency Operations Plan, Sutter County Operational Area Emergency Operations Plan, and other plans.

1.1 Purpose of this Flood Safety Plan

This document is the Sutter Butte Flood Control Agency's (SBFCA) Flood Safety Plan. It: (1) enhances the ongoing flood emergency response planning and preparedness activities of SBFCA and its constituent agencies; and (2) satisfies the requirements of California Water Code Section (WC Sec.) 9650, as amended by Assembly Bill (AB) 156 (2007).

1.1.1 Enhanced flood emergency response planning

This Flood Safety Plan describes SBFCA's planned response to large-scale regional flood emergencies caused by levee failure or dam failure. (This type of flood event is referred to as a "flood emergency" in the remainder of this Flood Safety Plan.) The plan reflects the implementation of the California Standardized Emergency Management System (SEMS). When used in conjunction with the California Emergency Plan and other local emergency plans, it will facilitate multi-agency and multi-jurisdictional coordination among SBFCA, its constituent agencies, and state agencies in flood emergency operations.

1.1.2 Compliance with Water Code Section 9650

WC Sec. 9650 requires:

Commencing July 1, 2008, the allocation or expenditure of funds by the state for the upgrade of a project levee, if that upgrade is authorized on or after July 1, 2008, that protects an area in which more than 1,000 people reside, shall be subject to the requirement that the local agency responsible for operations and maintenance of the project levee and any city or county protected by the project levee, including a charter city or charter county, enter into an agreement to adopt a safety plan within two years.

SBFCA's Early Implementation Project contract with the California Department of Water Resources requires SBFCA to have a Flood Safety Plan, as SBFCA is using state funds to upgrade a Project levee (the levee on the west bank of the Feather River). (A Project levee is part of the State Plan of Flood Control.)

State Plan of Flood Control
The State Plan of Flood Control is all of the facilities, lands, programs, conditions, and modes of operation and maintenance of the state-federal flood protection system in the Central Valley.

WC Sec. 9650 requires a flood safety plan to have the following minimum contents:

- A flood preparedness plan that includes storage of materials that can be used to reinforce or protect a levee when a risk of failure exists.
- A levee patrol plan for high water situations.
- A flood-fight plan for the period before state or federal agencies assume control over the flood fight.
- An evacuation plan that includes a system for adequately warning the general public in the event of a levee failure, and a plan for the evacuation of every affected school, residential care facility for the elderly, and long-term health care facility.

- A floodwater removal plan.
- A requirement, to the extent reasonable, that either of the following applies to a new building in which the inhabitants are expected to be essential service providers:
    - The building is located outside an area that may be flooded.
    - The building is designed to be operable shortly after the floodwater is removed.

SBFCA has developed this Flood Safety Plan to satisfy the requirements of WC Sec. 9650. Table 1 shows where in this document each of the above requirements is located.

Table 1. Where Water Code Section 9650 requirements are addressed in this Flood Safety Plan

Requirement	Chapter in this Flood Safety Plan
Flood preparedness plan that includes storage of materials	Chapter 6—Availability of flood fight equipment and supplies
Levee patrol plan	Chapter 7—Feather River West Levee patrol programs
Flood-fight plan	Chapter 8—Flood fighting within SBFCA's boundaries
Evacuation plan	Chapter 9—Evacuation and sheltering for a flood emergency within SBFCA's boundaries
Floodwater removal plan	Chapter 10—Floodwater removal within SBFCA's boundaries
Building requirements	Chapter 11—Essential Services Building requirements of SBFCA's member agencies

1.2 Scope of this Flood Safety Plan

This Flood Safety Plan describes SBFCA's response role in a flood emergency. The plan's content may, but does not necessarily, apply to localized flooding from other causes such as ponding as a result of intense rainfall.

This Flood Safety Plan focuses on SBFCA's response to a flood emergency within its boundaries. SBFCA is not a levee maintaining agency; it has no direct responsibility for flood fighting on the levee or in the floodplain. Nevertheless, it will be essential for SBFCA officials to be aware of the activities occurring on the levee and in the floodplain, and WC Sec. 9650 requires a description of activities on the levee such as levee patrol and floodfighting. Therefore, when appropriate, this plan describes flood emergency response activities that other agencies are responsible for accomplishing.

1.3 Relation to city and county emergency operations plans

This Flood Safety Plan works in conjunction with the emergency operations plans of the counties, cities, and levee districts that belong to SBFCA: Butte County, Sutter County, Biggs, Gridley, Live Oak, Yuba City, Levee District One, and Levee District Nine. This Flood Safety Plan seeks to avoid duplication among plans. Therefore, if a topic is covered well in the plan(s) of one or more other agencies, it is referenced but not duplicated here.

1.4 Plans that govern or influence flood emergency response within SBFCA's boundaries

Emergency response plans that govern or influence flood emergency response within SBFCA's boundaries include:

- State of California Emergency Plan (2009).
- State of California Governor's Office of Emergency Services, Guidelines for Coordinating Flood Emergency Operations (1997).
- Butte County Operational Area Emergency Operations Plan (2011).
- Sutter County Operational Area Emergency Operations Plan (2011).
- City of Biggs Emergency Operations Plan (2013).
- City of Gridley Emergency Operations Plan (2013).
- City of Live Oak Emergency Operations Plan (DRAFT) (2015).
- Levee District One Flood Safety Plan (2011).
- Levee District Nine Flood Safety Plan (DRAFT) (2015).

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2 Overview of flood risk within SBFCA's boundaries

In this chapter:

- Potential sources of flooding within SBFCA' boundaries.
- History of high water events in the Sutter Basin and history of the Feather River West Levee.
- Expected levee performance and residual risk.
- Routine levee inspections, maintenance, and emergency preparedness.
- Required Levee Maintaining Agency (LMA) reporting.
- Sources of information about critical facilities and localized/stormwater flooding.

2.1 Potential sources of flooding

2.1.1 Overview

The communities within SBFCA's boundaries are protected by the levee on the Feather River's west bank. Potential sources of flooding in this area are Feather River levee failure, dam failure, and heavy precipitation exceeding the capacity of a given community's storm water drainage system.

The Butte County Multi-jurisdictional All Hazard Pre-Disaster Mitigation Plan (Hazard Mitigation Plan) characterizes the county's flood hazard as (1) likely to occur; (2) of significant spatial extent; (3) potentially catastrophic in magnitude; and (4) with a high overall significance.

The Sutter County Local Hazard Mitigation Plan (2013) characterizes three types of flood hazard in the county as follows:

Table 2. Three types of flood hazard in Sutter County (Sutter County LHMP, 2013)

Hazard	Geographic extent	Probability of future occurrences	Magnitude/ severity	Significance
100/500-year floods	Extensive	Occasional	Catastrophic	High
Localized storm water flooding	Limited	Highly likely	Limited	Medium
Levee failure	Extensive	Occasional	Critical	High

2.1.2 Extreme wet season storm events

Periodic wet season storm events (particularly rain-on-snow events such as the occurrence of atmospheric rivers) have the potential to cause extremely large releases from Oroville Dam. These releases could, in turn, cause Feather River levees to fail or overtop.

One such event occurred in the winter of 1996-1997. The California Nevada River Forecast Center website has a detailed description of the 1996-1997 precipitation event at http://www.cnrfc.noaa.gov/storm_summaries/jan1997storms.php.

2.1.3 Oroville Dam failure

Oroville Dam is located at the mouth of the Feather River Canyon. At 770 feet tall and 6,920 feet long, Oroville Dam is one of the largest 20 dams in the world and impounds the second largest reservoir in California. It is the tallest dam in the United States. Lake Oroville has a capacity of 3.5 million acre feet and is the principal water storage facility of the State Water Project (City of Oroville 2009).

Failure of Oroville Dam could result in release of water held behind the dam, and inundation of areas downstream. A major seismic event would be the most likely cause of dam failure. A number of geologic faults have been mapped in the Oroville area which could cause a seismic event. However based on studies of the dam following the 1975 Oroville earthquake, the dam could withstand a 6.5-magnitude earthquake, which is considered to be the largest credible event projected for the region (City of Oroville 2009).

In addition to failure of Oroville Dam itself, failure of any of the three structures that comprise the Thermalito complex—Thermalito Diversion Dam, Thermalito Forebay Dam, and Thermalito Afterbay Dam—could also cause inundation within SBFCA's boundaries.

Oroville Dam is characterized as a "high hazard" dam because, although probability of failure is small, risk to life in the event of failure is high (USACE National Inventory of Dams).

2.2 History of high water events in the Sutter Basin and history of the Feather River West Levee

Prior to 1850, the Feather and Sacramento rivers frequently topped their natural banks in a cycle of seasonal flooding. In the mid-1850s, sediment from hydraulic mining caused river beds to rise. The Feather River West Levee was originally constructed in the 19th century by local interests to try to combat the resulting flooding.

The levees protecting the Sutter Basin have been subjected to several high water events that led to repeated performance problems, including levee breaks in 1907, 1909, 1914, and 1955. In the 1955 flood the water level was approximately 21 feet high on the levee at the southern end of Yuba City, and at least 38 people lost their lives in that event (SBFCA 2009). The flood of 1986 nearly failed the levee, and the Yuba River south levee did fail, resulting in rapid drawdown of water levels in the Feather River. During the 1997 New Year's flood, widespread flood fighting was necessary at and downstream of the 5th Street Bridge in Yuba City.

Beginning in the 1990s, several studies conducted by the US Army Corps of Engineers (USACE), California Department of Water Resources (CA DWR), and SBFCA evaluated the condition of the levees protecting the Sutter Basin relative to criteria for stability, seepage, erosion, geometry, and levee height. These studies indicated that the levee system was deficient based on several geotechnical criteria and that the consequences of levee failure from a major storm event would be significant. Further evaluation demonstrated that much of the existing system did not provide protection from the 100-year event, the commonly accepted minimum level of flood protection required by the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP), as well as being less than the 200-year level targeted by the State of California for urban areas. In addition, an emergency preparedness mapping study analyzed hypothetical levee failures and determined the rate and depth at which water would flood the Sutter Basin if a levee failure occurred in the study reaches. This study predicted flooding depths that could range from about 1 foot to more than 20 feet in some areas (ICF 2012). These studies were the impetus for SBFCA's Feather River West Levee Project (FRWLP).

The FRWLP comprises a phased rehabilitation of the Feather River West Levee from Thermalito Afterbay to nearly the confluence of the Feather River and the Sutter Bypass (41 miles).

2.3 Expected levee performance and residual risk

Completion of the FRWLP, expected in 2015, will increase the level of protection for communities within SBFCA's boundaries. However, it is important to realize that "no matter how much protection is provided, areas within the natural floodplains of rivers and streams will always face some flood risk" (CA DWR website). Once the FRWLP is completed, it will be designed to provide protection to the urban and urbanizing areas on the west side of the Feather River against the flood event with a 1 in 200 (0.5%) chance of occurring in any given year. (This flood event is also described as having an annual exceedance probability of 0.005 or the 200-year flood.)

CA DWR is developing several resources that can assist in the evaluation of flood risk in the Sutter Basin. See, e.g., http://gis.bam.water.ca.gov/bam/ for CA DWR's Best Available Maps.

2.4 Routine levee inspections, maintenance, and emergency preparedness

CA DWR is the levee maintaining agency (LMA) for the Feather River west levee in Butte County (Maintenance Area [MA] 7). CA DWR is also the LMA for the levee on the west bank of the Feather River in Sutter County from Live Oak north to the Sutter County line (MA 16) and south of Levee District One (LD 1) (MA 3). Levee District Nine (LD 9) is the LMA for the Feather River west levee in Sutter County from north Yuba City to Live Oak (more specifically, from south of Pease Road to north of Paseo Road). LD 1 meets LD 9 on the north side of Yuba City and extends to the south to just north of Cypress Ave. in unincorporated Sutter County.

In their roles as LMAs, CA DWR, LD 1, and LD 9 and inspect their levees in winter and summer; CA DWR inspects all Project levees again in spring and fall. In addition, the USACE conducts less frequent inspections under various programs.

Routine maintenance activities include:

- Vegetation maintenance activities (burning, slope dragging, cutting, trimming, and spraying).
- Rodent control.
- Levee crown grading.
- Roadway maintenance.
- Addressing encroachment issues.
- Minor structural repairs (mile markers, gates, barricades, and miscellaneous sign maintenance, repair, and replacement).
- Minor levee repairs (erosion repair, hole grouting, revetment, rip-rap, and slope repair).

Routine emergency preparedness activities include training, equipment inventory and inspection, and review of the USACE Operations and Maintenance (O&M) Manual and applicable supplements.

2.5 Required LMA reporting

WC Sec. 9140-9141 require LMAs to submit an annual report to CA DWR on their operation and maintenance of a Project levee and for CA DWR to submit an annual report to summarize the information received from the LMAs.

LMAs are required to submit a report about the O&M on their levees to CA DWR by September 30 each year. Pursuant to WC Sec. 9140, the information submitted to CA DWR shall include the following five items:

- Information known to the LMA that is relevant to the condition or performance of the Project levee.
- Information identifying known conditions that might impair or compromise the level of flood protection provided by the Project levee.
- A summary of the maintenance performed by the LMA during the previous fiscal year.
- A statement of work and estimated cost for operation and maintenance of the Project levee for the current fiscal year, as approved by the LMA.
- Any other readily available information contained in the records of the LMA-relevant Project levee, as determined by the Central Valley Flood Protection Board (CVFPB) or CA DWR.

These LMA reports may help SBFCA managers maintain current knowledge of levee status.

2.6 Sources of information about critical facilities and localized/storm water flooding

Sources of information about critical facilities in SBFCA's communities, as well as information about areas subject to localized flooding, include:

- Butte County Multi-Jurisdictional All Hazard Pre-Disaster Mitigation Plan (2007).
- Sutter County Local Hazard Mitigation Plan (2013).
- Local storm drainage plans for each city and county.
- Public works officials for each city and county.

3 Concept of flood emergency operations in Butte and Sutter counties

In this chapter:

- Operational goals, priorities, strategies, and assumptions for a flood emergency.
- The Standardized Emergency Management System (SEMS) organization for flood emergency response within SBFCA's boundaries.
- Agency roles and responsibilities for flood emergency response in and affecting SBFCA.

3.1 Operational goals, priorities, strategies, and assumptions for a flood emergency

Each of the flood emergency response plans of the cities and counties within SBFCA's boundaries provides a set of operational goals, priorities, strategies, and assumptions. They vary somewhat in their wording, but all have essentially the same concepts. The sections below are adapted from other plans in the region.

> Important to note:
>
> SBFCA is neither a levee maintaining agency nor a governmental agency with emergency response resources or capabilities. Its role is limited to providing technical assistance to local, state, and federal agencies as they respond to a flood emergency.

3.1.1 Operational goals

To the extent that it is able, SBFCA will support these operational goals of the agencies charged with emergency response operations:

- Mitigate hazards.
- Meet basic human needs.
- Address needs of people with disabilities and access and functional needs.
- Restore essential services.
- Support community and economic recovery.

3.1.2 Operational priorities

To the extent that it is able, SBFCA will support these operational priorities of the agencies charged with emergency response operations:

- Save lives.
- Protect health and safety.
- Protect property.
- Preserve the environment.

3.1.3 Operational assumptions

As a part of the multi-agency emergency response team, SBFCA will operate under these assumptions:

- Emergencies or disasters may occur at any time, day or night, in populated as well as remote areas.
- Major emergencies and disasters will require a multi-agency, multi-jurisdictional response. For this reason, it is essential that the Standardized Emergency Management

System (SEMS), and in many cases a Unified Command, be implemented immediately by responding agencies, and expanded as the situation dictates.

- SBFCA will commit all available resources to save lives, minimize injury to persons, and minimize property damage.
- Large-scale emergencies and disasters may overburden local resources and necessitate mutual aid from neighboring jurisdictions.
- Large-scale emergencies and disasters and the complex organizational structure required to respond to them pose significant challenges in terms of warning and notification, logistics, and agency coordination.
- Major emergencies and disasters may generate widespread media and public interest. The media must be considered a partner in large-scale emergencies and disasters; this relationship can provide considerable assistance in emergency public information and warning.
- Large-scale emergencies and disasters may pose serious long-term threats to public health, property, the environment, and the local economy. While responding to significant disasters and emergencies, all strategic decisions must consider each of these consequences.
- Disasters and emergencies may require an extended commitment of personnel and other resources from involved agencies and jurisdictions.

In addition, these flood-specific assumptions inform SBFCA's flood emergency response planning:

- A flood emergency caused by Feather River levee failure or Oroville Dam failure will involve multiple jurisdictions and multiple city, county, and state agencies (and likely federal agencies, as well).
- All agencies responding to flood emergencies will use SEMS.
- The Sutter County Operational Area (OA) will activate its EOC when one or more municipalities in the county activate their EOCs, if it has not already done so.
- To respond effectively to a flood emergency, municipalities within SBFCA's boundaries will require mutual aid from the county and/or state; however, in a regional flood emergency other nearby jurisdictions will be similarly affected, so mutual aid assistance may not be immediately available.
- A flood emergency may close or limit access of entry or re-entry to some or all residential and commercial areas in affected communities.

3.2 Standardized Emergency Management System (SEMS) structure for a flood emergency

The common structure and terminology of SEMS will facilitate communication and coordination of interjurisdiction and interagency response to flood emergencies.

3.2.1 SEMS organizational levels

The five SEMS organizational levels are field, local government, operational area, region, and state. In a flood emergency, these agencies comprise the five organizational levels:

- Field: within city limits, whichever city agencies are on scene (e.g., police, public works); in unincorporated county areas, county agencies on scene (e.g., sheriff, public works; at the levee, levee maintaining agencies and/or CA DWR and/or USACE.

- Local government: within city limits, the city government; in unincorporated county areas, the county government.
- Operational area: within SBFCA, either Butte County OA or Sutter County OA.
- Region: Cal OES Region III, which is part of the Inland administrative region.
- State: California.

3.2.2 SEMS functional sections and components

The five functional sections within each organizational level are command/management, operations, planning/intelligence, logistics, and finance/administration.

For thorough descriptions of the components of SEMS, please see Chapter 2 of the Butte County OA EOP and Section 3 of the Sutter County OA EOP.

3.3 Agency roles and responsibilities for flood emergency response in and affecting SBFCA

3.3.1 Flood response role of SBFCA

As a joint powers agency with special expertise on the upgrades of the Feather River West Levee, SBFCA will serve in an advisory role, providing technical assistance, to the EOC(s) managing flood response within SBFCA's boundaries.

3.3.2 Flood response role of the cities within SBFCA's boundaries

In a flood emergency, city staffs focus on the safety of their residents as part of a larger response. The cities will try to assign emergency workers to assignments during an emergency or disaster that best suit their abilities and areas of training, but this may not always be possible. The cities within SBFCA's boundaries are not levee maintaining agencies, so have no primary responsibilities in responding to levee issues.

The flood emergency response responsibilities and activities of city officials, administrators, and staff are governed by their respective municipal codes.

SEMS organizational charts and actions by city elected officials, administrators, and staff in response to a flood emergency are described in their respective emergency operations plans. For example, Annex A of the Live Oak EOP has a checklist for each EOC position.

3.3.3 Flood response role of the Butte County and Sutter County operational areas

In accordance with SEMS, when a city's resources are depleted or reasonably committed, mutual aid is requested and coordinated within the OA. For example, Yuba City may require additional people for sand bagging, emergency debris clearance, and similar activities, and this assistance may come from trained Sutter County crews.

An OA's flood operations are coordinated through its EOC. The EOC ensures proper communication and coordination among all entities that are responding to the flood. After the OA EOC is activated, representatives from an OA's cities report to the OA Operations Section Chief. Then, as needed, city staff join the other local, county, and state resources organized under the five SEMS sections in the OA EOC.

Through the OA, a county may reinforce local agencies' resources to the extent the county is able to provide the requested personnel and/or equipment without compromising its other obligations.

SBFCA managers may sit at the county EOCs to facilitate SBFCA's role in providing technical assistance.

3.3.4 Flood response role of levee maintaining agencies

As noted in Section 2.4, the LMAs for Feather River levees within SBFCA's boundaries are CA DWR, LD 1, and LD 9.

For CA DWR MA 16, extending from Live Oak north to the Sutter-Butte county line, MA 7, extending from the Sutter-Butte county line north to the Thermalito Afterbay, and MA 3 south of LD 1, the CA DWR Sutter Maintenance Yard is responsible for maintaining the levees on a day-to-day basis in accordance with guidelines provided in the USACE's Standard Operations and Maintenance Manual and each applicable supplement for individual project units. The Sutter Maintenance Yard is part of CA DWR's Department of Flood Management.

In the event of a flood emergency, Crew One of the Sutter Maintenance Yard is responsible for patrolling and flood fighting on the west side levee of the Feather River in MA 16 and MA 7. The Sutter Maintenance Yard's incident command team is in charge of all resources responding to a levee incident site. These resources may include CA DWR-trained California Conservation Corps or Cal Fire flood fight teams.

LD 9 maintains 6.4 miles of levee on the west bank of the Feather River from south of Pease Road to north of Paseo Road in Live Oak. LD 1 maintains the Feather River levees from the north side of Yuba City south to just north of Cypress Ave. in unincorporated Sutter County. In the event of a flood emergency affecting those levee reaches, LD 1 and LD 9 will be responsible for monitoring, patrolling, and flood fighting on their respective levee reaches.

3.3.5 Flood response roles of CA DWR, Cal OES, and other state agencies

CA DWR

CA DWR is responsible for state flood response operations through its Flood Operations Center (FOC), Division of Flood Management, other divisions, and their flood management and flood fight technical experts. The CA DWR FOC responds to flood emergencies statewide and coordinates its flood emergency response activities with local, state, and federal agencies. When the FOC is activated, it operates 24 hours a day, seven days a week, along with the flood fight and patrol teams that it oversees.

CA DWR coordinates with USACE, Bureau of Reclamation, and other agencies. CA DWR will work with Cal OES and other state agencies as needed during flood emergencies. CA DWR supports local flood emergency response by providing real-time weather and hydrology conditions and warnings, technical assistance, information dissemination, and flood fight resources through specific requests from Cal OES operational regions.

The CA DWR Incident Command Team is trained and prepared to respond to flood response emergencies and is ready to deploy on short notice to emergency sites to deliver flood fighting assistance.

CA DWR's River Forecasting Section works with the National Weather Service (NWS) California-Nevada River Forecast Center (CNRFC) to provide forecasts of reservoir inflows, river flows, and water levels. These forecasts are used by the Flood Operations Branch and the NWS to determine the level of joint federal-state flood response activation and operations. During high water events, federal and state river forecasters work around the clock to update their forecasts and monitor real-time changes in the rivers and streams of interest (CA DWR Feather River Atlas, 2013). CNRFC gages on the Feather River include Gridley (GRIC1), Yuba City (YUBC1), Boyd's Landing (FBLC1), and Nicolaus (NCOC1).

This information can be viewed at the DWR CDEC website:

http://cdec.water.ca.gov (public access URL)

http://cdec4gov.water.ca.gov (URL for government agencies only)

Cal OES and other state agencies

As part of California's mutual aid system, an OA may request assistance from the appropriate Cal OES Regional Emergency Operations Center (REOC). The REOC works with Cal OES, CA DWR, and other state agencies to provide required resources to the OA. OAs may request technical assistance (as opposed to personnel, equipment, and/or materials) directly from CA DWR without going through a REOC first.

Cal Fire provides a majority of the crews used in flood-fight activities. Cal Fire also assists Cal OES by setting up mobilization centers, mobile kitchens, and other facilities. The California National Guard (CNG) can provide similar support.

The California Conservation Corps (CCC), California Department of Corrections (CDC), and Department of Juvenile Justice (formerly known as the California Youth Authority) provide personnel for flood-fight crews and levee patrols during emergencies. Standby crews are frequently stationed near sites where problems are anticipated due to storm activity, high river stages, high tides, or large reservoir releases.

DWR's Division of Flood Management updates contact names and telephone numbers for many of the agencies involved with flood emergency response. These names and telephone numbers are distributed at DWR's yearly pre-season flood preparedness meetings (held in the late fall in several locations in the Central Valley) and are available from DWR upon request (floodsafe@water.ca.gov).

3.3.6 Flood response role of USACE

When a flood incident exceeds the capabilities of state and local jurisdictions, the USACE may provide assistance under Public Law 84-99. In California, all requests to USACE for flood-fight assistance must come from CA DWR. Once assistance is authorized, USACE usually works with CA DWR for incidents in the Central Valley. CA DWR maintains communication and coordination among the local agency, the REOC, and USACE.

3.3.7 Flood response roles of FEMA

The Federal Emergency Management Agency (FEMA) plays an important role after floodwaters have receded. It coordinates the federal government's disaster recovery assistance programs such as small business loans and temporary housing.

3.3.8 Flood response role of volunteer organizations

Several community-based organizations, faith communities, and volunteer organizations are available to assist communities within SBFCA's boundaries in the event of a flood emergency. Information about these organizations can be found in the various city and county EOPs pertinent to SBFCA's area.

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4 Implementation and coordination of SBFCA's Flood Safety Plan

In this chapter:

- Acquisition of accurate information about the flood threat or emergency.
- Feather River flood stages and corresponding flood emergency response activities.
- Establishment of a unified command in a flood emergency.
- Coordination with utilities and other agencies in a flood emergency.
- Mutual aid in a flood emergency.

4.1 Flood emergency intelligence

Flood emergency intelligence means the tools and techniques that SBFCA managers use to identify, collect, analyze, and disseminate information on the current and future extent and consequences of a flood.

4.1.1 Weather forecast

SBFCA managers monitor relevant briefings by the NWS and CA DWR. For example, during winter months, CA DWR provides weekly hydrology briefings, and the NWS provides daily briefings on upcoming weather as part of its role in the state-federal Flood Operations Center in Sacramento.

4.1.2 River forecast

Hydrologists for CA DWR work with the NWS in the California-Nevada River Forecast Center (CNRFC) to provide twice daily forecasts of river height at various points; these forecasts are issued as "River Bulletins." SBFCA managers monitor the NWS Sacramento Forecast Office watches, warnings, and advisories posted online.

In addition, SBFCA managers regularly review the CA DWR California Data Exchange Center (CDEC) website (http://cdec4gov.water.ca.gov), which provides data on reservoirs, rivers, and rainfall.

Figure 1 on the next page shows an example of the type of plot available on the CDEC website. (The figure shows the Feather River at the YUB gage on 2/9/15.)

4.1.3 Situational awareness about levee status

SBFCA managers maintain regular contact with CA DWR and the Butte County and Sutter County OAs. These agencies will keep SBFCA updated on levee status and any flood fight activities going on there.

4.1.4 Damage assessment and safety assessments in SBFCA communities

In the communities within SBFCA's boundaries, public works field units will perform windshield surveys and safety assessments as soon as it is safe to do so. Later, detailed inspections and engineering assessments are completed.

4.1.5 Traffic information

City and county public works departments and law enforcement agencies communicate traffic issues such as flooded roads and intersections to the appropriate OAs, which will, in turn, provide pertinent information to SBFCA managers.

4.1.6 Maps

Butte County and Sutter County fire departments have maps of hazardous material storage areas, and the counties' emergency management offices can facilitate access to other maps that may be useful for flood emergency planning and response. In addition, online flood inundation maps ("Best Available Maps") for the SBFCA area are available from CA DWR.

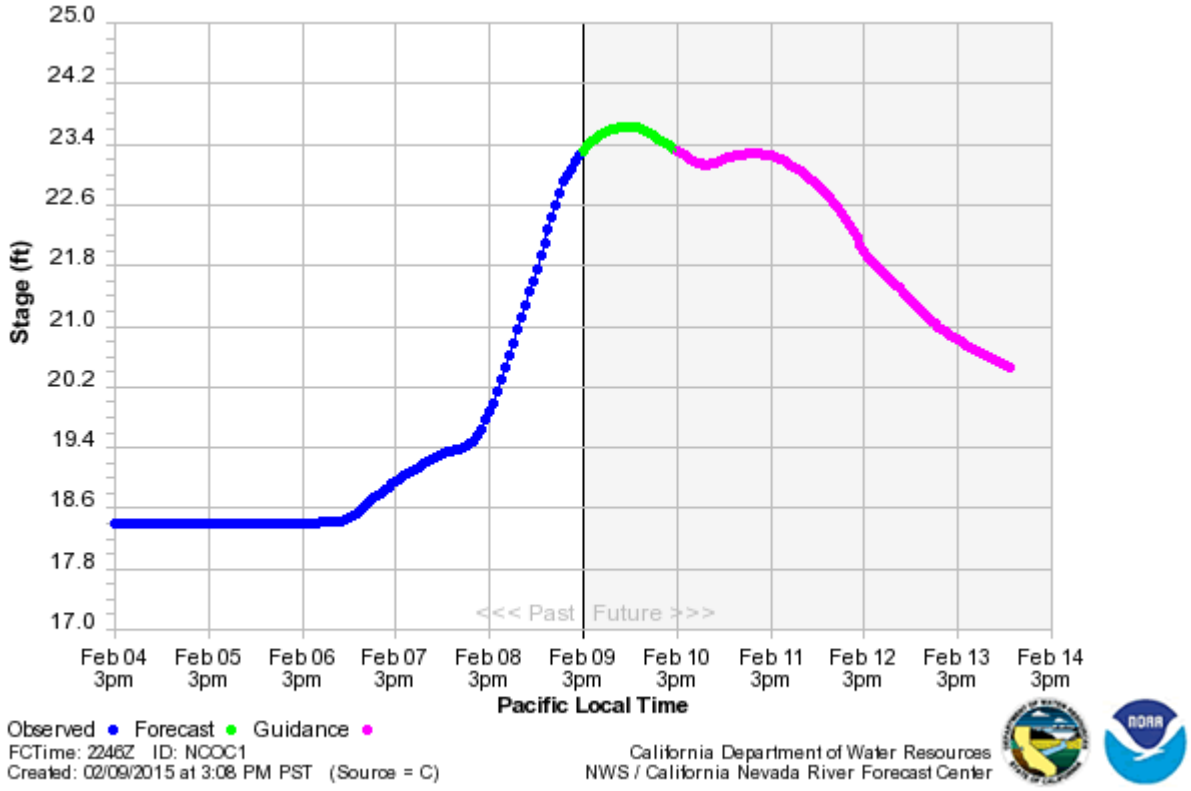

Figure 1. Example plot of YUB gage information as displayed on the CDEC website

4.2 Feather River flood emergency operations phase definitions

The Feather River generally produces slow-rise floods that provide advance warning. The cities and counties within SBFCA's boundaries will use this time to prepare a prompt and efficient response. In the case of slow-rise flood threats, those jurisdictions' plans will be implemented in several phases. In every situation the totality of the circumstances will determine emergency response activities; these river stages are guidelines only.

4.2.1 Butte County's flood emergency operations phase definitions

Flood emergency operations phase definitions for the Butte County communities of Biggs and Gridley are based (partially) on Feather River water surface elevations (stages) at the Gridley (GRL) gage:

- Below 95 ft: Normal operations.
- From 95 ft to 103.8 ft, and expected to rise: Before Impact phase.
- At or above 104.8: Sustained Operations phase.
- When water recedes: Transition to Recovery phase.

The flood threat stages for the Feather River measured at the Gridley gage as displayed on the CDEC website are shown in Table 3.

Table 3. Flood threat stages for the Feather River at Gridley (GRL) gage

Gage	Zero datum	Adj to NGVD	Peak of record	Monitor stage[2]	Flood stage	Danger stage	Top of levee
GRL[1]	0.00 ft USED	-2.90 ft	19 Feb 86 100.06 ft	95.0 ft	103.8 ft	104.8 ft	107.2 ft

1. Source: http://cdec.water.ca.gov/cgi-progs/ stationInfo?station_id = GRL
2. NWS calls this the "Action stage."

4.2.2 Sutter County's flood emergency operations phase definitions

Flood emergency operations phase definitions for the Sutter County communities of Live Oak and Yuba City are based (partially) on Feather River water surface elevations (stages) at the 5th Street Bridge (YUB) gage in Yuba City:

- Below 70 ft: Planning and Preparation phase.
- From 70 ft to 77 ft: Ready for Action phase.
- Above 77 ft: Emergency phase.

Note that all of the above phases occur prior to the river reaching "Flood stage" as defined on the CDEC website. The flood stages for the Feather River measured at the Yuba City gage as displayed on the CDEC website are shown in Table 4.

Table 4. Flood threat stages for the Feather River at Yuba City (YUB) gage as displayed on CDEC website

Gage	Zero datum	Adj to NGVD	Peak of record	Monitor stage[2]	Flood stage	Danger stage	Top of levee
YUB[1]	0.00 ft USED	-3.00 ft	02 Jan 97 78.23 ft	65.0 ft	80.2 ft	81.2 ft	83.5 ft

1. Source: http://cdec.water.ca.gov/cgi-progs/stationInfo?station_id=YUB
2. NWS calls this the "Action stage."

Note: A comparison of the terminology and names of the emergency operations phases in Sutter and Butte counties is provided in Attachment 1.

4.3 Activation of this Flood Safety Plan in relation to flood conditions

This plan will be activated by SBFCA in conjunction with the flood emergency response plans of Butte County and Sutter County.

4.4 County EOC activation levels and flood emergency activities in relation to river stages

The Butte County OA EOP uses four EOC activation levels: zero (0), indicated by black; one (1), indicated by green; two (2), indicated by yellow; and three (3), indicated by red. Table 5 relates Feather River stages at the GRL gage to Butte County flood emergency activities.

The Sutter County OA EOP uses EOC activation levels one (1), two (2), and three (3). Table 6 relates Feather River stages at the YUB gage to Sutter County flood emergency activities.

Table 5. Relationship between Feather River flood conditions and Butte County EOC activation levels

EOC activation level (1)	Flood condition (2)	EOC duties (3)	EOC activation (4)	EOC actions (county and/or city governments) (5)
[None]	Normal	Maintenance	No activation	No actions
0 = black	No increasing probability of flooding	Monitor weather and flood forecasts	Only minimal staff in normal operations	No actions
1 = green	Flood watch issued and/or other circumstances warranting EOC activation at this level	• Continuous monitoring of weather and flood forecasts • Check and update resource lists • Distribute status and analysis to EOC personnel • Receive briefing from field personnel	Only basic support staff or as determined by EOC Director	• EOC Section Chiefs review EOP and guidelines • EOC Section Chiefs check readiness of staff and resources
2 = yellow	Flood warning issued and/or other circumstances warranting EOC activation at this level	• Continuous monitoring of weather and flood forecasts • Initiate EOC start-up checklist • Fill resource requests • Provide status updates to EOC personnel	• Staff as situation warrants and liaison with other agencies • Primary EOC personnel are available and check in regularly	• Briefings to county staff and department heads • Briefings to Cal OES Secretary • Begin full EOC operation • Plan for, implement evacuation, as needed
3 = red	Hazardous flood conditions affecting a large area and/or other circumstances warranting EOC activation at this level	• Brief arriving staff on current situation • Fill resource requests to the extent capable • Request additional resources through mutual aid channels	• Activation level as determined by EOC director • All EOC essential and necessary staff are present: key department heads, support staff	Actions as situation warrants, e.g., search and rescue

Table 6. Relationship between YUB gage stage and emergency response activities in Sutter County

	-- Feather River stage at YUB gage -- Emergency response phase -- EOC activation level	Representative flood emergency response activities at city and/or county government levels
Planning and preparation phase	-- 60 ft and forecast to rise -- EOC activation level 1	• Emergency Operations Manager notifies members of the Management Team. • EOC is activated to Level 1 during working hours. • Public works staff closely monitors river forecasts and river levels. • Communication protocols established between county and cities in OA.
	-- 65 ft and forecast to rise -- EOC activation level 2 or 3	• EOC is activated to Level 2, if deemed necessary. • Written log of all emergency activities is begun. • Sutter County Sheriff's Department initiates preliminary planning for mass care centers. • All key personnel involved in emergency organization are notified. • Management Team meets as soon as practical. • Management Team assesses conditions for Advisory Evacuation and evacuation of special needs populations. • Emergency Operations Manager assesses need to activate to Level 3, if not done previously. • Public Information Officer (PIO), in coordination with Joint Information Officer, if identified, begins to make regular press releases. • Management Team assesses need for local disaster declaration. • Vital records are identified and tagged. • Essential vehicles are moved to pre-designated staging areas. • Non-emergency equipment and vehicles are prepared for moving out of danger area.
Planning and preparation		• Management Team considers evacuation of schools in threatened areas. • Emergency personnel ensure safety of families and prepare to return to duty. • The Incident Action Plan is developed. • Various departments take preventive/protective actions such as ensuring water tanks are full, adjusting chemicals at wells, testing generators and pumps, verifying sandbag/sand inventory, securing chemicals, inventorying equipment and supplies, and preparing vehicles for moving to higher ground.

Ready for action phase	-- 70 ft and forecast to rise -- 3, if not previously done so	• EOC is activated to Level 3, if not done previously. • Emergency Operations Director, Emergency Operations Manager, and PIO coordinate notification of change of status to all agencies and emergency organizations. • An Incident Action Plan is developed for each operational period. • Management Team meets every 12 hours. • Management Team assesses conditions for advisory or mandatory evacuation. • Care and Shelter Section activated, if needed. • If threatened, tagged files and equipment are moved to higher ground. • Financial transactions are monitored. • Public works staff takes additional protective actions such as moving spare pumps and motors to higher ground and securing non-essential chemicals. • Logistics Chief coordinates supply needs with other Section Chiefs. • Radios are distributed to staff.
Ready for action, continued	-- 75 ft and forecast to rise -- EOC activation level 3	• Management Team assesses conditions for advisory or mandatory evacuation. • Local disaster proclamations are made, if not done previously; other requests for declarations are made. • Financial transactions are monitored. • Resources assigned to the emergency are tracked.
Emergency phase	-- 77 ft and forecast to rise -- EOC activation level 3	• Management Team meets every 12 hours or more often as necessary. • Management Team assesses need for mandatory evacuation, if not done already. • Evacuated areas are secured. • Financial transactions are monitored. • Resources assigned to the emergency are tracked.

4.5 Establishment of a unified command

When the emergency intelligence indicates that a large-scale flood emergency is likely or already occurring, the Butte County OA EOC and/or the Sutter County OA EOC will establish a unified command or multi-agency coordination (MAC) group to discuss and set priorities for flood fight operations. A SBFCA representative may join the unified command or MAC group.

4.6 County EOC coordination with utilities and other agencies

In general, coordination with utilities will be the responsibility of the Butte County OA EOC and/or the Sutter County OA EOC.

During a flood emergency, coordination will be required with a number of agencies and special districts. As with utilities, coordination with these agencies and special districts during a flood emergency likely will be coordinated through the OA(s). However, utilities may send representatives to all activated EOCs to facilitate coordination of the restoration of critical facilities.

4.7 Mutual aid

California's mutual aid system is described in Section 3.3 of the Butte County OA EOP and Chapter A of the Sutter County OA EOP. For discipline-specific mutual aid (i.e., fire and law enforcement), resource requests that are normally within the inventories of the mutual aid system will go from the local coordinator to the OA mutual aid coordinator to the REOC mutual aid coordinator. All other resource requests will be made through the logistics function at each level.

4.8 Flood emergency proclamations and related actions by local officials

Local officials in the cities and counties within SBFCA's region are responsible for proclaiming emergencies; SBFCA has no role in this action. Flood emergency proclamations and related actions by local officials are shown in Table 7.

Table 7. Flood emergency proclamations and related actions by local officials

Declaration (1)	Time factors (2)
Local emergency proclamation	Must be issued within 10 days of the event. Must be ratified within 7 days by local governing body (e.g., city council). Local governing body must review the need to continue the proclamation at least every 30 days until flood emergency is terminated. Local governing body must terminate proclamation by resolution as soon as conditions warrant.
Request for Cal OES Secretary concurrence	Must be sent within 10 days of the emergency.
Request for Governor to proclaim a state of emergency	Must be sent within 10 days of the emergency.
Initial damage estimate	Accompanies request to Governor for state of emergency.

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5 Flood emergency communications within SBFCA's boundaries

In this chapter:

- Communications resources and how they are organized for a flood emergency.
- Flood emergency information flow at local EOCs.
- Local communities' emergency communications systems.
- Public emergency notification.
- Media interface during a flood emergency.

Emergency communications are covered in Functional Annex C of the Butte County OA EOP and Annex 4 of the Sutter County OA EOP. This chapter adds detail to those references for the specific context of a flood emergency.

SBFCA has a very limited role in flood emergency response communications. It will not issue any information about a potential or actual flood emergency except in strict coordination with Butte County and/or Sutter County emergency managers.

5.1 Communication resources and how they are organized for a flood emergency

5.1.1 Municipal emergency communications organizations

When cities within SBFCA's boundaries activate their EOCs during a flood emergency, city staff will fill the Public Information Officer (PIO) position and Communications/Information Technology Branch positions such as communications technicians, message center operators, and messengers.

Cities that have their own law enforcement agencies also run their own dispatch centers. Other cities rely on their county sheriff's department for law enforcement and dispatch services.

Each city has designated a location to serve as a media center during a flood emergency.

5.1.2 County OA EOC communications organization

In a flood emergency, communications-related positions at the Butte County OA EOC and the Sutter County OA EOC will be fully staffed, including a PIO, communications technicians, message center operators, and messengers. The county's sheriff departments have dispatch centers and mobile command vehicles.

Each county has designated locations to serve as media centers during a flood emergency.

5.1.3 Auxiliary communications personnel

During a flood emergency, local "Ham" operators may assist the county OAs in relaying information to other agencies in the event of a communication equipment failure. In Butte County, additional communications personnel may be available from the Butte County Sheriff Communication Reserve. The county OA EOCs will coordinate auxiliary communication service by local radio groups.

5.2 Flood information flow at local EOCs

5.2.1 Information to and from local EOCs

Cities' EOCs generally receive or transmit information by:

- Radio
- Telephone
- Email
- Internet
- Fax

Butte County and Sutter County personnel may use any or all of the following methods to communicate with other flood emergency managers and responders:

- Cellular and microwave telephones
- Satellite telephones
- EOC radio system
- Sheriff's Department Communications (dispatch) Center
- County mobile command vehicle

There are many potential sources of information about a flood emergency, including police and fire officials, emergency managers from cities and special districts, CA DWR, NWS, Cal OES, dam operators, and USACE.

When emergency managers are disseminating information, all data should be verified prior to transmission. If unverified data must be transmitted, it should be clearly designated as unconfirmed information.

5.2.2 Communication among local EOC staff

The EOPs for the cities and counties within SBFCA's boundaries describe the reporting and briefings that occur by and for EOC staff during EOC activation. The Butte County Office of Emergency Services and the Sutter County Office of Emergency Services have developed several forms, including a flood status report form, to support EOC communication and reporting.

5.2.3 Key EOC communication roles and responsibilities

The following EOC positions have important communications responsibilities:

- EOC Director.
- Emergency Services Coordinator.
- Public Information Officer.
- Rumor Control Unit.
- Liaison Officer.

The EOPs for the cities and counties within SBFCA's boundaries describe the communications responsibilities of these and other EOC positions. For example, the communications responsibilities of all the city's EOC positions are listed in Annex A, Direction and Control, of the (Draft) Live Oak EOP.

5.2.4 Local emergency communication equipment

Generally, if city and county departments are able to operate from their regular offices, they will use the same equipment for inter-jurisdictional communications and other emergency purposes that they use for regular business.

City and county emergency management organizations have radio systems installed in the EOC that support and coordinate communication between on-scene and off-scene personnel. Typically, communications are conducted by cell phone. Radios also may be used for direct communications with field forces or outside agencies. Key decision makers and certain EOC staff will be issued portable radios. The Communications/Information Technology Branch Chief is responsible for coordinating and authorizing use and distribution of additional cell phones and/or radios.

Contact each county's emergency manager for the radio frequencies for the county OA and for cities within their counties.

5.2.5 Weak links during flood events and their mitigation

The communications system within SBFCA's boundaries could be degraded in a flood emergency, particularly if flooding occurs with heavy winds. In a severe winter storm scenario, power outages could occur, cell phone towers could sustain damage, conduit for landline service could be damaged by floodwater, and if the emergency lasts for a considerable amount of time, satellite telephone batteries may run out of power and backup generators may run out of fuel.

To mitigate power failures that could affect communications and other functions, the cities and counties within SBFCA's boundaries have emergency generators and stockpiles of fuel in safe locations.

5.2.6 Integration and interoperability

The Butte County OA and the Sutter County OA both have Tactical Interoperable Communications Plans (TICPs). City and county equipment and protocols are fully interoperable. These TICPs are not for publication; contact the counties' emergency managers for more information.

5.2.7 Safety and security

During flood emergency operations, heightened safety and security procedures will be in force and will be followed by all emergency response personnel. Security and safety procedures will also be implemented for all command posts and other operational sites.

Security includes physical security of communication equipment, frequency restrictions, and appropriate levels of control of communications.

5.3 Public emergency notification

The EOPs of Biggs, Gridley, and Live Oak all state the following important principle:

> Emergency Public Information is a priority of utmost importance during emergencies and disasters. City government has a primary responsibility to provide accurate and timely information to the public regarding conditions, threats, and protective measures. To avoid conflicts and confusion, the Emergency Public Information function operates best when centralized and coordinated among all involved jurisdictions, agencies, and organizations.

In the unincorporated areas of Butte and Sutter counties, the counties have primary responsibility for emergency communications with their residents, and the same principle applies. SBFCA will only disseminate information regarding a potential or actual large-scale regional flood emergency in coordination with Butte County and/or Sutter County emergency managers.

5.3.1 Content and purpose of emergency notification

In the case of a potential flood, the public must be kept informed of:

- Water levels and their implications for a flood incident.
- Levee conditions.
- Short-term and long-term weather forecasts.
- Any other flood-related threat that might exist.

In an incident such as when a levee has already failed, early alert and notification allow the public time to evacuate or avoid the area. The LMAs will provide information to Butte County and Sutter County so that the counties can notify the public about the conditions of area levees, rivers, and tributaries and start evacuation, if appropriate.

5.3.2 Emergency notification methods

A well-informed public is likely to respond well in the face of a flood emergency. Within SBFCA's boundaries, there are many ways to inform the public. They include:

- City-to-resident notification (such as Blackboard Connect Service in Live Oak)
- Emergency vehicle loudspeaker system
- Emergency notification on the city and county websites
- Door-to-door notification by neighborhood groups and associations
- Commercial radio and television stations
- County-to-resident emergency alerts by text and email ("Nixle" in Sutter County and the Cassidian Communications system in Butte County)
- NOAA Weather Radio
- Various forms of social media

5.3.3 Message requirements

Messages conveyed among emergency personnel and to the public must be:

- Clear.
- Concise.
- Timely.
- Accurate.
- Correctly prioritized.
- Targeted to the affected geographic area.

5.3.4 General flood preparation information

Residents who live within SBFCA's boundaries can obtain general flood preparation and emergency response information from these resources:

- American Red Cross (http://www.redcross.org/prepare/disaster/flood)
- Butte County Emergency Services (http://www.buttecounty.net/oem/Home.aspx)
- Cal OES (http://www.calema.ca.gov/PlanningandPreparedness/Pages/Floods.aspx).
- City websites, such as http://www.yubacity.net/city-services/public-works/floodplain-management.html
- FEMA (http://www.ready.gov/floods)
- Sutter Butte Flood Control Agency (www.sutterbutteflood.org)

- Sutter County Emergency Services (http://www.bepreparedsutter.org)

5.4 Media interface during a flood emergency

5.4.1 Media interface by cities

Prior to activating its EOC, a city's director of emergency services (or designee) will be the city's spokesperson regarding flood emergencies. After EOC activation, the PIO becomes the primary source of information for the media.

Press release templates are available from the Butte County Office of Emergency Services and in Annex 4 of the Sutter County OA EOP.

5.4.2 Media interface by counties

Prior to county OA EOC activation, the county's emergency services manager (or designee) is the county's spokesperson regarding flood emergencies. After EOC activation, the EOC will establish a Joint Information Center and designate a PIO as soon as practical during a potential threat or actual incident. The PIO will coordinate with media for news releases. (In a large emergency, public information coordination teams comprising public information representatives of several agencies may be established.)

Information about communication under the SEMS framework is in the Butte County OA EOP and the Sutter County OA EOP.

5.4.3 Media interface by SBFCA

The Executive Director of SBFCA is the agency's primary spokesperson regarding flood emergencies. All information disseminated prior to and during flood emergencies will be coordinated with Butte County and/or Sutter County emergency managers. After county OA EOC activation, representatives of SBFCA will sit at the EOC(s), and information dissemination will be coordinated with the PIO(s).

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6 Availability of flood-fight equipment and supplies

In this chapter:

- Equipment and supplies available for fighting local floods.
- Staging areas.
- Sandbags for the public.
- Information about vendors, supplies, and equipment.

6.1 Equipment and supplies for fighting local floods

CA DWR recommends that agencies responsible for levee flood fighting have an adequate inventory of the items listed in Table 8, below. The LMAs within SBFCA's boundaries all have adequate inventories of these items.

Table 8. Equipment and supplies that LMAs use for levee floodfighting; DWR can provide such equipment to the cities and counties in SBFCA through mutual aid

Item	Items in the inventories of these LMAs		
	CA DWR	LD 1	LD 9
3-cell watertight flashlights	x	x	x
"D" cell batteries	x	x	x
Cal OSHA approved hardhats	x	x	x
flat-tipped shovels	x	x	x
sets assorted size raingear	x	x	x
empty sandbags	x	x	x
generators, 3500 kW or larger	x	x	x
500-watt lights	x	x	x
light standards	x	x	x
propane lanterns	x	x	x
portable radios	x	x	x
orange wire marking flags	x	x	x
yellow wire marking flags	x	x	x
red wire marking flags	x	x	x
USCG approved lifejackets	x	x	x
orange vests	x	x	x
GPS units	x	x	x
vehicles with mobile radios	x	x	x
base radio	x	x	x

visquine plastic (100 ft x 20 ft x 10 ml)	x	x	x
twine, 200 lb test	x	x	x
wooden stakes	x	x	x
tie buttons	x	x	x
lineman pliers	x	x	x
sledge hammers	x	x	x

The cities within SBFCA's boundaries have adequate equipment and supplies on hand to address local flooding within city limits. The equipment and supplies are maintained by and are available from the cities' public works departments. Likewise, Butte and Sutter counties have adequate equipment and supplies on hand to address local flooding in the unincorporated areas of their respective counties.

Neither the cities nor the counties within SBFCA's boundaries are Feather River LMAs, so they do not, and are not expected to, have all of these items in their inventories. The Sutter Maintenance Yard (CA DWR) has all of these supplies; the counties can obtain these items from DWR and can facilitate the provision of these items from CA DWR to the cities through mutual aid channels.

SBFCA does not own or have access to any of the equipment or supplies in Table 8. SBFCA does not have any role in floodfighting other than providing technical assistance.

6.2 Staging areas

The levee districts, cities, and counties within SBFCA's boundaries have designated potential staging areas. The locations of these staging areas are subject to change depending on the circumstances of each flood emergency.

6.3 Sandbags for the public

In Butte County, city and county emergency managers will make a coordinated decision to notify the public of an imminent threat of flooding and make sandbags available to the public.

Sutter County operates its sandbag distribution sites throughout the winter months in anticipation of continuous and extended heavy rainfall events during which widespread flooding may occur. Sand and sandbags are available to property owners and local businesses on a self-serve basis. Property owners and businesses are requested to take no more than 25 sandbags. These sandbags are not intended for commercial ventures or builders involved in new construction or development. Sandbags and sand are available, inexpensively, at most hardware and home improvement stores. Sandbag distribution sites in Sutter County are listed on this webpage: http://www.co.sutter.ca.us/doc/government/depts/cs/pw/wr/fp/sandbag.

6.4 Vendors, supplies, and equipment

LD 1 and LD 9 have preexisting relationships with vendors in their areas.

The cities within SBFCA's boundaries will work with their respective county emergency managers to access available vendors, supplies, and equipment available during an emergency situation.

7 Feather River West Levee patrol programs

In this chapter:

- Agency responsibility for levee patrol.
- Purpose of the LMAs' levee patrol programs.
- Levee patrol program elements.
- High water staking procedures.
- Levee maintenance reports.

This section is included in SBFCA's Flood Safety Plan to satisfy the requirements of Water Code Section 9650. SBFCA is not a levee maintaining agency, and therefore it has no responsibility for monitoring or patrolling levees.

7.1 Agency responsibility for levee patrol

The levee maintaining agencies within SBFCA's boundaries that monitor and patrol the Feather River levees are CA DWR Maintenance Area (MA) 7, MA 16, and MA 3; LD 9 (north Yuba City to Live Oak); and LD 1 (south Yuba City).

7.1.1 DWR

CA DWR maintains and monitors the levee in MA 7 according to the standards provided in this document: Supplement to Standard Operation and Maintenance Manual (SOMM), Sacramento River Flood Control Project, Unit No. 152, West Levee of Feather River from North Boundary of Reclamation District No. 777 to the Western Canal Intake (Levee of Drainage District No. 1).

CA DWR maintains and monitors the levee in MA 16 according to the standards provided in this document: Supplement to Standard Operation and Maintenance Manual (SOMM), Sacramento River Flood Control Project, Unit No. 148, West Levee of Feather River from North Boundary of Recl. District No. 777 to the North Boundary of Levee District No. 1.

CA DWR maintains and monitors the levee in MA 3 according to the standards provided in this document: Supplement to Standard Operation and Maintenance Manual (SOMM), Sacramento River Flood Control Project: Unit No. 143.

For potential or actual problems with the Feather River west levee in CA DWR MA 7, MA 16, or MA 3, crews from the CA DWR Sutter Maintenance Yard are the first responders.

Patrol teams may also include CA DWR-trained California Conservation Corps (CCC) resources or California Department of Forestry and Fire Protection (Cal Fire) flood fight resources.

7.1.2 LD 9

LD 9 maintains and monitors the levee in its jurisdiction according to the standards provided in this document: Supplement to Standard Operation and Maintenance Manual (SOMM), Sacramento River Flood Control Project, Unit No. 148, West Levee of Feather River from North Boundary of Recl. District No. 777 to North Boundary of Levee District No. 1.

For potential or actual problems with the Feather River west levee in LD 9, crews from LD 9 are first responders. LD 9 crews may be supplemented through mutual aid with trained California Conservation Corps (CCC) resources or California Department of Forestry and Fire Protection (Cal Fire) flood fight resources.

7.1.3 LD 1

LD 1 maintains and monitors the levee in its jurisdiction according to the standards provided in this document: Supplement to Standard Operation and Maintenance Manual (SOMM), Sacramento River Flood Control Project, Unit No. 144, West Levee of Feather River from North Boundary of Levee District No. 1 to North Boundary of Reclamation District No. 823.

For potential or actual problems with the Feather River west levee in LD 1, crews from LD 1 are first responders. LD 1 crews may be supplemented through mutual aid with trained California Conservation Corps (CCC) resources or California Department of Forestry and Fire Protection (Cal Fire) flood fight resources.

7.2 Purpose of the LMAs' levee patrol programs

The purpose of levee patrols is to have qualified personnel visually evaluate the performance of the levee system. These levee patrols will determine the condition of the levee and identify potential and/or existing problems such as:

- Instabilities
- Seepage conditions
- Erosion points
- Freeboard

Implementation of the levee patrol program ensures that each member of a levee patrol team is capable of participating in precautionary actions and emergency response related to the levee system.

This program will be undertaken by the appropriate LMA, with operational support from Butte County, Sutter County, and the State of California. The objectives of the program are to:

- Develop a training program that ensures qualified personnel are available when needed.
- Ensure materials, equipment, and supplies are available to patrol and protect the levee.
- Ensure materials, equipment, and supplies are maintained in a serviceable condition.
- Ensure action levels are established to manage potential challenges.
- Prepare members to recognize the interface between allied agencies when escalating incidents require large-scale operations.
- Prepare members to patrol levees to locate potential problems (including vandalism or terrorism), to alert the EOC, and to coordinate work, using flood fight or other methods, to resolve problems, and to minimize adverse consequences.

7.3 Levee patrol program elements

The levee patrol programs of the LMAs within SBFCA's boundaries have three basic components: training; equipment procurement and maintenance; and levee patrols.

7.3.1 Training

To become qualified for levee patrol, a person must complete the following:

- Classroom instruction:
    - Basic levee design
    - How to recognize potential problems
    - Applicable notification/warning systems

    - Specific levee patrol assignments
    - Command structure
    - Safety considerations
- Practical training:
    - Sandbag filling and use
    - Patching boils
    - Safety precautions

After completing both the classroom instruction and practical training, a person remains qualified for 12 months from the last date of training.

During flood emergency conditions, it may be infeasible to provide new volunteers with the practical training session. In that case, they will be partnered with experienced patrol personnel who will help and instruct them.

7.3.2 Equipment procurement and maintenance

Each LMA is responsible for ensuring that levee patrol and flood fight equipment is staged in an appropriate location and is in serviceable condition. Each LMA maintains documentation regarding its resource lists, resource locations, and staging areas.

7.3.3 Levee patrols

In Butte County and Sutter County, patrol of flood control project levees is based on the Monitor Stage for the relevant gages as displayed on the CA CDEC website, together with information about expected reservoir releases and other factors. When the water surface elevation reaches Monitor Stage, levee operators will begin patrols. If the water level is expected to be this high for only a short amount of time, roving (motor) patrols are usually implemented. If the water level is expected to remain this high or increase, routine (motor) patrols of 12-hour shifts are implemented.

General information about levee patrols

- Levee reaches are divided into patrol areas (divisions).
- Each division has a division supervisor.
- Each division supervisor will create routes that ensure complete coverage and, wherever possible, overlapping coverage.
- Each division supervisor will account physically for all personnel working under his/her control on an hourly basis.
- All levee patrol members will receive a safety briefing prior to commencing patrols and will use all provided safety gear.
- After a patrol team assesses the situation, its response is coordinated with its incident command team and the CA DWR Flood Operations Center.

Motor patrols

A typical levee motor patrol consists of:

- Two (2) four-wheel drive vehicles with mobile radio capabilities patrolling simultaneously.
- Two (2) trained and currently qualified observers in each vehicle.

Requirements of each motor patrol crew typically include the following:

- Motor patrol crews are rotated every 12 hours.
- A Division Activity Log (ICS Form 214) is completed for each shift.
- All members receive a safety briefing and use appropriate safety gear.

Walking patrols

The levee walking patrol will be initiated when slow rise flood waters reach Flood Stage (e.g., 103.8 ft at the Gridley gage), or if circumstances otherwise indicate that walking patrols are required. Typical requirements of the levee walking patrol include the following:

- Teams of two (2) people will physically walk a designated section of levee. One person is positioned at the toe of the landside of the levee. The second person is assigned to the top of the levee.
- Walking patrol teams visually check for potential problems with the levee, as instructed in the training.
- Areas of concern are identified with a yellow wire flag.
- All yellow flags are evaluated by the division supervisor conducting motor patrol activities.
- Upon evaluation of the potential problem, the division supervisor either:
    - Marks the area with an orange flag, which means at the present time the levee is performing as designed, or
    - Marks the area with a red flag, which means a potential problem requires action such as an engineer's review. All red flag conditions will be reported immediately to the levee supervisor for evaluation by an engineer.
- All levee walking patrol personnel will have, at minimum, the following:
    - 3-cell watertight flashlight.
    - Cal OSHA-approved hardhat.
    - Raingear, if warranted. Each individual is responsible to bring his/her own boots.
    - Orange reflective vest.
    - Ten (10) yellow marking flags.
    - Global positioning system (GPS) unit to establish latitude and longitude of trouble sites.
    - US Coast Guard-approved life jacket.
- One member of each foot-patrol team will be equipped with a portable radio with assigned frequency/ies. Radio communication should be minimized to prevent channel overload. All radio communication will be in plain English, with no acronyms or jargon.
- Levee walking patrol personnel should be rotated every 8 hours.

7.4 High water staking procedures

The extent of high water shall be recorded periodically as the incident progresses. This requires:

- Placing markers (stakes) to mark the high water level.
- Referencing each high water location with suitable surveying or GPS locations.
- Providing that information to the levee supervisor.

7.5 Levee maintenance reports for Feather River West Levee LMAs

The most recent levee maintenance reports for Maintenance Area 7 (designated MA0007 in CA DWR reports), Maintenance Area 16 (designated MA0016), LD 1, and LD 9 are available from this California Data Exchange Center (CDEC) website:
http://cdec.water.ca.gov/detail_reports.html.

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8 Flood fighting within SBFCA's boundaries

In this chapter:

- Flood fighting at the levee.
- Flood fighting in the floodplain.

For the purposes of this plan, flood fighting includes activities at the levee and activities in the floodplain to prevent or reduce flood damage.

8.1 Flood fighting at the levee

The LMAs within SBFCA's boundaries (CA DWR, LD 1, and LD 9) will be the first responders to any problems on the levee in their respective jurisdictions.

8.1.1 Activation of flood fight procedures

LD 1 and LD 9 supervisors have the authority to activate flood fight procedures through directives by their respective governing boards. Coordinated decisions to activate flood fight procedures by CA DWR will be made by the Sutter Maintenance Yard supervisor and Flood Operations Branch managers in consultation with other Division of Flood Management personnel. Dispatch of flood fight teams shall be in accordance with the priorities set by the LMA supervisor(s), the county OA EOC(s), and/or CA DWR.

The LMAs will address levee problems such as boils, rising water/loss of freeboard, slumps, and sloughs. More information about the LMAs' levee patrol programs is in Chapter 7 of this Flood Safety Plan.

8.1.2 Initial levee flood fight activities

At the Warning stage or upon notification of a potential problem by a levee patrol, the LMA(s) will establish necessary staging areas for supplies, equipment, and personnel. The LMAs within SBFCA's boundaries have ensured the staging areas are a safe distance from other emergency facilities such as evacuation centers, shelters, and incident command posts. If required by the situation, the LMA(s) will commence filling sandbags.

8.1.3 Personnel for flood fighting in LD 1 and LD 9

When LD 1 and LD 9 need personnel for sand bagging, emergency debris clearance, and similar activities, assistance may come from trained crews to augment LMA personnel. In accordance with SEMS, when local resources are depleted or reasonable committed, mutual aid is requested and coordinated within the Sutter County OA. If Sutter County OA resources are not sufficient or timely, the request is then forwarded to the Inland REOC. The REOC evaluates and fills requests by coordinating mutual aid from unaffected OAs, tasking a state agency, or accessing federal assistance. Because of the nature of the need and the resource, requests for hand crews are usually filled by a state agency.

8.2 Flood fighting in the floodplain

City and county emergency managers will make coordinated decisions about whether and when to implement flood fight activities such as:

- Moving property to higher ground.
- Calling up staff and volunteers.
- Establishing staging area(s).
- Acquiring, filling, and stockpiling sandbags at staging areas.
- Protecting critical facilities with sandbag levees or rings.

- Keeping drainage facilities clear of debris.
- Keeping roadways clear of debris.
- Controlling access to roadways that are flooded or at risk of flooding.

8.3 Training in flood fight procedures and techniques

SBFCA managers and staff are encouraged to participate in CA DWR flood fight training, which CA DWR provides annually. For more information, see CA DWR's flood fight manual (http://www.water.ca.gov/floodmgmt/docs/flood_fight_methods.pdf).

9 Evacuation and sheltering for a flood emergency within SBFCA's boundaries

In this chapter:

- Overview of evacuation within SBFCA.
- Evacuation planning assumptions.
- Evacuation policies.
- Situation analysis and coordination.
- Evacuation decision.
- Public notification about evacuation.
- Evacuation operations.
- Access control and reentry.
- Evacuation of special facilities.
- Assistance for the transportation-disadvantaged.
- Search and rescue.
- Mass care and shelter.
- Evacuation and care of domestic animals.

9.1 Overview of evacuation within SBFCA

The primary document governing evacuation in Butte County is Functional Annex E of the Butte County OA EOP. The primary document governing evacuation and sheltering in Sutter County is Annex 9, Evacuation and Mass Care/Shelter Plan, of the Sutter County OA EOP. This chapter of SBFCA's Flood Safety Plan summarizes information found in these county OA EOPs. Local law enforcement agencies, county sheriff departments, and the California Highway Patrol, when necessary, will coordinate evacuation routes and timings of said evacuations. SBFCA has no role to play in evacuations or mass care.

The decision to evacuate rests with the elected officials of the affected jurisdictional unit. Operational responsibility rests with local law enforcement, possibly assisted by local fire personnel.

If it appears that an evacuation may be necessary due to conditions in the field, the IC will provide a recommendation to evacuate to the Butte County and/or Sutter County emergency operations manager. If the need to evacuate is extremely urgent, the flood fight IC or Operations Chief may communicate directly with their law enforcement counterpart in the field and advise the county OA EOC(s). The county OA EOC(s) will advise nearby communities and reception centers.

During an event requiring an evacuation or shelter management, the emergency organization structure operates under SEMS.

9.2 Evacuation planning assumptions

Several assumptions inform evacuation planning flood disasters within SBFCA's boundaries, including the following:

- In a flood emergency, evacuation will be coordinated by the county OA EOC(s).

- Evacuation of large numbers of people due to a flood emergency will stress the limited capacities of roadways available for this purpose.
- It is likely that an evacuation due to a flood disaster will require more personnel and equipment than small municipalities (e.g., Biggs, Gridley, and Live Oak) can provide on their own. (It may even exceed the capacity of Butte County and/or Sutter County to provide sufficient personnel and equipment.)
- It is anticipated that the primary evacuation mode will be private vehicles.
- Most residents will have access to a personal vehicle and will be able to self-evacuate if given sufficient notification time. These persons will be able to take their pets, important documents, and key valuables with them in their cars, and they will be able to stay away from their homes for an extended period of time.
- Implementation of an evacuation will require extensive and detailed coordination among the county OA(s) and communities affected (communities that are evacuating and communities that are receiving evacuees).
- The capacity of available public evacuation shelter facilities may be limited. A high level of coordination will be necessary to effectively communicate protective action and shelter information to evacuees.
- As conditions change, evacuations may need to be terminated and evacuees still at risk would need to be directed to refuges-of-last-resort as quickly as possible.

Remember:

Six inches of water will reach the bottom of most passenger cars, causing loss of control and possible stalling; one foot of water will float many vehicles; and two feet of rushing water can carry away most vehicles, including sport utility vehicles (SUVs) and pickup trucks.

- Some aspects of this evacuation plan will vary based on the specific characteristics of the flood event, degree of vulnerability, and projected area(s) of impact.
- Some unknown fraction of the population will choose not to evacuate regardless of official requests to do so.

9.3 Evacuation policies

In light of the evacuation planning assumptions listed in Section 9.2, the communities within SBFCA's boundaries have developed the following policies:

- Evacuation will commence with the imminent and substantial threat of a flood. Communities will not wait until an actual levee breach or overtopping occurs before initiating an evacuation order.
- Governmental agencies and private entities will coordinate and cooperate to provide assistance to the transportation-disadvantaged.
- Persons who can self-evacuate will be encouraged to seek care and shelter using their own resources, and may be encouraged to travel a considerable distance away from the evacuation area.
- Planning activities will include the development and maintenance of procedures and agreements to support the coordination that will be required among the county OAs and affected communities.

9.4 Situation analysis and coordination

Emergency managers at the city and county levels will monitor the flood threat or hazard as it develops. The Butte County OA EOC and the Sutter County OA EOC will coordinate with other EOCs in the region to monitor the flood situation as it develops, and will determine the area(s) most likely to be impacted. The Regional Emergency Operations Center (REOC) will be notified. The county OA EOC(s) will monitor the progress of the evacuation and exchange information with the REOC on an established time schedule to promote effective coordination by all involved jurisdictions. Through this procedure, the State and the OA EOCs will coordinate the efficient deployment of resources and use of available evacuee shelter capacity, and effectively address modifications to evacuation routes, if necessary.

9.5 Evacuation decision

Under circumstances involving evacuations of multiple areas within each county, the Butte County OA EOC Director and/or the Sutter County OA EOC Director will likely recommend that a county-directed evacuation is necessary. Legally the decision to evacuate each municipality rests with the elected officials of that municipality. In unincorporated areas, the county has legal authority to decide to evacuate.

The California Office of Emergency Services (Cal OES) recommends the following sequence of events with regard to evacuation decision-making by city governments:

1. In preparation for a flood response, the city council should adopt by ordinance a standby emergency order regarding evacuation, which will take effect upon the declaration of a local emergency and the meeting of life-endangering conditions. The advantage to having such an ordinance in place is that the appropriate authorities will be empowered to act immediately upon the declaration of a local emergency, thereby expediting response time and allowing for pre-emergency planning.
2. The city council, or in its absence, the city manager (emergency operations manager), should issue a local declaration of emergency at the earliest possible time. This will authorize the local governing body to issue “orders and regulations necessary to provide for the protection of life and property,” including evacuation. If issued by the director of emergency services, the city council must ratify the emergency declaration within seven days.
3. The director of emergency services should then issue local emergency orders that specify who will enforce subsequent orders, what areas the orders apply to, what the relevant time period is, information about mass care and shelter, and what the jurisdiction’s policy is for people who choose not to comply with evacuation instructions.

9.6 Evacuation notification categories and traffic closure levels in Butte County

The following evacuation notification categories are used by the Butte County Office of Emergency Services:

- Immediate Evacuation Order: Requires the immediate movement of people out of an affected area due to an imminent threat to life. Choosing to stay could result in loss of life. Staying may also impede the work of emergency personnel. Due to the changing nature of the emergency, the Immediate Evacuation Order may be the only warning that people in the affected area(s) receive.
- Evacuation Warning: Alerts people in an affected area of potential threat to life and property. People who need additional time should consider evacuating at this time. An Evacuation Warning considers the probability that an area will be affected and prepares people for a potential Immediate Evacuation Order.

- Shelter-in-Place: Advises people to stay secure at their current location by remaining in place as evacuation will cause a higher potential for loss of life.
- Rescue: Alerts people that emergency actions are being taken within the affected area to recover and remove injured or trapped residents. Responders have the specific training and personal protective equipment necessary to accomplish the mission, i.e., hazard material spill, swift-water rescue. Boundaries of the area where rescue is planned should be identified on the incident map with notification that entry is restricted to rescue workers only.

The following traffic closure levels are used by the Butte County Office of Emergency Services:

- Level 4: Closed to all traffic, potential life hazard.
- Level 3: Closed to all traffic except emergency responders.
- Level 2: Closed to all traffic except emergency responders and critical resources, e.g., public works, utilities, animal rescue.
- Level 1: Open to emergency responders, critical resources, and residents only.

9.7 Public notification about evacuation in Sutter County

The evacuation notifications described below are used by the Sutter County Office of Emergency Management.

9.7.1 Pre-evacuation warning

On slow-moving events, pre-evacuation notice should be given to affected residents if it appears that hazardous conditions may warrant such action. Residents should be advised that they might have to evacuate on thirty (30) minutes' notice or less.

9.7.2 Advisory evacuation notice

An advisory evacuation notice is issued when conditions exist which indicate a mandatory evacuation order may be given in the near future. The threat to lives is not yet imminent, but due to rapidly changing conditions, the public is advised to prepare for the issuance of a mandatory evacuation order. Under an advisory evacuation:

- Residents are advised to leave the area.
- Residents with special evacuation needs are particularly encouraged to leave as soon as possible.
- Businesses are advised to take whatever precautions they deem necessary for protecting equipment and/or inventory.
- Access to the area under an advisory evacuation is unrestricted.

Advisory evacuations may also be issued when a mandatory evacuation order has been lifted in an area but the conditions in the area remain subject to rapid change and could again become serious.

9.7.3 Mandatory evacuation notice

A mandatory evacuation is ordered when conditions exist that seriously endanger the lives of those in a defined area, i.e., danger is imminent. Under a mandatory evacuation:

- All non-essential persons are ordered to leave the area immediately using the described evacuation routes.
- Generally, residents will not be forcibly removed from their own property.

- People found to be on the property of another, or on a public roadway, may be subject to arrest or removal from the area.
- Once out of the evacuated area, people will not be permitted to return until conditions permit.

9.8 Evacuation warning methods

All warning methods will be used to direct the affected population to evacuate. Wherever possible, the warning should be given on a direct basis as well as through the media. The use of law enforcement and fire emergency vehicles moving through the affected area with sirens and public address is usually effective. However, if used, this procedure should be communicated to the public in advance to preclude public confusion concerning the use of these vehicles. When used, vehicles should be employed in pairs. The first will get the attention of the people; the second will deliver the evacuation message.

Door-to-door notification should be considered, particularly in sparsely populated areas. Residential and health care institutions will be notified directly by the EOC or on-scene authorities. Law enforcement personnel will sweep the evacuated area to ensure all persons have been advised and have responded. Persons who refuse to follow evacuation instructions will be left alone until all who are willing to leave have been provided for; then, time permitting, further efforts will be made to persuade those who have chosen not to evacuate.

9.9 Ongoing evacuation information

The public information officers at each county OA EOC will ensure that evacuation information is disseminated to the media on a timely basis. Instructions to the public such as traffic routes to be used, location of temporary reception areas, and situation updates will be issued as that information becomes available.

In addition to emergency vehicle loudspeakers and door-to-door notification, emergency public information may be disseminated using the additional means described in Chapter 5.

9.10 Evacuation operations

9.10.1 Movement

It is anticipated that the primary evacuation mode will be private vehicles. Actual evacuation movement efforts will be conducted by the law enforcement agencies of the jurisdictions involved. The Planning Section will select evacuation routes at the time of the evacuation decision. Movement instructions will be part of the warning and subsequent public information releases. If possible, two-way traffic will be maintained on all evacuation routes to allow continued access for emergency vehicles. Law enforcement communications will coordinate use of wrecker services needed to clear disabled vehicles. City or county public works departments will provide traffic control devices such as signs and barricades.

9.10.2 Routes

In the case of an actual evacuation, the public will be notified as to which highway(s) to use. Butte County and Sutter County emergency managers can provide SBFCA with evacuation information for planning and training purposes.

9.10.3 Access control

Law enforcement agencies will establish a perimeter control to provide security and protection of property left behind. Disaster Area Access permits will be used to limit sightseers.

9.10.4 Re-entry

Reoccupation of an evacuated area requires the same consideration, coordination, and control as undertaken in the original evacuation. The emergency operations director/incident commander will make the re-entry decision/order after the threat has passed and fire, law enforcement, public works, and/or building division personnel have inspected the evacuation area for safety.

Specific re-entry activities include the following:

- Ensure that the threat which caused the evacuation is over.
- Ensure that homes have been inspected to determine if they are safe to re-occupy.
- Determine the number of persons in shelters who will have to be transported back to their homes.
- If homes have been damaged, determine long-term housing requirements.
- Coordinate traffic control and movement back to the area.
- Inform the public, through the PIO, of proper re-entry actions, particularly precautions they should take with regard to reactivating utilities. In addition, issue proper cleanup instructions, if necessary.

9.11 Evacuation of special facilities

Facilities such as day-care centers and nursing homes are expected to have evacuation plans in place and resources to carry out evacuations. All facilities of this type will be warned of the emergency situation.

9.12 Assistance for the transportation-disadvantaged

If deemed necessary by the city and/or county emergency managers, buses and drivers will be obtained from private transit companies and staged at a location to be determined based on the flood disaster conditions.

Information about evacuation and transportation for people with mobility challenges can be found here:

http://www.calema.ca.gov/chiefofstaff/pages/evacuation-and-transportation.aspx

9.13 Search and rescue

The Butte County Search and Rescue Team provides search and rescue services throughout Butte County. The Sutter County Sheriff's Department and affiliated organizations provide search and rescue services in Sutter County.

9.14 Mass care and shelter

Butte County and Sutter County have coordinated their mass care and shelter plans with the American Red Cross (ARC) and established standard operating procedures to ensure proper and consistent opening of shelters. In the event that ARC cannot open shelters, the Mass Care and Shelter Branch Coordinator(s) (located in the Operations Section) will open shelters.

The location of the shelters will be determined on a case-by-case basis, and will be communicated to the public at the appropriate time.

More information about Butte County's mass care and shelter plan can be found in Annex F of the Butte County OA EOP. Detailed information of how mass care and shelter fits within

the SEMS framework and specific responsibilities of each personnel classification can be found in Appendix 9 of the Sutter County OA EOP.

9.15 Evacuation and care of domestic animals in a flood disaster

9.15.1 Operations

In Butte County, the primary document governing care and evacuation of domestic animals in a flood disaster (or any emergency) is the Butte County Public Health Animal Disaster Plan.

In Sutter County, the primary document that governs evacuation and care of domestic animals in a flood emergency is Annex 10, Domestic Pets/Livestock Care Plan, of the Sutter County EOP.

When a county OA EOC has been activated, one point of contact, the County Animal Coordinator, will coordinate issues regarding domestic animals and livestock.

9.15.2 Responsibilities of owners

In the general scope of animal care, evacuation, and shelter, the pet or livestock owner is ultimately responsible. Information on emergency preparedness for pet and livestock owners can be found here:

- http://www.ready.gov/caring-animals
- http://www.humanesociety.org/about/departments/disaster_preparedness.html
- http://www.americanhumane.org/animals/programs/emergency-services/community-preparedness/
- http://awic.nal.usda.gov/farm-animals/disaster-planning

9.15.3 North Valley Animal Disaster Group

The North Valley Animal Disaster Group (NVADG) is an affiliate of the Butte County Public Health Department. The Public Health Department will direct NVADG in the evacuation of animals impacted by a flood disaster. The request and authorization to respond to a flood disaster (or other emergency) will be made through the Butte County Fire/CDF Emergency Command Center.

9.15.4 Yuba Sutter Domestic Animal Disaster Assistance

Note: The following text is from Be Prepared Yuba City!, a brochure published by the Yuba City Fire Department.

Yuba Sutter Domestic Animal Disaster Assistance (YSDADA) is a local volunteer organization created to provide evacuation assistance and shelter for domestic animals in the Yuba-Sutter area during a disaster.

YSDADA will work jointly with governmental, non-governmental, and private agencies and organizations and the public in the Yuba-Sutter area to promote the safety and well-being of domestic pets and farm animals affected by a governmentally declared disaster. The organization provides these animals with emergency evacuation, temporary shelter, veterinary care, and identification for reuniting animals with their owners. These goals are accomplished by using volunteers who have completed accredited disaster preparedness and response training.

YSDADA also provides public awareness to the needs of animals during a disaster, and educates agencies and animal owners about the importance of pre-disaster preparedness.

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10 Floodwater removal within SBFCA's boundaries

In this chapter:

- Overview of floodwater removal.
- Dewatering considerations.
- Environmental regulation considerations.

10.1 Overview of floodwater removal

With overtopping or failure of a levee flood protection system, the land protected by the levee system may become partially or fully inundated. Depending on the situation, there may be an immediate need to dewater that area to prevent further flooding or to protect the overall integrity of the flood protection system, or to remove the water to recover the area to pre-flood conditions.

USACE, Cal OES, CA DWR, Butte County and/or Sutter County, and affected cities would all coordinate to determine whether and when to undertake dewatering activities.

10.2 Dewatering considerations

The decision to dewater depends on a number of considerations, including:

- How many people are affected by the flooding?
- What is the value of the flooded land?
- What are the long-term consequences of not dewatering?
- Does it make economic sense to dewater the flooded area?

The following scenarios illustrate how these considerations may apply to a flood emergency.

10.2.1 Scenario 1—do not dewater or take any other action

Depending on the situation, it may be advisable to take no immediate action. For example, an inundated agricultural area with no threat to life or structures may be left flooded until waters recede naturally. For some areas, this choice may be made in advance of a flood event. Such a decision usually requires coordination among landowners, LMAs, local governments, CA DWR, USACE, Cal OES, and other stakeholders.

10.2.2 Scenario 2—close the breach; do not dewater

Closing the opening in a failed levee is generally the first step of any levee breach repair. It may be necessary to wait for the inflow to slow before taking this action. Rock and suitable materials must be available to armor the ends of the break before closing the opening with additional suitable material. After the breach is closed, it may be cost-effective to let the ground dry out on its own depending on the extent of flooding. Equipment and contractors must be mobilized, the ends of the breach must be accessed, and material for the closure must be available.

10.2.3 Scenario 3—repair breach; remove water by pumping

After the breach is closed, this alternative would remove water using available on-site or perhaps portable pumps. For large flooded areas, the time and expense for this action can be extensive. Should this scenario arise, local agencies will coordinate with CA DWR, and possibly USACE, on the acquisition of pumps, possible locations for pumps, and other logistics.

10.2.4 Scenario 4—repair breach; remove water by making a relief cut

The situation may warrant excavating a second breach in a levee system to allow flood waters to drain from behind the land side of the levee. This effort may also limit the depth of those flood waters behind the levee and prevent further flooding of areas within the basin, and may be employed under emergency conditions. Decision making in this scenario must consider that the second breach must be repaired in addition to the first breach.

Should this scenario arise, Butte County and/or Sutter County will coordinate with CA DWR to locate contractors, equipment, and supplies that might be needed. CA DWR will provide the hydraulic modeling to identify potential locations of excavations.

10.3 Plans for relief cuts

SBFCA and partner agencies have developed plans that address the possible use of a relief cut in the Sutter Bypass East Levee to reduce ponding depths at the south end of Yuba City. These plans are not for publication; contact SBFCA for more information.

10.4 Environmental considerations

Flood water removal projects are generally exempt from CEQA. Statutory exemptions include “emergency projects such as actions required to restore damaged facilities or mitigate an emergency” (CEQA Guidelines Section 15269). Nevertheless, legal counsel will be consulted prior to implementing a dewatering plan of action.

11 Essential Services Building requirements of SBFCA's member agencies

The cities and counties within SBFCA's boundaries have adopted (or are in the process of adopting) the following policies in compliance with California Water Code Section 9650(b)(6):

If the inhabitants are expected to be essential service providers, new buildings shall be required to be located outside an area that may be flooded in the event of any levee failure or they will be designed to be operable shortly after the floodwater is removed. They shall be constructed to minimize and resist flood hazards, either through location outside likely flooded areas or through design.

Structural systems and details set forth in working drawings and specifications are carefully reviewed by local responsible agencies using qualified personnel, and the construction process is carefully and completely inspected.

Nonstructural components vital to the operation of essential services buildings shall be able to resist, insofar as practical, the effects of flooding. It is recognized that certain nonstructural components housed in essential services buildings, including communications systems, main transformers and switching equipment, and emergency backup systems are essential to facility operations and that these nonstructural components should be given adequate consideration during the design and construction process to assure, insofar as practical, continued operation of the building after a flood.

"Essential Services Building" means any building used (or designed to be used), or any building that a portion of which is used (or designed to be used), as a hospital, fire station, police station, or jail. These buildings also include sheriff's offices, emergency operations centers, and emergency communications centers.

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12 SBFCA's flood emergency response and recovery administration, finance, and documentation

In this chapter:

- Record keeping during flood emergency response.
- Resource tracking during flood emergency response.
- Flood damage assessment documentation.
- After action reporting.
- Recovery operations documentation.

12.1 Record keeping during flood emergency response

SBFCA tracks, records, and reports on all SBFCA flood response personnel time.

SBFCA collects and maintains documentation on all flood emergency information needed for reimbursement by Cal OES or FEMA.

SBFCA is aware of the requirements to retain these records for audit purposes for three years after receiving the final FEMA close-out letters.

12.2 Resource tracking during flood emergency response

Flood response resources include (1) personnel or equipment to perform a specific operation, and (2) supplies and facilities to support on-scene incident operations. SBFCA's role is limited to providing one or two people for technical assistance at the Butte County OA EOC, the Sutter County OA EOC, and/or to support CA DWR decision making.

At the EOC(s) operating during a flood emergency, resource tracking occurs as follows:

- The Logistics Section typically orders supply items (e.g., food) and facilities (e.g., equipment staging). The Finance/Administration Section tracks the use of and maintains records on the resources applied to flood response.
- The Resources Unit (Planning/Intelligence Section) will track the rate of consumables used. When the approximate date of complete consumption approaches the date of reasonable delivery, the Logistics Chief will be notified. The Logistics Section shall initiate procurement in consultation and coordination with the Finance/Administration Section. The Logistics Section Chief will notify the Operations Section Chief.
- If the Operations Section Chief is concerned about possible loss of essential consumables, the Operations Section Chief may request procurement from the Logistics Section Chief. In no case shall any member of the Operations Section initiate procurement. In no case shall the Logistics Section begin procurement without advising the Finance/Administration Section.

12.3 Flood damage assessment documentation

In all jurisdictions in which damage occurs due to a flood emergency, inspections and assessments are recorded on ATC-20-2 forms and photographs are taken of all damages observed. These forms are forwarded to the appropriate EOC Planning Section as soon as practical. SBFCA has little or no role in this activity.

12.4 After-action reporting

After action reporting is completed by all agencies affected by a flood emergency. After action reports provide, at a minimum:

- Response actions taken.
- Application of SEMS.
- Suggested modifications to SEMS.
- Necessary modifications to plans and procedures.
- Training needs.
- Recovery activities to date.

The after action report is a public document that encapsulates lessons learned and implementation strategies for improvement.

12.5 Recovery operations documentation

SBFCA's role in recovery operations is limited to providing technical assistance. All agencies and jurisdictions that undertake recovery operations from a flood emergency will:

- Ensure disaster-related expenditures are easily distinguished from on-going activities.
- Maintain accurate accounting records for disaster-related expenditures.
- Keep recovery-related records for a minimum of three years after the last action on a state or federally funded disaster project.

13 Development and maintenance of SBFCA's Flood Safety Plan

In this chapter:

- Flood Safety Plan development, review, and maintenance.
- Training and exercises.
- Post-incident analyses and plan evaluation.

13.1 Flood Safety Plan development, review, and maintenance

SBFCA's Director of Engineering is responsible for developing, reviewing, and updating this Flood Safety Plan. The Director of Engineering will solicit input from individuals, jurisdictions, and agencies having responsibilities under this Flood Safety Plan.

Update/review schedule

This Flood Safety Plan will be reviewed at least annually. At least every four years this Flood Safety Plan will be reviewed in its entirety, updated, republished, and redistributed.

It will be modified as appropriate as a result of flood incident after reports and post-exercise critiques. This Flood Safety Plan may also be modified whenever responsibilities, procedures, laws, rules, or regulations pertaining to emergency management and operations change. These changes will be incorporated into this plan, published, and distributed to agencies on the distribution list, and newly identified stakeholders, as appropriate.

Figure 2 shows the SBFCA Flood Safety Plan maintenance cycle.

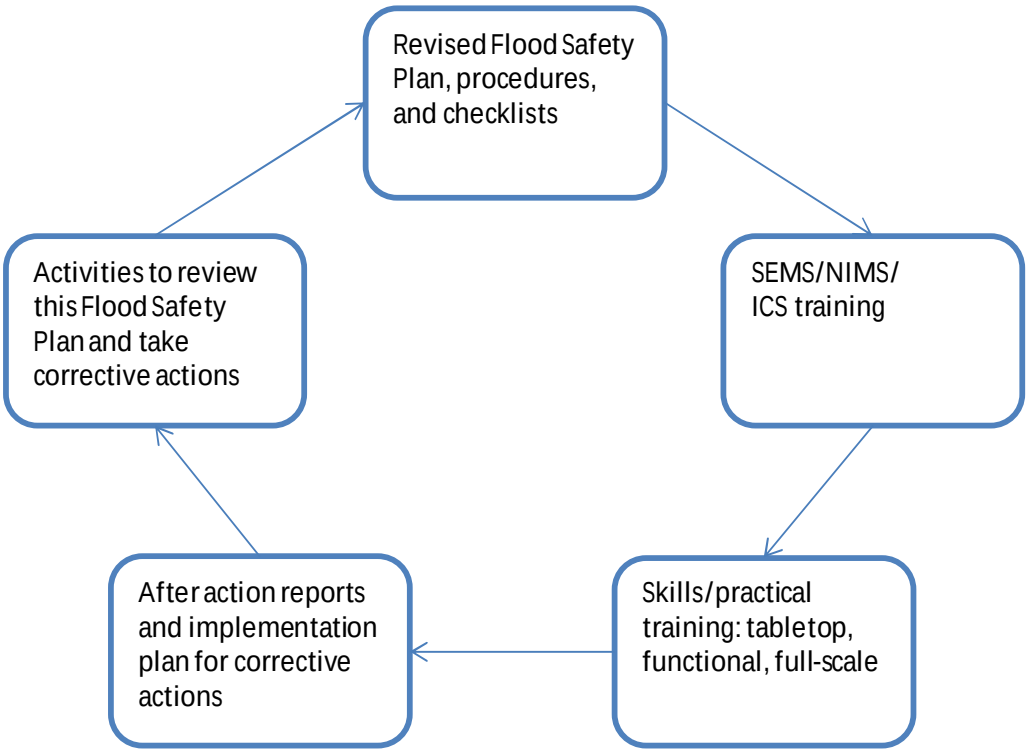

Figure 2. Flood Safety Plan maintenance cycle

13.2 Training and exercises

All SBFCA managers and staff are strongly encouraged to take advantage of the following training opportunities:

- FEMA's online training.
- CA DWR's annual flood fight training.
- County-provided training.

The SBFCA Director of Engineering will notify holders of this Flood Safety Plan of training opportunities or scheduled exercise associated with flood emergency management and operations.

The Director of Engineering is responsible for maintaining SBFCA's training records.

This Flood Safety Plan will be exercised regularly. The Director of Engineering will conduct or participate in emergency preparedness exercises in accordance with an annual exercise schedule. Such training will include tabletop exercises regarding flood water removal.

13.3 Post-incident analyses and Flood Safety Plan evaluation

The Director of Engineering will coordinate and facilitate post-incident analyses following emergencies and exercises. An after action report and implementation plan for corrective actions will be prepared by and distributed to those jurisdictions and agencies involved in the emergency or exercise.

14 References

14.1.1Local authorities and agreements

Sutter Butte Flood Control Agency. (2007). *Joint Exercise of Powers Agreement*, Yuba City, CA.

14.1.2 State authorities

California Code of Regulations, Title 19, Division 2, Chapter 1 (SEMS regulations).

California Government Code, Sec. 6508 (joint powers agencies regulations).

California Government Code, Sec. 8550 et seq. (California Emergency Services Act).

California Government Code Sec. 8607 et seq. (SEMS regulations).

California Water Code Sec. 128 (DWR authority during disasters).

California Water Code Sec. 9650 (Flood Safety Plan requirements).

14.1.3Federal authorities

Federal Civil Defense Act of 1950 (Public Law 920, as amended).

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Attachment 1. Response phase flood levels for jurisdictions within SBFCA's boundaries

Table 9 on the next page shows the names of the flood emergency response phases used in Butte and Sutter counties. In the table, the water surface elevations shown are triggers if the water reaches that elevation and is expected to rise.

Table 10 shows alternative triggers that may be used by Yuba City emergency responders and managers. Table 10 is reproduced from "Be Prepared Yuba City! A Household Preparedness Guide for Yuba City and Sutter County Residents" which was produced by the Yuba City Fire Department.

Table 9. Flood emergency response phase triggers, with corresponding water surface elevations, used in Butte and Sutter counties

		Gridley, Biggs – southern Butte County		Live Oak, Yuba City - northern Sutter County	
CDEC stage name	NWS stage name	Water surface elevation @ GRL gage (Zero datum = 0.00 ft USED)	Butte County phase name	Water surface elevation @ YUB gage (Zero datum = 0.00 ft USED)	Sutter County phase name
Monitor stage	Action stage	< 95.0 ft 95.0 ft	Planning and preparation Before impact	< 70.0 ft 70.0 ft 77.0 ft	Planning and preparation Ready for action Emergency
Flood stage	Flood stage	103.8 ft	Immediate impact	80.2 ft	Emergency
Danger stage	Danger stage	104.8 ft	Sustained operations	81.2 ft	Emergency
Top of levee	Top of levee	107.2 ft	Sustained operations	83.5 ft	Emergency

Table 10. Flood response triggers identified in "Be Prepared Yuba City!" (Yuba City Fire Dept.)

Warning stage	Elevation[1]	Description
Stage I	60 ft	Pre-emergency. River level is at 60 ft and forecast to rise. Feather River flows over the banks of the main channel at this elevation. River is monitored on a 24-hr basis.
Stage II	65 ft	Warning stage. River level is at 65 ft and forecast to rise. River is monitored at a minimum of twice a day with a levee patrol.
Stage III	70 ft	Full alert stage. River level is at 70 ft and forecast to rise. Flooding is possible, but not probable. River is monitored on an hourly basis by levee patrols.
Stage IV	75 ft	Emergency stage. River level is between 75 ft and 77 ft, and forecast to rise. Flooding is expected in south areas of the County. Hourly levee patrols continue.
Stage V	77 ft	Evacuation stage. River level is at 77 ft and forecast to rise. The river poses a significant flood threat. Hourly levee patrols continue.

1. Elevation is measured at the Yuba City side of the Fifth Street Bridge.

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