This document outlines the response expectations of the Yolo Operational Area due to a Flood and serves as a Hazard Annex to the Yolo County Emergency Operations Plan and to those local agencies within the County boundaries.

Yolo Operational Area Flood Hazard Annex

Annex to the Local Emergency Operations Plans

Version 0.6 Revised: November 2021

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HANDLING INSTRUCTIONS

1. The title of this document is the *Yolo Operational Area Flood Hazard Annex*
2. The information gathered herein is to be used for training and reference purposes within the Yolo Operational Area. Reproduction of this document, in whole or in part, without prior approval from the Yolo Office of Emergency Services is prohibited.
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SECTION 1.0: INTRODUCTION

1.1 OVERVIEW

Yolo County is located in the Sacramento-San Joaquin Valley. Areas adjacent to rivers, sloughs, creeks, and drainage canals and other low-lying areas are subject to flooding. State and local protective facilities, such as dams, bypasses, and levees, afford a level of flood protection; however, the flood events of 1986, 1995, 1997, 1998, 2017 and 2019 demonstrated that there is still a significant flood threat in the valley.

The amount of water flowing through the hydraulic system in Yolo County is determined by environmental conditions, natural events, and human-caused infrastructure. An extensive system of dams, levees, overflow weirs, pumping plants, and flood-control bypass channels strategically located on the Sacramento River and the various creeks and streams has been established to protect the region from flooding. These facilities control floodwaters by regulating the amount of water passing through a particular reach of each river.

Yolo County is vulnerable to a number of flooding sources caused by river floods, levee failures, drainage pump failure, and dam failure. These may produce large losses to public infrastructure and private property. Flooding caused by levee failure or overtopping remains a significant threat to valley locations.

Floodwaters are a common occurrence for communities adjacent to and in the lowlands of the Sacramento River, Cache Creek, and the Yolo Bypass in Yolo County.

Normally, wintertime storm floodwaters are kept within defined limits by levees and open lowlands, and cause no damage. Dams located outside Yolo County boundaries also help control floodwaters. Occasionally, however, a combination of frequent storms, extended heavy rain, and melting snow results in floodwaters exceeding normal high-water boundaries and causes damage.

The Table in Appendix B presents a record of water levels when Operational Area (OA)[1] jurisdictions come together with Yolo OES to start monitoring critical locations at several key monitoring stations throughout County. For more detailed information on flooding hazards, refer to the Yolo County Multi-jurisdictional Local Hazard Mitigation Plan.

1.2 PURPOSE

The purpose of this Flood Hazard Annex is to provide a general description and overall concept of operations for the jurisdictions within the Yolo Operational Area in response to flood emergencies. This annex describes specific procedures in place that will guide the public safety response to areas affected by a flood emergency and how the jurisdictions will coordinate operations with other jurisdictions both internal and external to the Yolo Operational Area.

This annex also accomplishes the following:

- Identifies the specific agencies and their responsibility to protect the health and safety of the Yolo Operational Area during a flood emergency
- Establishes the operational concepts associated with the organizational response to and recovery from a flood emergency.

[1] An Operational Area consists of a county and all political subdivisions within the county area – California Emergency Services Act- Article 9.

1.3 SCOPE

This Flood Hazard Annex is a part of the Yolo Operational Area suite of Emergency Operations Plans for the County of Yolo; Cities of Davis, West Sacramento, Winters, and Woodland; the Yocha Dehe Wintun Nation; the Housing Authority of Yolo County, Special Districts and the LMA plans listed throughout this annex including their respective appendices and attachments.

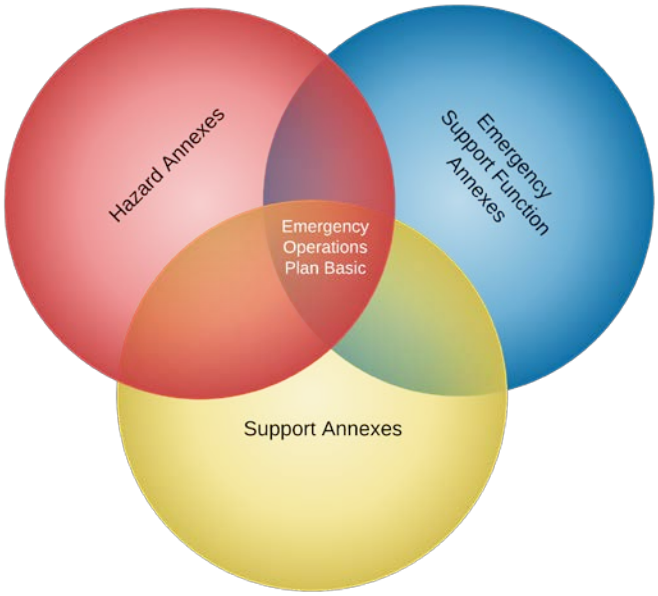


Figure 1 – Emergency Plan Annex Relationship

Flood hazard emergency planning involves preparing for realistic flood hazards and response requirements based upon a close analysis of historic information, hydrologic considerations, planned engineering activities, and resource availability.

This annex provides information on the Emergency Management organizations of the participating jurisdictions, including operational components such as command-and-control at the field level, the jurisdictional Emergency Operations Centers and inter-agency communications systems to be implemented in large-scale flooding disasters.

This annex also contains detailed protocols for the activation and operation of the Yolo Unified Floodfight Commands, debris removal and ingress/egress control procedures and forms, flood damage documentation, and the GIS mapping system as part of its attachments. Other protocols and procedures relevant to the scope of this annex are referenced.

This annex does not describe specific response procedures for dam failure, flood fighting on locally maintained flood-control levees and structures, or how to physically contain floodwaters in the event of a breach of those levees. Those operations are described in the emergency operations plans of Dam operators and levee-maintaining agencies (LMA's) responsible for flood-control infrastructure that can affect the Yolo Operational Area.

For information on dam failure response operations and levee flood fight operations, refer to the following documents, which are on file in the Yolo Office of Emergency Services (OES)

- California Department of Water Resources – Oroville Facilities Emergency Action Plan
- Cal OES Oroville Dam Failure Response Plan

- Department of the Interior, Bureau of Reclamation – Central California Area Office Facilities Emergency Action Plan
- Department of the Interior, Bureau of Reclamation – Northern California Area Office Facilities Emergency Action Plan
- Yolo County Flood Control and Water Conservation District – Indian Valley Dam Emergency Action Plan
- Yolo County Flood Control and Water Conservation District – Cache Creek Dam Emergency Action Plan
- Cal OES Northern California Catastrophic Flood Response Plan
- Reclamation District 108 – Grimes Flood Safety Plan
- Reclamation District 150 – Merritt Island Flood Safety Plan
- Reclamation District 537 – Elkhorn Basin Flood Safety Plan
- Reclamation District 787 – Grimes Basin Flood Safety Plan
- Reclamation District 900 – Flood Safety Plan
- Reclamation District 999 – Netherlands Flood Safety Plan
- Reclamation District 1600 – Elkhorn BasinFlood Safety Plan
- Reclamation District 2035 – Conaway Flood Safety Plan
- Knights Landing Ridge Drainage District – Flood Safety Plan
- Sacramento West Side Levee District – Grimes Basin Flood Safety Plan
- DWR Sacramento Maintenance Yard, Yolo County Levee Systems Flood Safety Plan
- Yolo County Services Area 6 (CSA6) – Knights Landing Levee System Flood Safety Plan

1.4 ASSUMPTIONS

The following assumptions lay the foundation for preparation of this annex and the emergency operations plans and protocols that it references:

- Flood emergencies or disasters are most likely to occur in the fall, winter, and spring due to extended or extreme precipitation events. Melting snow and spring run-off are secondary and less likely events to initiate a flood event.
- Levees in Yolo County are subject to liquefaction from an Earthquake.
- Potential major flood emergencies or disasters in Yolo County pose serious threats to public health, property, the environment, and the local economy. Except in the immediate vicinity of a levee breach or in close proximity to water channels, relatively shallow flood depths pose a lesser threat of death or serious injury.
- Flood warning will be received by Yolo County public agencies through a variety of means: National Weather Service (NWS) announcements, State warning systems, California Data Exchange Center (CDEC), and National Oceanic and Atmospheric Administration (NOAA) radio broadcasts.
- Citizens will receive warning through multiple systems: standard radio, television, Emergency Alert System (EAS), and the Yolo-Alert (Emergency Mass Notification System [Everbridge]), the Federal Integrated Public Alert & Warning System (iPAWS), Wireless Emergency Alerts (WEA), loudspeaker notifications or in-person notifications.
- Yolo OES coordinates flood warning within the OA in coordination with the Yolo Emergency Communications Agency (YECA).
- A major flood emergency in Yolo County will require a multi-jurisdictional response highlighting the need for effective field coordination and policy coordination at the Yolo OA and between neighboring counties.
- In flood emergencies or disasters, the Standardized Emergency Management System (SEMS) and National Incident Management System (NIMS) will be implemented by

responding agencies, and expanded as necessary.

- Yolo OES will, through the Yolo OA and the Yolo Unified Command organizations, ensure efficient coordination of its response functions with the functions of the Cities, the LMA's, and State and Federal agencies operating in the area.
- Major flood emergencies or disasters may overburden local resources, necessitating the establishment of effective mutual-aid processes between neighboring jurisdictions and counties within pre-planned unified commands and operational areas.
- Major flood emergencies or disasters will generate widespread public and media interest. Effective working relations with the media must be maintained to facilitate emergency public information and warning.
- A major flood emergency or disaster may require extended commitments of Yolo OA personnel and resources.

1.5 Roles and Responsibilities

This discussion of agency and jurisdictional responsibilities only addresses those responsibilities most relevant to the specific flood response plans. Discussion of general agency responsibilities can be found in the Emergency Operations Plans for each partner jurisdiction.

Levee-Maintaining Agencies

Local agencies have primary authority for both maintenance of levees and initial flood fighting efforts. Levee maintenance is provided by public levee districts, local government entities, private levee owners, and in some cases the State of California Department of Water Resources (DWR) acting on behalf of a local agency. Collectively these agencies are referred to as Levee Maintaining Agencies (LMAs). Refer to Appendix B – LMA Trigger Chart, for a list of LMAs and their response triggers within the planning area. The Department of Water Resources also has LMAs which are referred to as DWR Maintenance Areas (MA). These stretches of levee are located throughout Yolo County and are considered by DWR as a local LMA. Those area specific to Yolo County are in the DWR Sacramento Maintenance Yard, Yolo County Levee Systems Flood Safety Plan.

Levee-Maintaining Agencies (LMA's) with infrastructure that can affect the Yolo OA are as follows:

- Reclamation District 108 – River Farms
- Reclamation District 150 – Merritt Island
- Reclamation District 307 – Lisbon Tract
- Reclamation District 537 – Lovdal District
- Reclamation District 765 – Glide District
- Reclamation District 787 – Fair Ranch
- Reclamation District 900 – West Sacramento
- Reclamation District 999 – Netherlands
- Reclamation District 1600 – Mull District
- Reclamation District 2035 – Conaway Ranch
- Knights Landing Ridge Drainage District (KLRDD)
- Sacramento West Side Levee District (SRWSLD)
- DWR Sacramento Maintenance Yard, Yolo County Levee Systems
  - Cache Creek
  - Putah Creek
  - MA 4 (Sacramento River)

  - Sacramento Bypass
  - Willow Slouth Bypass
  - Yolo Bypass (East and West Levees)
- Yolo County Services Area 6 (CSA6) – Snowball District

These LMA's have responsibility for the integrity, improvement, operations, and maintenance of their flood control infrastructure, such as levees and drainage systems, in a flood. Besides maintaining and implementing appropriate flood safety plans to meet those responsibilities, these LMA's are responsible for participating in the Yolo Unified Commands and Yolo OA.

During flood emergencies, an LMA is the organizer of levee patrols and levee flood fight activities in high-hazard situations, and is responsible for organizing material and equipment for conducting flood fights. The LMA is also responsible for following established communications protocols for informing the Yolo OES and the Yolo Unified Commands, assigned during the incident, of the situation on their levees.

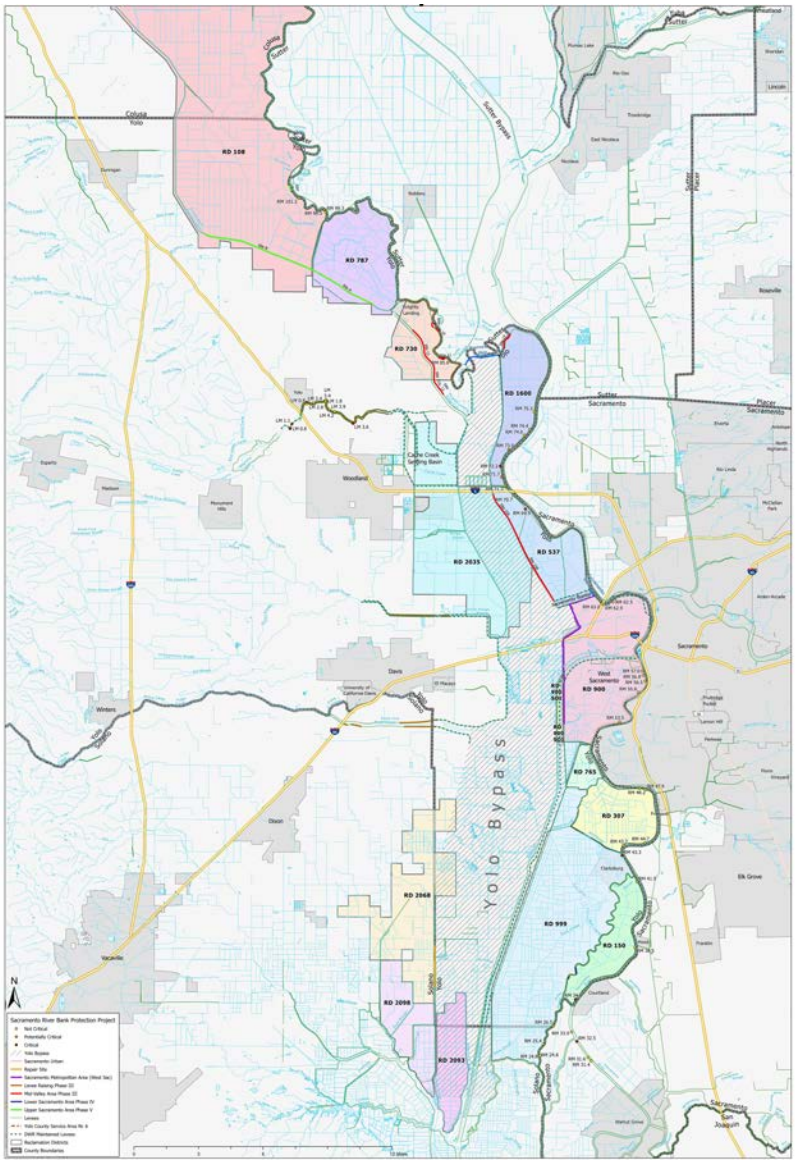


Figure 2 – Yolo LMA Areas of Responsibility

YOLO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Since its creation in 1951, the Yolo County Flood Control & Water Conservation District has served the needs of the local community by managing water resources for farming while stabilizing groundwater for other uses with progressive and pro-active water planning.

Today, the District manages three dams, two hydroelectric plants, two reservoirs, more than 150 miles of canals and laterals and one of the world's longest, inflatable rubber dams. District boundaries encompass 195,000 acres of Yolo County, including the cities of Woodland, Davis and Winters, and the towns of Capay, Esparto, Madison and other small communities within Capay Valley.

Yolo County's primary source of agricultural water comes from 50 miles away in Lake County. The District obtained the rights to store water in Clear Lake in 1967 when it purchased the privately owned Clear Lake Water Company and the Cache Creek Dam. This gave the District the potential to release up to 150,000 acre-feet of water annually.

However, the District's water right to store water in Clear Lake did not provide enough water to supply farmers during dry years, therefore the District constructed the Indian Valley Dam and Reservoir in 1974-1975. - With the completion of the Indian Valley Reservoir in 1975, the District's water resources became less vulnerable to the dry years which often limit water supplies in Yolo County. The six-mile long, one-mile wide reservoir with a gross capacity of 300,600 acre feet, provides long-term irrigation storage. The District manages the water that the reservoir holds by releasing it as needed. The dam includes a hydroelectric plant. The cost of the dam and reservoir exceeded $9 million and were funded, in part by two bond issues that were retired on time leaving only a loan, originally scheduled to be retired in 2017. However, due to careful financial management, that loan was retired in 1998 making the project debt free.

The total water supply available to the District water users include surface water from Clear Lake, Indian Valley and Cache Creek, and groundwater recharged by the District's operations. In all, the District has surface water storage averaging, over a long term, nearly 200,000 acre-feet per year.

The Yolo Water and Power Company finished construction of Cache Creek Dam in 1914. It is situated five miles downstream of Clear Lake and was built to store winter water in Clear Lake that would normally run-off into the Sacramento River. Cache Creek is the outlet from Clear Lake, but a rock ledge known as the Grigsby Riffle limits rate at which water can flow past. In 1998, the spill gate of the dam was modified to increase safety and minimize damage from floating debris.

The Capay Diversion Dam is located approximately two miles above the town of Capay on Cache Creek. This dam was built by the Yolo Water & Power Company and it serves as the headworks for the canal system. Here, the water released from Clear Lake and Indian Valley Reservoir is diverted into the West Adams and the Winters canals, which then feed the entire canal system. The Capay Dam underwent a major renovation in 1994 which included the installation of one of the longest inflatable dams in the world. The inflatable dam improves safety and the District's ability to deliver water.

Located at the base of the western foothills, north of the town of Winters, the Chapman Reservoir is a small, 280 acre-foot dual-purpose reservoir the District maintains for flood control and irrigation purposes.

YOLO COUNTY, THE CITIES (DAVIS, WINTERS, WEST SACRAMENTO AND WOODLAND), THE TRIBE AND SPECIAL DISTRICTS

The County is responsible for managing public safety response in the unincorporated area, while incorporated cities are responsible for public safety within their jurisdictions. The response actions associated with these responsibilities can change based on whether the primary flood incident is due to Levee or Dam failure. The Yocha Dehe Wintun Nation is responsible for the safety and security of their Tribal lands from a flood event. The Tribal Nation has many locations that are critical to the tribal citizens. The tribal lands, trust lands and tribal citizenry and their safety and security are critical. The Tribe's integration into the flood response plays a significant role and is a key partner with the County and the communities near their tribal lands.

During Levee Failure

All levels of government share responsibility for flood fighting or supporting flood fight efforts. Local government agencies, including special districts, state agencies, and federal agencies all have specific responsibilities during a flood fight. The necessity to initiate a flood fight may result from overflow of a natural waterway, overflow of a waterway confined by levees, rising lake waters, dam overtopping, failure of a levee, or other circumstances. Flood fighting is initiated when flood control features (levees, channels, etc.) begin to exhibit signs of stress such as seepage, boils, erosions, slips, and can progress into a more critical issue resulting in a threat to life and property.

Flood fighting on levees is the responsibility of the LMA, which will assume the role of Incident Commander (IC) in most circumstances. The LMA will notify its Operational Area (OA) of the potential identified threat. The LMA will also notify DWR's Flood Operations Center (FOC) about the potential identified threat and may ask for technical assistance. If a flood fight exceeds the capability of the LMA or if communities are threatened, the responsible city or county will assist with the flood fight as much as possible.

When this occurs, they may call upon Yolo County who assist in several ways.. The first is to coordinate information, resources and support to the unincorporated areas of Yolo County. The second, is to provide that same support to Cities and Special Districts (local government) within the geographical boundaries of the County. The County, as the Operational Area coordinating agency will work with the affected jurisdictions to provide support for resources needed or technical assistance ordering through existing State Departments and private vendors. This process of coordination is documented in detail in the Yolo County Emergency Operations Plan (EOP). For more information, refer to the County EOP, Basic Plan.

In Yolo County, there are special circumstances that need to be documented specifically in this Annex, those are as follows:

The RD 900 is a dependent District to the City of West Sacramento and therefore both agencies works closely together on a day to day basis and in an emergency situation when there is a threat to one of RD 900's levees. They also work collectively on a specific stretch of levee that flanks the

Deep Water Ship Channel. This area is owned and maintained by the US Army Corps of Engineers and protects a critical area of the City. The City also works closely with DWR when the water in the Sacramento River reaches 29 ft. at the I Street Bridge. When this occurs, the Sacramento Weir gates are typically opened and DWR will need the support of West Sacramento public safety agencies (Law enforcement and Fire) to ensure the opening of the weir gates are safe.

Additionally, the Cities of Davis and Woodland work closely with DWR for the levees they maintain near their jurisdictions. Close coordination with local, state and federal agencies is paramount in a flood response scenario.

During Dam Failure

Depending on which dam(s) are affected, how full their corresponding reservoirs are and the type of failure, the response within Yolo can be very different.

Dams exist throughout Northern California that could cause a sheltering response within Yolo without a physical inundation of water within the County boundary. This response will vary as to which jurisdictions assist with sheltering depending on the evacuation routes of the primary affected counties.

Three Dams within the County are not regulated by the Federal Energy Regulatory Commission (FERC) and therefore do not have Emergency Action Plans. These Dams are not anticipated to have adverse effects to populated areas due to either their size and/or control features:

- Davis Creek Dam
- Lower Bandy Dam
- Cache Creek Settling Basin Weir

Six additional Dams have the potential to cause the sheltering effect as described above as well as water inundation effects[2]:

Cache Creek – A failure of Cache Creek Dam could cause inundation over the length of Cache Creek itself and could overbank the creek at various points (especially low lying). This could cause evacuation by Yolo County of properties close to the creek and sheltering.

Folsom – Waters from a Folsom Dam failure will travel west to the Sacramento river. If the Sacramento Weir were opened to alleviate pressure, waters would flow into the Yolo Bypass as part of normal flood control design. A minimal direct affect within Yolo will be inherent. Jurisdictions within Yolo could be asked to assist with sheltering residents from Sacramento County.

Indian Valley – A failure at Indian Valley would cause flood waters to flow along Cache Creek. This would cause an evacuation of Yocha Dehe Wintun Nation citizens in the Tribe's primary housing area, evacuations throughout the unincorporated area from Rumsey through to Brooks, areas within Esparto and potentially inundate areas on the north west side of the cities of Woodland and Davis. The Cities of West Sacramento and Winters may be involved in shelter operations as they would not be affected by water inundation.

Monticello – Waters from a Monticello Dam failure will travel East along Putah creek. This would cause an evacuation of the entire City of Winters and most of the outlying residents in the unincorporated area (the responsibility of the County). The majority of the City of Davis and the

[2] Inundation modeling of Dam's is based on a full reservoir and full failure of the primary Dam in most cases and therefore represents a worse case scenario.

University of California Davis would also be affected by inundation of varying heights. The Cities of West Sacramento and Woodland may be involved in shelter operations as they would not be affected by water inundation.

Oroville – A failure at Oroville Dam could cause water inundation from North to South in Yolo extending along the eastern border of the County. All jurisdictions within Yolo would need to work closely with Solano and Sacramento counties for a sheltering strategy if all jurisdictions were impacted at the same time. If flood waters only affect the critical infrastructure located east of Davis and Woodland and west of the Yolo bypass, all jurisdictions involved will engage in emergency response resource acquisition and allocation to ensure citizens can remain in their homes with as little impact as possible.

Cal OES maintains a buffer evacuation boundary within their ***Oroville Dam Failure Response Plan*** that indicates an evacuation of Woodland, Davis & West Sacramento.

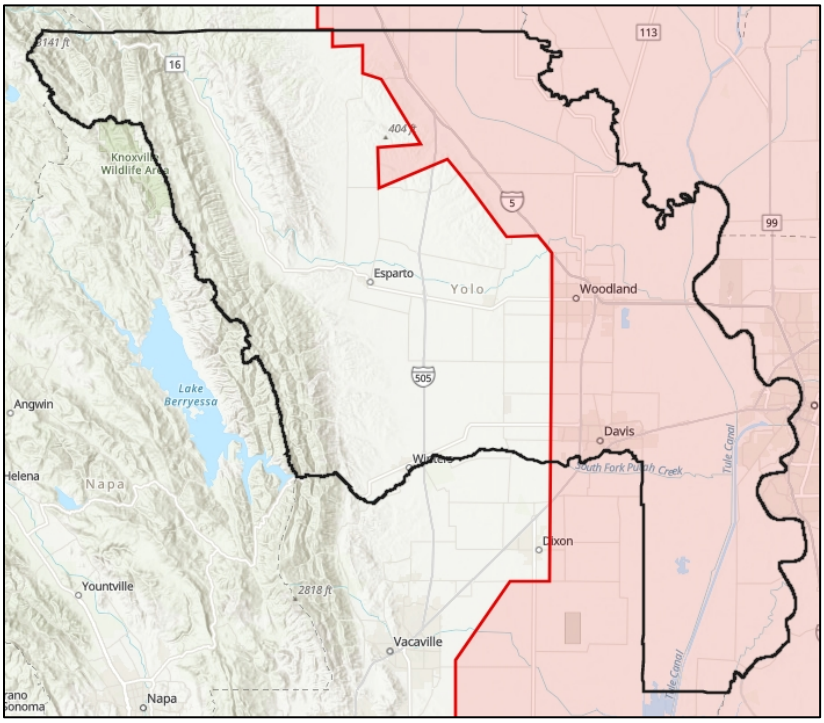


Figure 3 – Cal OES 2017 Oroville Dam Evacuation Buffer Zone

Shasta – Waters travelling South from a failure at Shasta could affect the town of Dunnigan and West Sacramento if the waters are held to the east by the Yolo Bypass levee system. The effects of inundation would be minor. Jurisdictions within Yolo may be involved in shelter operations to assist counties to the north who may be evacuating.

YOLO OPERATIONAL AREA

Yolo OES, acting as the lead agency for the Yolo OA, takes the lead role in coordinating resource management and information flow among all local public jurisdictions that have a role in flood response. The OA is the contact point for State of California response agencies.

Importantly, the Yolo OA will also establish and support, in conjunction with surrounding counties, unified flood fight commands among established local jurisdictions, to integrate and coordinate field response operations of all public jurisdictions in order to more efficiently accomplish field

response objectives.

The Yolo Operational Area EOC has the lead role in support of flood operations and to support the Field Incident Commander(s) and County field operations depending on the location of the incident and/or incidents, and to coordinate and integrate response operations through the Yolo Operational Area.

Yolo OA will support the operations of the Yolo Unified Flood Fight Commands. Yolo OA will also maintain the Disaster Service Worker Program and work with jurisdictions to ensure that volunteers and other appropriate emergency staff are appropriately registered in the program upon activation or recruitment.

Yolo County maintains and hosts the Yolo County Emergency Operations Center (EOC) as well as the other jurisdictions within the County. The EOCs support operations within their jurisdiction and the operational area organization, and the Yolo Unified Flood Fight Commands established at the time of a flood emergency. EOC functions include prioritization and allocation of scarce resources, including mutual aid, information sharing, and conduct coordination processes, in accordance with the Yolo Operational Area and the emergency operations plans of local jurisdictions. The County organization in the EOC will also provide management and general staff support to the established unified flood fight commands directing field operations in the unincorporated areas of the County.

The Yolo Operational Area Planning/Intelligence Section will provide disaster information and situational status to participating jurisdictions upon activation in an emergency. Yolo County will participate in the disaster information-sharing process.

It is anticipated that whether the flood hazard be from a Levee or Dam incident that the County EOC will be transferred into the Operational Area EOC to provide coordination among all response agencies and interface with State and Federal governments as identified in California Government Code[3]. The OA EOC will also activate if Yolo is NOT directly impacted by flood waters and it's neighboring jurisdictions are to facilitate mass care and shelter operations within the County. For additional information see the ***Yolo Operational Area Emergency Support Function (ESF) 6 Annex.***

CALIFORNIA GOVERNOR'S OFFICE OF EMERGENCY SERVICES

The mission of California Governor's Office of Emergency Services (Cal OES) is to oversee the State's ability to respond to emergencies that threaten lives, property, and the environment. Government Code § 8587 gives Cal OES the authority to coordinate the emergency activities of State agencies, and to delegate power for response once local resources are exhausted. Cal OES supports local emergency operations through the respective Cal OES Regions. Yolo County reports information and resource needs to the Cal OES Inland Region. Cal OES also maintains two plans that, when activated, will cause a heavy level of interaction between the Yolo OA EOC and the Cal OES Inland Region.

During an activation of the Cal OES Northern California Catastrophic Flood Response Plan (NCCFRP) Yolo is placed in one of the northernmost Branches (Branch I). Since Yolo shares a hydrologic connection with two of the counties in Branch II via the Bypass system in the State Plan of Flood Control and shares cross jurisdictional levee districts with Solano (Branch IV). considerable interaction with these branches will be necessary.

[3] California Government Code 8607 - Title 19, Division 2, Chapter 1 §2409 – Standardized Emergency Management System (SEMS) Regulations.

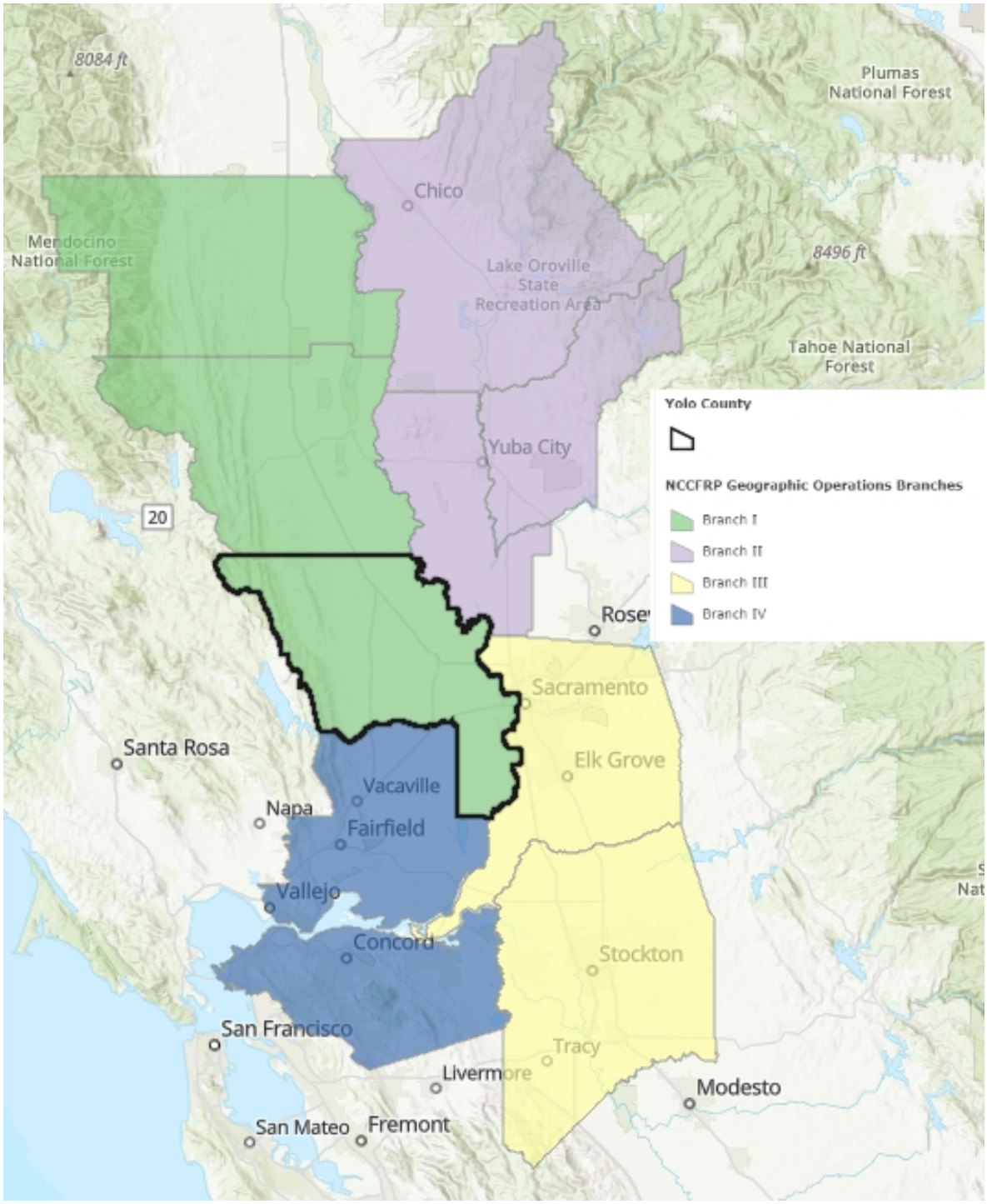


Figure 4 – Cal OES NCCFRP Geographic Operations Branch Divisions

Cal OES has also drafted a new ***Oroville Dam Failure Response Plan*** that divides response into two Area Commands as shown in Figure 5 below.

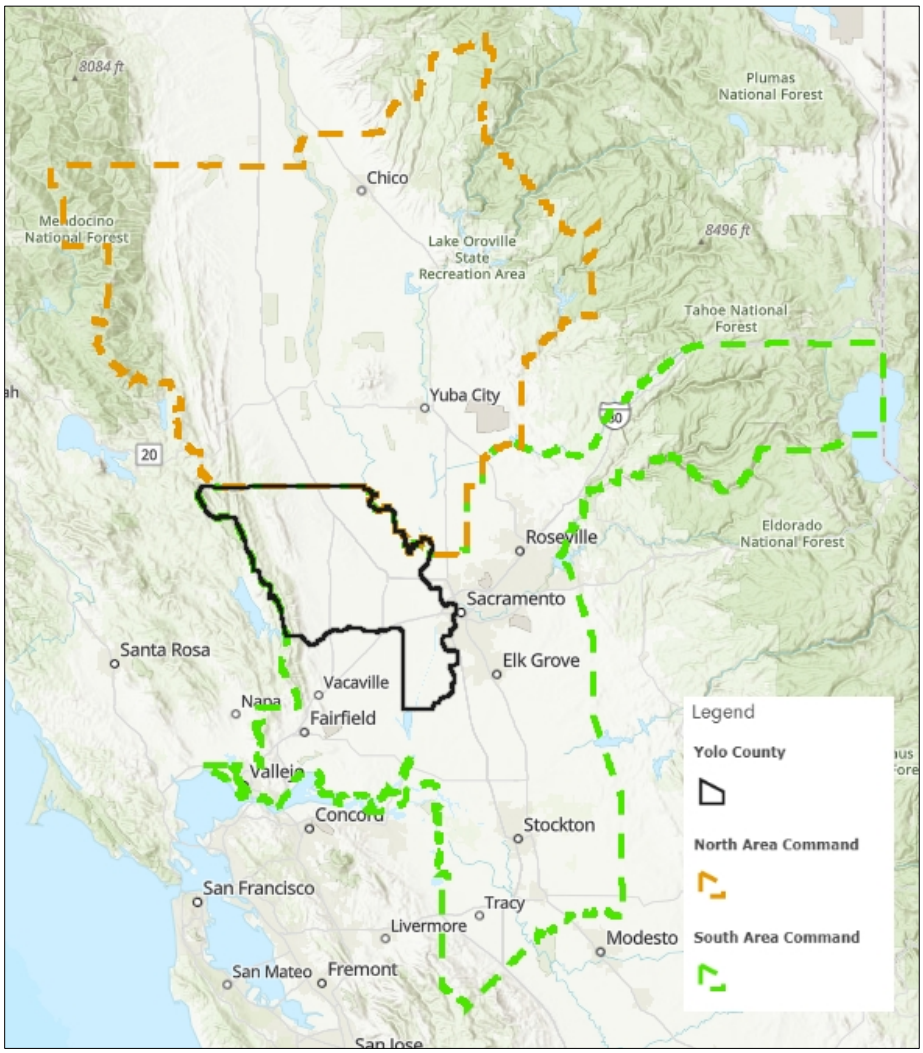


Figure 5 – Cal OES Oroville Dam Failure Response Plan Area Commands

If both plans are activated at the same time, Cal OES will need to work closely with Yolo to ensure that information and resources from Branch I and the South Area Command are incorporated into the response structures being used within the OA (7 EOC's, at least 2 DOC's and potentially 3 Unified Flood Fight Commands).

California Department of Water Resources

The mission of California Department of Water Resources (DWR) Division of Flood Management is to prevent the loss of life and reduce property damage caused by floods. The Department Flood Operations Center (FOC) in Sacramento will provide technical expertise and flood fight resources to local agencies through a request from local operational areas. Additionally, DWRs Division of Safety of Dams (DSOD) is the responsible Operations and Maintenance agency for the Oroville Dam.

DWR provides flood fight technical and direct assistance to local agencies. Local agencies can request assistance per guidelines described in the Levee Threat Mitigation Process dated September 2012. The diagram in Appendix D shows an overview of the request and review process used by DWR to help prioritize resource allocation in the face of multiple requests for assistance by local agencies across a large geographical area (e.g. Butte County to the South Delta). For more information, please consult the ***Levee Threat Mitigation Process Guidelines***.

Once a request is made to the State by an OA, DWR can provide technical advice and assistance concerning flood fight and emergency flood control measures. Examples of assistance include consultations with flood fight and geotechnical specialists to assess a levee issue, advice on flood fight methods, and/or providing flood fight materials (sand bags, plastic sheeting, flood barriers, twine, etc.).

DWR staff dispatched to the field from any DWR unit will work through the Yolo Unified Flood Fight Commands (UFFC) to ensure coordination of DWR activities with other response functions occurring in the County.

DWR has special authority under Water Code Section 128 to assist Reclamation Districts: Levee-Maintaining Agencies with flood fight operations. DWR maintains the State-Federal Flood Operations Center (FOC) to perform these functions and support the operations of other State and Federal agencies. The District will maintain communications with the FOC in order to receive and provide information with that facility, and to request technical assistance. The District will communicate with the FOC through telephone systems or at multi-agency coordination activities within the unified flood fight command where FOC representatives are present.

The Delta Flood Emergency Preparedness, Response and Recovery Program (Delta ER) describes DWRs actions during flood emergency response. The intent of this plan is to have a coordinated and effective multi-agency response effort during a large-scale flood emergency where DWR works in concert with the other local, state, and federal flood emergency agencies. The objectives of the program are to:

- Protect the lives, property, and infrastructure critical to the functioning of both the Sacramento- San Joaquin Delta and California.
- Protect water quality and restore water supply for both Delta and export water users.
- Reduce the recovery time of California's water supply from catastrophic flood to less than six months.
- Minimize impacts on environmental resources.

The following Table of agencies are involved in developing the Delta ER components:

Local and Regional Stakeholders	State	Federal
Five County Operational Area Emergency Managers (Contra Costa , Sacramento, San Joaquin, Solano and Yolo)	Governor's Office of Emergency Services (**Cal OES**)	US Army Corps of Engineers (**USACE**)
Local Reclamation Districts and Levee Districts	Central Valley Flood Protection Board (**CVFPB**) Delta Stewardship Council (**DSC**)	California-Nevada River Forecast Center (**CNRFC**) National Oceanic and Atmospheric Administration (**NOAA**)
State Water Contractors, Public Utilities	California Coast Guard (**CCG**) State Parks and Recreation	Federal Emergency Management Agency (**FEMA**) US Bureau of Reclamation
Delta Protection Commission	DWR: Operations and Maintenance (O&M), Executive	National Guard

Table 1 – Delta Planning Partners

California Department of Fish and Wildlife (DFW)

The mission of the California DFW Office of Spill Prevention and Response (OSPR) is to provide response to spills of oil and other deleterious materials and to restore and enhance affected resources. OSPR meets quarterly with USCG and other stakeholders to update Area Contingency Plan (ACP) information such as use of volunteers in an oil spill, local government representation in the unified command, and sensitive site protection strategies. This ensures that information is current and that best practices are being utilized.

To aid their mission, OSPR maintains a current database of water quality information relevant to emergency response operations. This database includes information on environmental resources identified by the ACP as at risk, assets of economic importance, strategies for protecting specific sites, and shoreline access points. Coordination with OSPR is an important tool for water quality response operations throughout the Delta region.

During catastrophic flooding events, water can be contaminated by many hazardous chemicals. Additionally, due to rapid hydraulic changes, water quality can be impacted as a result of salinity influxes.

Federal Emergency Management Agency

The primary purpose of the Federal Emergency Management Agency (FEMA) is to coordinate the response to a disaster that has overwhelmed the resources of local and State authorities. The Governor of California must proclaim a state of emergency and formally request FEMA and Federal assistance from the President to respond to disaster. FEMA's Region IX, Operations Section in Oakland, CA works closely with Cal OES to deliver Federal assistance in support of local and State response efforts. Region IX has a Regional Response Coordination Center (RRCC) that serves as the Federal government's emergency coordination center. Within the RRCC, the Watch Center provides situational awareness for the entire Region IX area of responsibility. The Watch Center is a 24-hour, seven-days-per-week function that maintains situation awareness of incidences and provides FEMA Headquarters and Region IX with information on resource coordination to local, State, and Federal agencies.

U.S. Department of the Interior – Bureau of Reclamation

The mission of the Bureau of Reclamation (BOR) is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Originally conceived under the Reclamation Act of 1902 as a means to help settle the West by providing infrastructure for agricultural development, the Reclamation program focused on the construction of dams and facilities to store and convey water. Unlike other Interior agencies that operate under an overall organic act or authority, Reclamation operates under specific authority for each project. As the potential for additional project purposes was identified by the states and local entities, Congress supplemented the Reclamation Act to add hydropower production, flood control, municipal and industrial water, recreation, and fish and wildlife enhancement to the list of authorized project purposes.

The Bureau of Reclamation is the primary response agency for several of the dam's that could affect Yolo including:

- Folsom
- Monticello
- Nimbus

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) flood disaster assistance program supplements and supports State and local interests upon their request for assistance to the Federal government. USACE is authorized to provide direct flood emergency response assistance relative to:

- Emergency operations, flood fight assistance (technical and direct assistance)
- Rehabilitation of damaged flood control projects
- Advance measures (technical and direct assistance)

When flood conditions exceed, or are predicted to exceed, the response capability of levee-maintaining and/or reclamation districts and local and State governments, USACE has the authority under Public Law 84-99 to provide emergency flood response assistance without further specific authorization of Congress. USACE can furnish assistance for flood emergency preparation, flood fighting, and the repair or rehabilitation of flood-control works threatened or destroyed by flood.

USACE assistance may also include the provision of flood fight personnel for technical advice, and equipment (such as sandbags, plastic sheeting, pumps, or other materials). In the event of imminent threat of catastrophic flooding, USACE may provide equipment to protect against substantial loss of life and property.

USACE staff dispatched to the field will work through the Yolo Unified Flood Fight Commands to ensure coordination of USACE activities with other response functions occurring in the County.

When the State of California is unable to fulfill an OA's request for assistance, or if the State needs additional resources, DWR can request flood response assistance from the USACE under Public Law (PL) 84-99. DWR is the State's liaison to USACE for its emergency assistance program under PL 84-99. USACE has primary federal authority for assisting states with flood fight efforts that meet the criteria established by PL 84-99. The law includes six key areas of assistance:

- Disaster Preparation
- Emergency Response
- Rehabilitation
- Water Assistance
- Advance Measures
- Hazard Mitigation

PL 84-99 is the first dedicated federal authorization for emergency flood preparedness, response, and recovery. Following the passage of PL 84-99, DWR established a Memorandum of Understanding (MOU) with USACE that designates DWR is the only California state agency that can make requests under PL 84-99. DWR facilitates assistance to local agencies during the entire PL 84-99 process. Some examples of the assistance USACE can provide are technical experts and materials to address flooding issues, emergency contracting, and directing flood fight operations.

USACE, Sacramento Division, West Bank Yolo Bypass Levee

The USACE is responsible for the maintenance and administration of a stretch of levee that runs along the west side of the Deep Water Ship channel, see location on the map in Figure 6. The Deep Water Ship Channel essentially divides the City, creating two basins – north and south. The north basin is a ring levee bounded by the Sacramento Bypass levee on the north, the Port North levee on the south, the Yolo Bypass levee on the west and the Sacramento River West North levee on the east. The south basin is an 'open' ring levee that is bounded on the north by the Port South levee and on the east by the Sacramento River West South levee. The South Cross levee and the Deep Water Ship Channel West levee provide some flood protection to the basin on the south and west, but the Deep Water Ship Channel provides a hydraulic open pathway for floodwaters to encroach into the south basin via backwatering during high stage events in the Yolo Bypass.

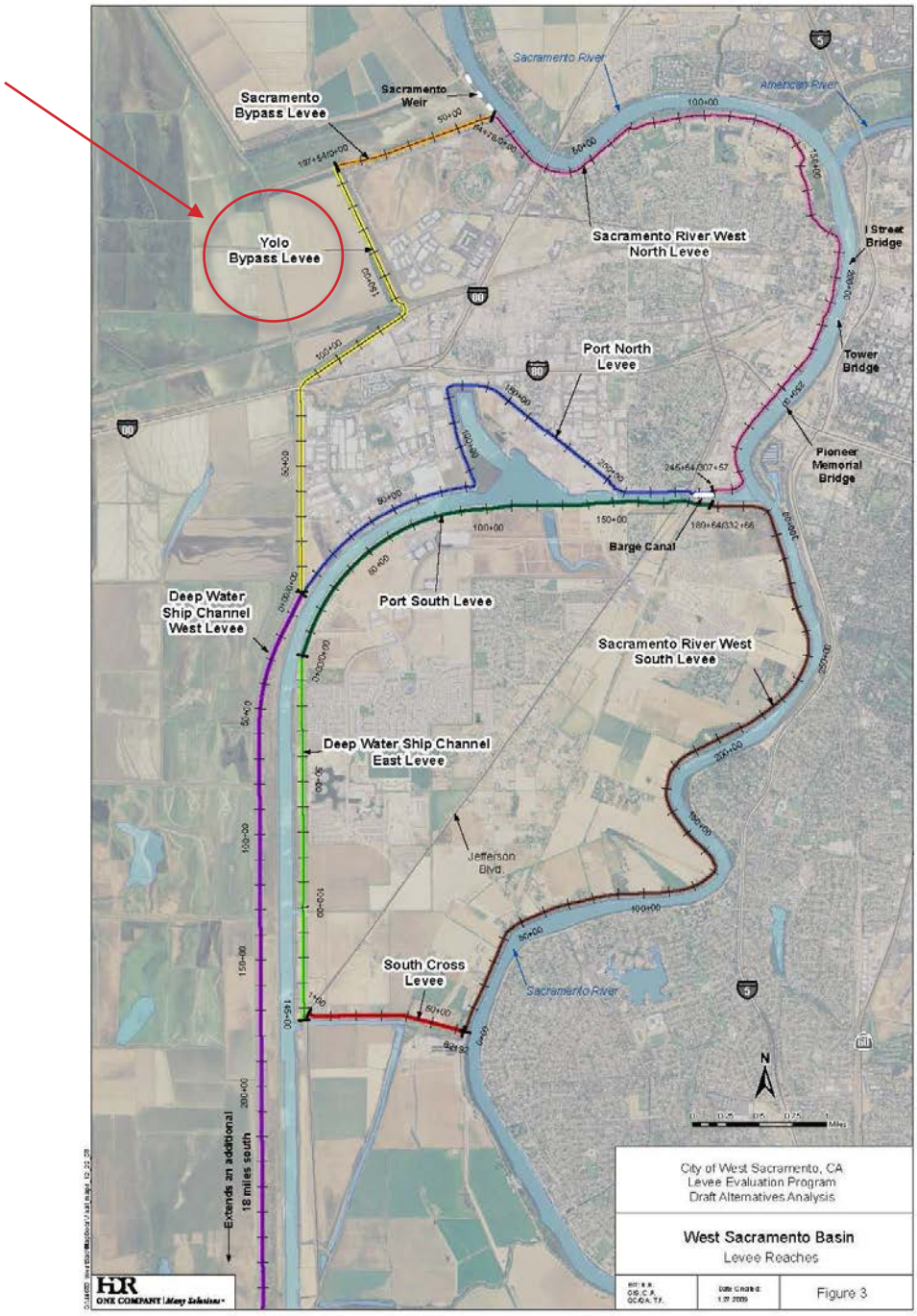


Figure 6 – West Sacramento Levee System

U.S. COAST GUARD

The Captain of the Port (COTP) for U.S. Coast Guard's (USCG's) San Francisco Sector oversees marine activities in an Area of Responsibility (AOR) that covers most of Northern California. Within this AOR, the COTP is responsible for the maritime safety of its navigable waters, the maintenance of the aids to navigation within them, and the prevention of marine pollution. The latter is part of the USCG's marine environmental protection mission. During incidents that impact these waters, including the entire San Francisco Bay and the Delta region, (including Yolo County and its major navigable tributaries), the COTP serves as the Federal On-Scene Coordinator. USCG can provide search-and-rescue (SAR) capabilities and spill response for oil and hazardous material throughout the Delta region as part of its response efforts.

Closure of Delta Waterways

Emergency situations such as projected high water events, flooding, or emergency operations such as flood fighting may require restrictions on vessel movement in the Sacramento-San Joaquin Delta waterways.

The Deep Water Ship Channel connects the Delta to the Port of West Sacramento, Flooding can affect deep draft shipping and commerce impeding traffic to and from the Port of West Sacramento.

The U.S. Coast Guard has authority to restrict commercial vessel traffic on navigable waterways. Below are the USCG established triggers for restricting vessel traffic:

- ***First trigger point***. The San Francisco Bar Pilots or Vessel Traffic Service/Waterways have received reports that the Delta river areas are predicted to have unusually fast currents and/or high water levels. Actions include monitoring flood conditions and issue a Safety Marine Information Broadcast.
- ***Second trigger point***. Reports indicate that conditions in the rivers have reached a state such that certain restrictions may be necessary to ensure safe transits through the affected area(s). Restrictions could include vessels only permitted to transit during daylight hours and within one hour of predicted low tide at either Rio Vista (Sacramento River) or Prisoners Point (San Joaquin River).
- ***Third trigger point.*** Reports indicate that conditions in the rivers have reached a state such that it is not safe to transit the area or damage to levees has occurred to the extent that transits by vessels may cause more damage. Actions include closure of the affected waterways.

California State Parks, Division of Boating and Waterways has the authority to restrict recreational boating and will issue all vessel restrictions and/or advisories to marinas throughout the Delta.

PRIVATE SECTOR CONSTRUCTION/EQUIPMENT COMPANIES

Construction and/or large-equipment companies needed during flood response and recovery efforts will be obtained by the public agency with responsibility for the problem that these private vendors are assisting. Procurement procedures, standard contracting forms, and documentation protocols are contained in the emergency operations plans of all public jurisdictions, and include LMA's in their emergency operations plan to ensure that such contracting can be done

expeditiously by the appropriate jurisdiction.

DELTA WORKING GROUP

Several local, state, and federal agencies, operating within a patchwork of authorities, exercise their responsibilities for various aspects of emergency preparedness, response, and recovery. In an effort to develop multi-agency coordination, particularly between agencies regarding the Delta and emergency response responsibilities, the Delta Working Group was created as an activity under the Multi-Agency Coordination (MACS), component of Delta Emergency Response.

SECTION 2.0: CONCEPT OF OPERATIONS

A key prerequisite of flood planning and response operations that will be maintained by the Yolo OA is ongoing consistency within the Region OAs in regard to structure and content of local flood safety plans, structure and operation of pre-planned unified commands, flood-response training requirements and formats, and structure and operation of mutual aid systems. This consistency enhances regional cooperation and sharing of information and resources in an essential rural area with less than optimal response resources in place. Yolo OES will participate in and help maintain regional coordination agreements and processes to ensure the maintenance of this consistency.

Emergency response to floods is a three-party (local, state, and federal) approach with the local agency having the primary responsibility for levee maintenance and flood fighting. Levee maintaining agencies include levee and reclamation districts, other special districts, local government agencies, private levee owners, and DWR for State Maintenance Areas (MA) funded by property assessments and State Maintained Areas (ST) funded by general fund.

The local agency has the responsibility to conduct flood fight operations and to utilize all available agency personnel, material, equipment and financial resources. Once LMAs have exhausted their resources, if a flood fight exceeds the capability of the LMA, or if nearby communities are threatened, the LMA may then requests assistance through their Operational Area (OA). The OA will provide assistance first from within the county, which may seek mutual aid, regional assistance, or statewide assistance using all available SEMS levels.

2.1 PUBLIC ALERT AND WARNING

Yolo OES and/or the Yolo Emergency Communications Agency (YECA) will promptly work with jurisdictions to initiate alert and warning systems, designed to reach the general public, upon identification of a threat to Yolo County. Yolo OES will provide information on the characteristics of the threat and, if requested, will assist in notifying the public, to the extent possible, through Yolo-Alert, the County's Emergency Mass Notification System and through additional alert and warning outlets. All field alerts and in-person warnings to the general public will be carried out through the Yolo Unified Flood Fight Commands and local Law Enforcement, as established under the coordination of the Yolo Operational Area EOC. For further information on how the Yolo OA performs public alert & warning as well as Public Information, reference the ***Yolo Operational Area Alert & Warning support Annex***, the ***Emergency Support Function (ESF) 15 Annex*** and/or the ***Yolo County Emergency Public Information Plan***.

The Operational Area Public Information Officer (PIO) will be activated as soon as practical during an emergency. The PIO establishes a Joint Information Center (JIC) with all participating jurisdictions to coordinate with media for news releases. News release procedures will be agreed upon, and established for the Yolo County Operational Area and with the Yolo Unified Flood Fight Commands.

2.2 SAFETY AND SECURITY

During a potential threat or actual event, employee safety and operational security will be key concerns for the Yolo Operational Area. The Yolo Unified Flood Fight Commands will establish appropriate safety procedures to be followed by all responders, and such procedures and directions will be documented on the UFFC Incident Action Plan. Security and safety procedures will also be implemented at all command posts and other tactical facilities and operational work sites. Incident commanders will implement safety briefings for all operational work activities.

Yolo County, the incorporated cities of Davis, Winters, West Sacramento and Woodland and the

Yocha Dehe Wintun Nation are responsible for the public safety functions of warning, evacuation, rescue, shelter, and medical care. LMA's are responsible for the public safety functions of maintenance of flood control infrastructure and containment of flood flows. Sound organization and conduct of these operations will depend on the following:

- Efficient, integrated organization of field operations to address the limited resources available to local agencies
- Thorough knowledge of local conditions affecting the conduct of such operations
- Close coordination with the LMA's responsible for levee maintenance. Efficient operations also require knowledge of details of the following:
  - Local road and highway conditions and the ability of public works agencies to maintain traffic ability of such arteries.
  - Unified Command organization and assignments to achieve most efficient response.
  - Population locations and characteristics that would affect warning and evacuation operations.
  - Conditions in surrounding counties that would affect the ability to evacuate and shelter County populations.

Evacuations are the responsiblility of the local law enforcement agency. Please see the ***Yolo OA Evacuation Support Annex*** for further information on evacuations, including for flooding.

2.3 YOLO UNIFIED FLOOD FIGHT COMMAND (UFFC) SYSTEM

Yolo County and other public jurisdictions involved in flood response will establish a unified flood fight command to direct and coordinate field response activities. The unified commands will be established and operated according to the protocols of the Yolo Unified Flood Fight Command System Operations Manual and associated Unified Command Map. For more information refer to the ***Yolo County Unified Flood Fight Command System Operations Manual*** for more detailed information.

Yolo Operational Area will organize its flood response command-and-control system based on the following key assumptions:

- Jurisdictions will perform their functions in accordance with established plans. For the Yolo Operational Area, several jurisdictional or joint plans/protocols are in place such as the Yolo Unified Flood Fight Command protocols.
- The multi-jurisdictional nature of flood response requires a unified command field organization to complement the higher-level multi-jurisdictional operational area system.
- Key tactical decisions (whether to evacuate, how to address a flood-control structure problem, how to contain flood waters, etc.) will be made in a field environment due to the need for rapid decision-making and the fact that the information or expertise needed to make those decisions is found in the field in proximity to the flood-control infrastructure.
- Policy decisions, overall tracking of the operational picture, recovery operations and decision-making will occur at the jurisdictional level in the respective EOCs.

Based on those assumptions, the Yolo Operational Area will maintain the below key components to its overall command and control system:

- The Yolo OA has a protocol for assigning a single incident commander to supervise jurisdictional operations, when the Yolo Flood Fight Unified Commands are activated. Yolo OES will ensure that they implement this protocol at the time of flood warning in

accordance with NIMS protocols. Below for reference is the organizational structure as described previously:

- The Operational Area will maintain unified command organizations (Yolo East and West Side Unified Commands) to direct and control both flood fight (failure prevention or containment of flood flows) and public safety tactical operations (physical warning, evacuation, rescue, etc.) in the field. All jurisdictions with field response functions will participate in this unified command to ensure coordination of all activities are taking place in the field.
- The Yolo UFFC structure will also work with the Colusa Basin UFFC in a flood emergency that has the potential to affect Yolo County.
- The County, city and Tribal jurisdictions will maintain an organization at their emergency operations centers (EOC) capable of the following:
    - Maintaining an overall operational picture
    - Ensuring prompt, joint policy decision-making
    - Providing planning/intelligence, logistics, and administrative support to the unified command operating in the field.

Yolo OES will maintain protocols to ensure the timely and effective activation of the above command-and-control systems.

The LMA will notify its Operational Area (OA) of the potential identified threat. The LMA will also notify DWR's Flood Operations Center (FOC) about the potential identified threat and may ask for technical assistance. If a flood fight exceeds the capability of the LMA or if communities are threatened, the county may assist with the flood fight as much as possible. A DWR representative (Levee Inspector/Flood Fight Specialist/Geotechnical Specialist) may perform a site visit, document the levee stress, and recommend first response mitigation measures such as monitoring techniques or possible placement of sandbags.

The Department of Water Resources Sacramento Maintenance Yard has direct levee-maintaining responsibilities for State maintenance areas and State-maintained levees. Sacramento Maintenance Yard will designate an incident commander to direct State operations on flood-control structures for which it is responsible. This incident commander or representative will work directly with local unified commands to coordinate State operations with other LMA's and local public safety agencies. The Sacramento Maintenance Yard will work through local operational areas for mutual aid and other needs.

2.4 Phases of Operations

This annex will be implemented in phases as outlined in the following:

Phase 1: Flood Normal Preparedness

Yolo Operational area jurisdictions having emergency responsibilities assigned in this annex prepare their own operating procedures and checklists for a flood emergency that include coordination strategies with other departments and jurisdictions. Yolo OES will maintain the Yolo OA procedures, the Cities, Tribe and LMA's will maintain their jurisdictional emergency operations plans. These activities will be performed in accordance with written criteria for periodic review and updates.

Yolo County OES will participate in ongoing regional coordination activities to ensure consistency of the flood safety plan, unified command, and mutual aid structure and content within the region. These coordination activities include:

- Hosting of the annual pre-season winter weather preparedness meeting each fall
- Coordination of, at least, one Flood Fight Methods course (taught by DWR)
- Regular training in procedures and systems used by Emergency Management such as the participation in training and exercises[4]

Normal preparedness activities will also include a periodic audit to ensure that jurisdictions are updating their plans in accordance with their plan criteria, and a periodic review of this annex and the Yolo Unified Flood Fight Command protocols.

The Yolo Office of Emergency Services and its participating jurisdictions will ensure that the following information is collected and maintained prior to flood events:

- Nature and location of hydraulic features—such as lakes, rivers, streams, creeks, and sloughs—that either are intended to carry flood flows or could carry flood flows in the case of failure of flood-control infrastructure.
- Nature, location, and condition of flood-control infrastructure, such as levees, pump stations, dams, diversion points, culverts, and drains.
- Flood history, historic flood elevations, and historic levee breaches.
- Fire perimeter history, to identify areas that may suffer mud and debris flows that could affect the Flood Control System.
- Points of past or potential vulnerability in flood-control infrastructure due to seepage, erosion, excessively high water elevations, or other conditions exceeding flood-control structure specifications.
- Topography and nature of flood flows from foreseeable failure of the flood-control infrastructure.
- Elevation, location, and vulnerability of critical infrastructure to flood flows.

This information will be collected by LMA's and public agencies and displayed on the GIS-based flood contingency maps that constitute the hazard-specific flood annex of their jurisdictional emergency operations plan (flood safety plan). Yolo County OES is responsible for ensuring that LMA's collect and maintain this information in accordance with their plan update schedule. Yolo OES is also responsible for ensuring that the County maintains the maps in a central location, so that this information can be promptly retrieved.

Key jurisdictions (County, Cities, the Tribe and LMA's) will maintain emergency operations plans in accordance with FEMA CPG 101 v. 2.0. Key response procedures and information will be maintained that is managed by Yolo OES. Map GIS files and systems will be structured so that real-time information can be collected and displayed on maps and GIS displays as needed upon initiation of flood response. Yolo OES has developed a Damage Assessment Suite that is used to collect damage information before and after a disaster. A regional GIS Technical Manual will be maintained to ensure that these information objectives are reached and that consistency in GIS file structure is maintained by surrounding counties in the Sacramento River region. This GIS system will comply with the Regional GIS Technical Manual of the Mid and Upper Sacramento River Flood Response Project[5].

Broderick Boat Ramp
In early March through May, the City of West Sacramento Parks and Recreation closes the boat launch facility for safety purposes.

[4] Online training for digital systems is available at - http://www.yolocounty.org/general-government/general-government-departments/office-of-emergency-services/training
[5] Edits to the MUSR GIS manual will be requested as systems are updated in future years.

PHASE 2: FLOOD INCREASED PREPAREDNESS

At the beginning of flood season, Operational Area jurisdictions will work with Yolo OES, and in conjunction with other local jurisdictions, to implement flood preparedness activities reflected in their respective department and jurisdictional emergency operations plans, and begin pre-planned monitoring to evaluate information and initiate appropriate response. For Yolo Operational Area, this would also include review of unified command protocols and systems, and preparations to ensure that "just-in-time" flood-response training can be, expeditiously, provided to local responders.

The Operational Area EOC and West Sacramento EOC will be activated on a Duty Officer status and daily monitoring by OES will commence (if not already started) via any one of the following systems:

- Yolo County Arc GIS Daily Briefing web mapping application
- California Nevada River Forecast Center (CNRFC)
- California Data Exchange Center (CDEC)
- National Weather Service (NWS)
- Rivercast
- Local Levee Maintaining Agency Staff Gauges*

* The LMAs monitor and analyze (in the field, at local staff gauges placed in district or through the California Nevada River Forecast Center) throughout the flood season the water conditions, elevations, and forecasts for waterways affecting their levees for the purpose of promptly identifying heightened threats to the integrity of levee and drainage systems. The objective of this monitoring effort is to identify objective conditions that warrant additional actions beyond routine flood season preparedness activities.

Gauge Name	LMA / City	Gauge Station ID	Ht. Aware	Monitor	Gauge Owner
SACRAMENTO RIVER		CDEC/ Staff		ft	
Clarksburg Marina Staff Gauge	RD 150	Local Staff	--	17	Staff
	RD 999	Local Staff	--	17	Staff
FRE Sacramento River @ Fremont Wier (NAVD88)	RD 537	CDEC		34	DWR/NCRO
	RD 1600			34	DWR/NCRO
	RD 2035	CDEC		40	DWR/NCRO
	Sac MY (YBWSL)	CDEC		32	DWR/NCRO
IST Sacramento River at I Street Bridge (NAVD88)	RD 150	CDEC		27.5	DWR/NCRO
	RD 307	CDEC		27.5	DWR/NCRO
	RD 537	CDEC		29.5	DWR/NCRO
	RD 765	CDEC		27.5	DWR/NCRO
	RD 900	CDEC		27.5	DWR/NCRO
	RD 999	CDEC		27.5	DWR/NCRO
	RD 1600	CDEC		29.5	DWR/NCRO
	Sac MY - MA-4	CDEC		27.7	DWR/NCRO
	Sac MY - Sac Bypass	CDEC		29	DWR/NCRO
KNL Knights Landing Bridge Staff Gauge	CSA-6	CDEC Staff	--	37	DWR
WLK Sac River Below Wilkins Slough	SRWSLD	CDEC	--	47.6	USGS
YOLO BYPASS					
YBY Yolo Bypass Near Woodland	RD 1600	CDEC	--	18	DWR
	RD 537	CDEC		18	DWR
CACHE CREEK					
RUM Cache Creek @ Rumsey Bridge	Sac MY Cache Creek Levees	CDEC	--	14.5	USGS/DWR
COLUSA DRAIN					
KLG Colusa Drain @ Knights Landing	RD108	CDEC	33	34.5	DWR/NCRO
	RD787	CDEC	33	34.5	DWR/NCRO
	KLRDD	CDEC Staff	33	34.5	DWR/NCRO

Table 2 - Key Monitoring Stations for Yolo Operational Area

Local jurisdictional partners will be encouraged to review the Just in Time training on-line modules as a refresher to in-person trainings that were previously received (https://musrflood.squarespace.com) to prepare for potential response.

PHASE 3: FLOOD EMERGENCY PREPAREDNESS

When it is determined, through monitoring of pre-established trigger conditions, that a potential flood situation is a matter of "when" rather than "if," Yolo OES will implement the following actions:

- Confirm and monitor formal designation of jurisdictional incident commanders as jurisdictions reach pre-planned trigger conditions for this action.
- Ensure that EOC's can be opened in a timely manner and that jurisdictional plans can be expeditiously implemented.
- Confer with surrounding operational areas to identify and activate appropriate unified flood fight commands to coordinate field response.
- Initiate "just-in-time" flood response training for local responders that have not had minimum required training prior to the event.
- Work with jurisdictions and LMA's that rely on volunteers and emergency hires to register such personnel in the Disaster Service Worker Volunteer Program as appropriate.
- Provide information to Yolo County departments, the Cities, Yocha Dehe Wintun Nation and other special districts and local jurisdictions as to the threat, potential flood severity, and areas affected.
- Advise departments to report action being planned or taken, and anticipated deficiencies in critical emergency resources.
- Prepare to receive or render mutual aid.
- Keep departments and jurisdictions promptly notified of any changes in the operational picture.

Yolo OES will participate in teleconferences and in-person meetings whenever possible to be able to relay information to as many jurisdictional partners as possible. These typically include:

- UFFC meetings
- FOC teleconferences
- NWS teleconferences
- Cal OES Task Force meetings
- Meetings with private contractors & engineering firms
- Public Meetings

Local jurisdictional partners will be encouraged to review the on-line training available for the Survey123 Damage Assessment Application to accurately record damages within the flood control system.

Sacramento Weir and Bypass

When the Sacramento River at I Street reaches 29.9 feet and is forecast to rise the California Department of Water Resources typically begins the opening of the Sacramento weir gates to either prevent the stage at the I Street gage from exceeding 31 feet, or to hold the stage at the downstream end of the weir to 29.9 feet. The number of gates to be opened is determined by the NWS/DWR river forecasting team. Once all 48 gates are open, Sacramento River stages from Verona to Freeport may continue to rise during a major flood event.

The weir gates are closed as rapidly as practicable once the stage at the weir drops below 27 feet.

George Kristoff Water Treatment Plant
When the Sacramento Weir gates are projected to open a notification is made to the City of West Sacramento Public Works Department to inform of the Weir opening/closing. This notification is critical as the inlet pipe to the plant needs to be shut off until the water in the Sacramento River stabilizes.

PHASE 4: FLOOD EMERGENCY PHASE

When water elevations or conditions arrive that could cause flooding, the jurisdictional emergency organizations will perform the following broad functions, as required, to cope with the specific operational situation:

- Develop and maintain an overall Common Operating Picture (COP) – this is done through a combination of Situational Status reporting and logging of information into the Survey123 Damage Assessment Application.
- Elevate the activation level of the Operational Area EOC to a level commensurate with the hazard assessment[6] and activate jurisdictional EOC's and jurisdictional response plans necessary for response.
- Mobilize, allocate, position, and assign personnel and materials in accordance with jurisdiction plans and unified command decisions and objectives. During this function, special attention will be given to the availability of flood fight stockpiles (under development by Yolo OES) and their deployment locations for the duration of the event.
- Protect, control, and allocate vital response and community public safety resources
- Relocate, Restore or activate essential facilities and systems
- Participate in Unified Flood Fight Command organizations established to coordinate field response among involved public jurisdictions

Implementation of the jurisdictional flood response plans will be coordinated through joint protocols of the Yolo Unified Flood Fight Commands and the Yolo OA. When local resources of these key jurisdictions and other public safety agencies are committed to the maximum, and additional materials and/or personnel are required to control or alleviate the emergency, requests for mutual aid will be initiated through the Yolo Unified Flood Fight Commands to the Yolo OA EOC.

Flood Damage/Safety Assessment is the basis for determining the need to request State and/or Federal operational and financial assistance. The Initial Damage Estimate (IDE) is developed during the flood emergency phase to support a request for a Governor's proclamation and for the State to request a presidential declaration. The collection of IDE amounts throughout the Operational Area is facilitated by the use of the Survey123 Damage Assessment Suite[7]:

- Step #1 - Field level staff enter damages through a mobile application platform
- Step #2 – EOC or designated jurisdictional partners verify each entry into the system and assign it a damage dollar value
- Step #3 – The system cumulates all values and summarizes them in the Damage Assessment Dashboard

The application has the ability to recap damage numbers within the entire OA based on shape files

[6] For the activation levels of the EOC please reference the ***Yolo County EOC Support Annex***
[7] For information on how this application is used within Yolo please visit the ***Yolo Operational Area Recovery Framework or the Survey123 Damage Assessment Application Suite online trainings.***

loaded into the system. Entries will be filtered for each respective jurisdiction either by reporter name or jurisdictional shape file to create breakdowns of IDE's as specified by the State or Federal government for access to Recovery funding sources.

2.5 RECOVERY

Local governments are responsible for managing and coordinating the overall emergency recovery activities within their jurisdictions. Yolo County understands the needs of its community, their own recovery capacity, and can request assistance from partners to expedite the recovery process as needed. Yolo OES maintains a protocol for transitioning the Operational Area to recovery operations within the ***Yolo Operational Area Recovery Framework***. The Yolo OA recovery priorities are noted in the following table:

Yolo OA Recovery Priorities	
Short-Term Recovery Priorities	• Communications and Public Information • Mass Care/Sheltering • Volunteer and Donations Management • Debris Clearance • Damage Assessments • DWR Stockpile replenishments • Temporary/Interim Infrastructure • Fuel Systems • Behavioral Health • Public and Environmental Health • Continuity of Operations Plan • Succession Plan • Risk Assessment
Intermediate Recovery Priorities	• Interim housing • Debris management • Infrastructure restoration • Business reestablishment • Preservation and restoration of natural and cultural resources • Continuity of health care • Schools and social services; • Non-governmental assistance • Mitigation strategy
Long-Term Recovery Priorities	• Sustainable communities; • Resilient communities; • Economic revitalization; • Restored health care; and • Climate adaptation.

Table 3 – Yolo OA Recovery Priorities

Flood debris removal and flood emergency response costs incurred by the affected entities should also be documented for cost recovery purposes under the Federal programs. Flood debris removal will be conducted in accordance with the Yolo Operational Area Debris Removal. It will be the responsibility of Yolo County, the LMA's, and other special districts within the Operational Area to collect documentation of these damages and submit them to the Recovery Manager for their jurisdiction.

Damage documentation should include the location and extent of damage, as well as estimates of costs for debris removal, emergency work, and repairing or replacing damaged facilities to a non-

vulnerable and mitigated condition. The cost of compliance with building codes for new construction, repair, and restoration will also be documented. The cost of improving facilities may be provided under Federal mitigation programs.

Documentation is the key to recouping expenditures related to emergency response and recovery operations. For each jurisdiction and special district, documentation must begin at the field response level and continue throughout the operation of their Emergency Operations Center as the disaster unfolds.

DOCUMENTATION OF LEVEE DAMAGE FOR RECOVERY

Recovery efforts requested from FEMA, USACE, CalOES, or the Department of Water Resources, will request documentation of levee damage sites, flood fight methods, and at all stages of emerging, progressing, and final levee damage sites much be documented. Documentation can occur on hard copy logs, flood contingency maps, and shared via Survey123. There are three main items that must be recorded regarding damage sites in order to make the recovery process more seamless. This include:

1. **PHOTOGRAPHS OF DAMAGE SITES**
    - Photograph of all stages of levee damage: initial signs of damage, progression of damage, and the final damage condition.
    - Include relevant dimensions, especially those that are changing. This will help convey the rate at which damage is progressing.
    - Photograph flood fight supplies, materials, and equipment used on site.
    - Date and *time* of a photograph so that it can later be correlated with river stage, ideally locally used or forecasting gage station.
    - Photographs should be geolocated with latitude and longitude coordinates. This can be easily done with Survey123.
    - If feasible, provide a description of the angle it was taken from (i.e. "looking north approximately 100' away from south end of seepage extents").
2. **DOCUMENT MATERIALS REQUESTED / INSTALLED**
    - Document all assistance requests, specifically: the types and quantities of supplies, materials, labor, and equipment <u>requested</u>.
    - Document the supplies, materials, labor, and/or equipment that was <u>received</u>, and that which was actually used or installed.
    - Document the agency(s) that provided supplies, materials, agency, and/or equipment.
    - If equipment is used (i.e. vehicles, trucks, heavy equipment, etc.) document the name of the operator, specific vehicle identifier, and times in which they were used.
    - In lieu of loose sheets that can be easily lost or misplaced during an event, the inside door of a ConEx Container can be used to keep track of flood fight supplies that are used, received, or lent to another agency.
3. **LABOR**
    - Timecards must be kept

- Document the names, date, time of **safety briefings** at each incident command.
- Document the name, date, time of flood **fight training** at each incident command.
- Document the name, and **agency which they represent**, of individuals in flood fight training assistance crews.

4. **PROCUREMENT PROCESSES**
   - LMAs should document how proper procurement policies were followed (resolutions, board minutes, etc.) per their respective Emergency Operations Plans (EOPs).

PL 84-99 - USACE ASSISTANCE

As part of the Civil Emergency Management (CEM) Program, Levees, referred to as Flood Control Works (FCW) and/or Projects by the USACE, can receive various forms of aid from the USACE under PL 84-99.

- **Advance Measures:** pre-flood assistance, such as **levee fortification, channel dredging, debris clearance**, etc. if imminent danger is anticipated (See publication EP 500-1-1 Ch.7 for criteria)
  - Eligibility: Technical or direct assistance may be offered if the need exceeds the capability of local and state government to address. Situations include but are not limited to imminent danger/flooding due to abnormally high snowpack, channel obstruction, levee overtopping, or dam failure.
  - How to Request: Governor makes request to Major Subordinate Command (MSC: USACE level above district authority), who then takes it to US Army Corps of Engineers Headquarters (HQUSACE). USACE needs to see that state has committed all available resources. If approved, a Cooperation Agreement will be executed and aid will be rendered.
  - Cost Share: Funding will be in accordance with ER-11-1-320. (See EP 500-1-1 Ch7-3 for details.)

- **Response Activities**: **Technical, flood fight, or direct assistance** during a flood – generally only if there is a perceived imminent threat to human life, property, or considerable economic impact. (See EP 500-1-1 Ch.4)
  - Eligibility: Any levee (federal, non-federal) regardless of whether it is active or non-active in the Rehabilitation Inspection Program (RIP). In Yolo County, requests are made to CA DWR, who then pushes up requests to USACE.
  - How to Request: Request for response assistance must follow SEMS/NIMS channels; local resources must be exhausted before DWR can request assistance from the USACE.
  - Cost Share: ER 11-1-320 prescribes general funding procedures for PL84-99 emergency operations Category 200 activities.

- **Rehabilitation**: Post-flood assistance; typically involves restoring a levee to its pre-flood condition. (See EP 500-1-1 Ch.5)
  - Eligibility: Federal and Non-Federal Levees that are **active**, or are going through the SWIF process, in the Rehabilitation and Inspection Program (**RIP**).

- How to Request: USACE sends out a notice immediately after flood event to advise of 30-day window to request aid.
- Cost Share: Federal FCWs are repaired at 100% Federal cost. Non-federal FCWs have a 20% local cost share responsibility.

Rehabilitation and Inspection Program (RIP)

In order to receive ***rehabilitation*** aid, the levee segment must be: considered "active" under RIP. Active status is retained by achieving acceptable scores during Continuing Eligibility Inspections (CEI) conducted by the USACE every 2 years. If an LMA has been deactivated, it can apply to be readmitted to the RIP program through a System Wide Improvement Framework (SWIF) which is further discussed below. In some cases, an accepted Letter of Intent (LOI) to apply for a SWIF will suffice to gain eligibility for rehabilitation assistance.

For both Federal and Non-Federal levees who have been accepted into the RIP program, the Corps conducts Continuing Eligibility Inspections (CEIs) every two (2) years. FCWs with historically high marks may choose to move to a three (3) year approval period.

Non-federal levees who have never been part of the RIP program and would like to be included in the RIP program must have their public sponsor request an Initial Eligibility Inspection (IEI) to become eligible. If passed, the non-federal FCW is considered "active". USACE provides inspection results with 30 days.

Figure 6 below provides a brief overview of the RIP program's pathways to active status to gain eligibility for rehabilitation assistance, specifically.

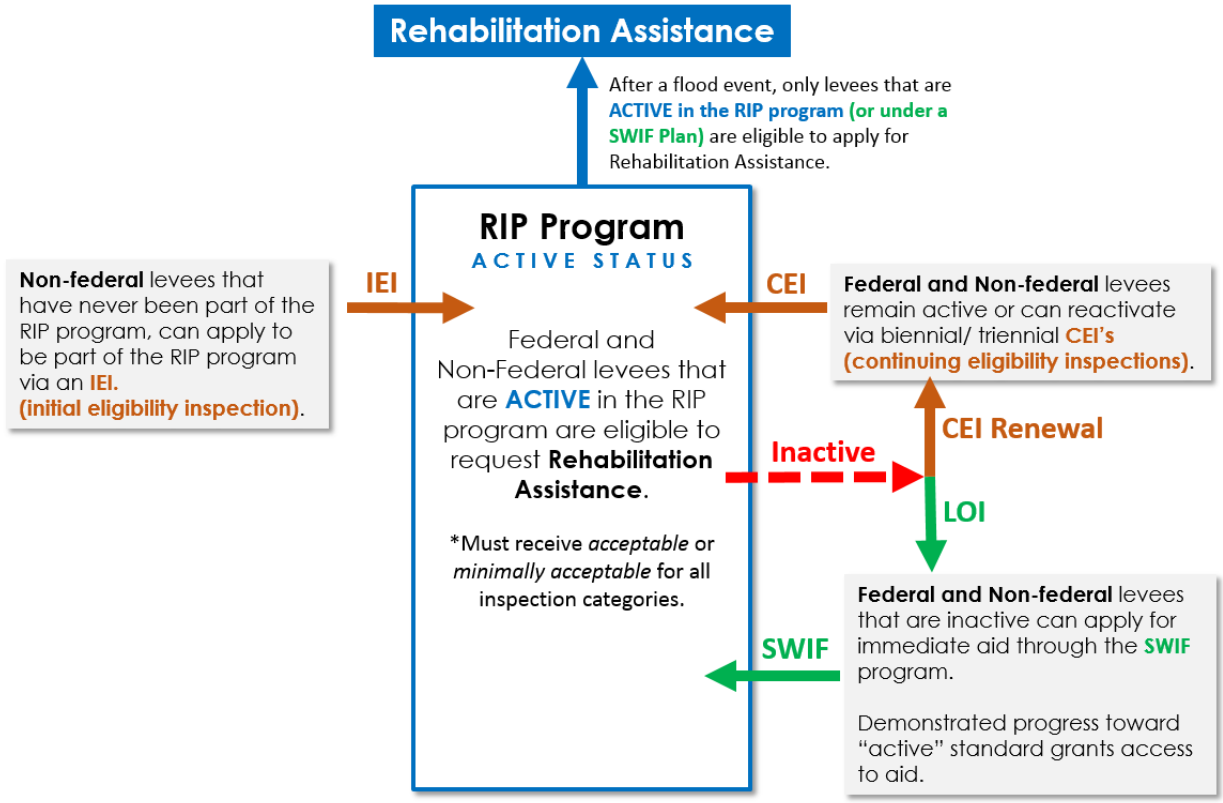


Figure 7 – USACE Rehabilitation Program pathway

Requesting Rehabilitation Assistance After a Flood

USACE immediately sends out a notice to public sponsors (i.e. CVFPB) after a flood event starting **the 30-day window available to request aid**. LMA's can request aid if:

1. They're "**active**" in the RIP program at the time of the flood or under a SWIF plan, or (in some cases) an accepted LOI* for the SWIF;
2. **Damages must exceed $15,000** and have a favorable **Benefit Cost Ratio (BCR) greater than 1**.

Eligible FCWs will be restored to pre-flood conditions. **Betterments are not covered under this program**.

Federal FCWs are repaired at 100% Federal cost. Non-federal FCWs have a 20% local cost share responsibility. (See EP 500-1-1 Ch.5 S.III)

Documentation for PL84-99 Rehabilitation Assistance Request

USACE requires detailed documentation of any issues in order to approve requests and most effectively offer assistance. Most info about various projects can be found in the **National Levee Database** at nld.usace.army.mil.

General Project Info:

- National Levee Database ID[8]
- LMA / Public Sponsor
- Rehabilitation Program Eligibility
- Location (County, city, waterway, etc.

USACE also needs:

- Location (lat/long) of damage *from beginning to end* (vs. just a single point),
- Notes to describe the nature and extent of damage,
- A map showing location of the damage site(s), and
- As many photographs as are needed to thoroughly document each issue ***as it progressed***.

If local repairs are enacted while awaiting approval, the LMA or sponsor must be able to **illustrate the scope of the damage *immediately following the flood*** if reimbursement is expected.

System Wide Improvement Framework (SWIF)

The System Wide Improvement Framework was developed in 2011 for FCWs with an inactive status that require USACE rehabilitation assistance. The SWIF plans detail how the local sponsor, typically a levee maintaining agency (LMA), plans to address the deficiencies cited in their inspection report. To enroll in this program:

1. The LMA submits a Letter of Intent (LOI), involving a 10-page criteria checklist, which is reviewed by USACE District, Division, and Headquarters.
2. SWIF plan is developed by LMA within two (2) years of LOI approval.
3. Sponsor receives a Monitoring Plan detailing how progress will be tracked (1yr assessments).
4. USACE Headquarters (HQUSACE) approves SWIF Plan. (Plan is revised annually as needed and requires HQ approval every 2 years.)
5. Eligibility for active status under SWIF contingent on sponsor's progress/improvements.
6. HQUSACE must have a SWIF LOI approved by District Commander on file to be eligible for aid.

The Table on the following page summarizes PL84-99 status of LMAs within Yolo County as of May 2018.

[8] https://levees.sec.usace.army.mil/#/

PL84-99 STATUS OVERVIEW[9]			
LMA	Federal / Non-Federal	Active / Inactive in RIP Program	Eligible for PL84-99 Rehabilitation Assistance?
Grimes Basin			
SRWSLD	Federal	Active via SWIF	Yes (SWIF)
RD108 - River Farms	Federal	Active via SWIF	Yes (SWIF)
RD 787 - Fair Ranch	Federal	Active via SWIF	Yes (SWIF)
Knights Landing Levee System			
County Service Area 6	Federal	Active via SWIF	Yes (SWIF)
KLRDD - Left Bank	Federal	Active via SWIF	Yes (SWIF)
KLRDD - Right Bank	Federal	No, LOI in Progress	No
RD 900 - City of West Sac	Federal		
RD900 – Sac River	Federal	Active/swif loi	Y
RD900 – Ship Channel	Federal	Active/swif loi	Y
RD900 – Ship Channel Cross Levee	Federal	Active/swif loi	Y
Clarksburg Basin			
RD 307 - Lisbon	Federal	Inactive	No
RD 765 - Glide	Federal	Inactive	No
RD 999 - Netherlands	Federal	Inactive	No
RD150 - Merritt Island	Federal	Inactive	No
Elkhorn Basin			
RD 537 - Lovdal	Federal	Inactive	No
RD 1600 - Mull	Federal	Inactive	No
RD 2035 - Conaway	Federal	Active via SWIF	Yes (SWIF)
RD 2068 - Yolano	Federal	Inactive	No
RD 2093 - Liberty Island	Federal	Inactive	No
DWR Sac Maintenance Yard			
Cache Creek Levees -Left Bank	Federal	Inactive	No
Cache Creek Levee - Right Bank	Federal	Inactive	No
MA-4	Federal	Inactive	No
Putah Creek - Left Bank	Federal	Active	Yes
Putah Creek - Right Bank	Federal	Inactive	No
Sacramento Bypass	Federal	Inactive	No
Willow Slough - Right Bank U4	Federal	Active	Yes
Yolo Bypass West Side Levee U1	Federal	Active	Yes

[9] NOTE: LMAs may have multiple segments, each with a different status under PL84-99. Refer to Yolo County Flood ER Phase I Geodatabase for levee segment designations.

PL84-99 STATUS OVERVIEW[9]			
LMA	Federal / Non-Federal	Active / Inactive in RIP Program	Eligible for PL84-99 Rehabilitation Assistance?
Yolo Bypass east Side Levee	Federal	Inactive	No

DELTA LEVEES MAINTENANCE SUBVENTIONS PROGRAM OVERVIEW

Background

This is a cost-share program that provides technical and financial assistance to local agencies in the legal Delta for the **maintenance and rehabilitation** of **non-project** levees in the legal, primary delta. Since the passage of SB 541 (Way Bill) in 1973, the Department of Water Resources (DWR) has invested over $180 million in flood control and habitat projects carried out by local agencies in the Delta through the Subventions Program.

Note: Project levees in the Delta secondary zone are not eligible for this program.

Applying for Maintenance or Rehabilitation Assistance

LMA must apply each year that they wish to receive technical or financial assistance. Copies must be provided to both DWR and CA Dept. of Fish and Wildlife. Each application package must include:

- A letter of intent to participate.
- A statement outlining long-range plans reflecting current levee conditions.
- The LA's annual routine maintenance work plan (Article 2-3).
- The LA's rehabilitation work plan (see Article 2-4).
- A statement defining land use of the area protected by the levee as well as any planned changes.
- Various other details and qualifications (see Article 3-1 for a complete list).

Technical and financial assistance can be sought through this program if application for federal aid, such as FEMA disaster reimbursement, was denied. Proof of federal disaster assistance application/cost must be included with subventions application documents, whenever eligible.

Local agencies can also apply for reimbursement for the purchase of an **easement** (see article 3-2, Article 7).

Applications must be submitted to DWR by **April 1** for the corresponding fiscal year. (Exceptions made for applications submitted pursuant to CA Water Code § 12993 and 12994.)

DWR reviews the application and makes a recommendation to the Central Valley Flood Protection Board (CVFPB). The CVFPB then approves in whole or in part or denies the application. The following must be satisfied for approval:

- **Engineering** – All engineering plans and reports shall be prepared and signed by a Civil Engineer licensed by the California Board of Registration for Professional Engineers, Land Surveyors, and Geologists. The engineering plans shall indicate which activities will be performed under the supervision of a duly licensed Civil Engineer.

- **CDFW Review** – Pursuant to CA Water Code § 12987, CDFW shall review all local agency plans. The local agency must have completed all of the requirements of CA Water Code § 12987 and § 79050 to the satisfaction of CDFW in its previous agreements with the CVFPB to be eligible for current funding under this program.

Local agencies are also responsible for ensuring compliance with CEQA and all applicable environmental laws and regulations.

Plans for Maintenance and Improvements of Eligible Levees

Local agencies maintaining project or nonproject levees are eligible for reimbursement upon submission and approval by the **CVFPB** of the following plans:

- Long-Range Plans
- Annual Routine Maintenance Plans*
- Levee Rehabilitation Plans*

**Significant changes to Maintenance or Rehabilitation plans must be sent to DWR in writing and may in some cases require DWR approval.*

The CVFPB reviews the plans for completion based on the following:

a) Plans shall be provided to DWR in both hard copy and digital format prior to the local agency receiving final reimbursement, if requested.
b) Plans shall not call for the use of channel islands or berms with significant riparian communities as borrow sites for levee repair material, unless fully mitigated.
c) Plans shall not result in a net long-term loss of riparian, fisheries, or wildlife habitat.
d) Local agencies will comply with the net habitat improvement mandates of CA Water Code § 12987.
e) Plans should reflect the priorities of and be consistent with the Delta Plan and the CA Water Code § 12986(c).

Reimbursement Provisions

The local agency must pay $1,000 per levee mile before receiving program aid. Beyond that up to 75% of eligible costs will be reimbursed. Payments through this program are consistent with the Delta Plan and CA Water Code § 12986(c). Local agencies cannot use other state funds to cover their share of project costs. Those receiving funds must display signage informing the public. (For full details see Article 4-1.)

Funding Priorities (For full details see Article 4-2.)

PRIORITY 1 - MAINTENANCE
up to $20,000 per levee mile

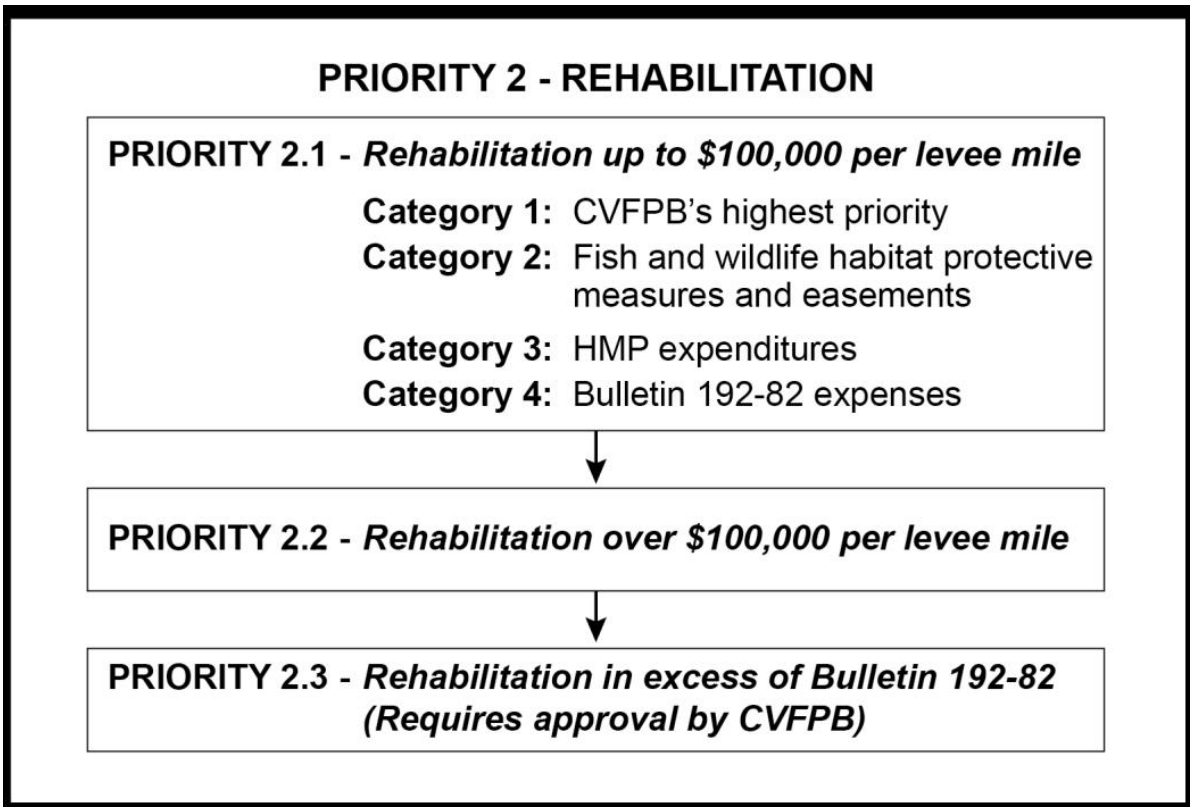


Figure 8 – Levee Subventions Funding Priorities[10]

FLOOD WATER REMOVAL

With overtopping or failure of a levee flood protection system, the lands 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. Flood water removal is an integral part of flood emergency response and needs to be considered in planning for floods.

LMAs have primary responsibility for dewatering operations.

Priorities

Considerations include:

- How many people are affected by the flooding?
- What is the value of the flooded area?
- What are the long-term consequences and ramifications?

Alternative 1 – No Immediate Dewatering Needed

Based on the situation, it may be advisable to take no immediate action. For example, an inundated agricultural area with no threat to life and property may be left flooded until waters naturally

[10] (Figure 1. Of DWR 2016 Guidelines)

recede. Due to public perception and expectations, this may be a difficult decision to reach, albeit logical. For some areas this choice can be made in advance of a flood event. LMAs, the Cities and especially the City of West Sacramento, Yolo County, DWR, USACE, and Cal OES must work together to ensure everyone understands the reasoning and supports the choice.

Alternative 2 – Close Breach; No Water Removal

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. LMAs will obtain the necessary materials to perform this work using their pre-established contacts, and, if those materials are unavailable, will request resource aid in accordance with SEMS protocols.

After the breach is closed, it may be cost-effective to simply 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 able to be accessed, and material for the closure must be available.

Alternative 3 – Repair Breach and 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 can be extensive.

Alternative 4 – Repair Breach and 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 a 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.

Environmental Considerations

Flood Water Removal projects are generally exempt from the California Environmental Quality Act (CEQA). Statutory exemptions include “emergency projects such as actions required to restore damaged facilities or mitigate an emergency” (*CEQA Guidelines Section 15269).*Nevertheless, the legal counsel for each jurisdictional partner will need to review before making a final decision.

SECTION 3.0: COMMUNICATIONS

3.1 COMMUNICATIONS ORGANIZATION

Yolo County will maintain adequate communications equipment to implement this emergency plan. This section identifies equipment and/or systems available for communications.

- Between Yolo County staff, contractors, and other staff working under County supervision
- With public agencies operating within the Operational Area
- With neighboring LMA's
- With the Inland Region Regional Emergency Operations Center (REOC)
- With the State Flood Operations Center

Yolo County will maintain communications with other jurisdictions by cellular telephone, radio, satellite phone, ham radio, and by participation in meetings of the Yolo Unified Floodfight Commands.

INTER-AGENCY AND INTER-JURISDICTIONAL COMMUNICATIONS

Jurisdictions will be individually responsible for maintaining a plan and necessary equipment for effective internal communications between their administrative components and staff.

Multi-jurisdictional communications will be developed and maintained through the Yolo Unified Commands. Members will use the communications outlined in the annual update of the Yolo OA Flood Resources Directory. The County OES will be responsible for ensuring these items are completed as part of unified command activation.

Under Senate Bill 27 the Sacramento-San Joaquin delta Interoperable Radio System was established to enhance radio communications throughout the Delta. The system design includes 3 radio tower sites which are on a Simulcast system located at:

- Twitchell Island, 1580 W Twitchell Island Road, Isleton, CA 95641
- Brentwood PD, 9100 Brentwood Blvd, Brentwood, CA 94513
- San Joaquin County Ag Center, 2101 E Earhart Ave # 100, Stockton, CA 95206

Each radio site includes four 800 MHz repeaters, two UHF repeaters and one VHF simplex base station. The system also includes computer based radio consoles in each of the Delta counties. The Yolo County console is house at the Yolo Emergency Communications Agency (YECA) where it is monitored by 9-1-1 dispatch personnel[11].

For more specific information on radio channels and systems used throughout Yolo, refer to the ***Yolo Tactical Interoperability Communications Plan (TICP)***.

YOLO COUNTY OPERATIONAL AREA EOC

Yolo County will maintain communications systems within its EOC to ensure proper communications with other jurisdictions and agencies. These systems include cellular telephones,

[11] The current VHF signal does not reliably reach into Yolo County.

public safety radio systems, the OASIS satellite phone system, the internet, and scheduled meetings of the Yolo County Operational Area management group.

As part of the Everbridge Mass Notification System a group is maintained in the Employee Alert portal of all LMA contacts. This group is updated at least once a year when the Resource Directory is published as part of Phase 1. This allows notifications to be sent directly to LMAs regarding status changes, UFFC meeting notifications and situational awareness.

NATIONAL WEATHER SERVICE (NWS)

The NWS provides notification releases to media outlets and to public agencies. They use standard terminology for watches and warnings:

- Flash Flood Watch means it is possible that rain will cause flash flooding in specified areas.
- Flash Flood Warning means flash flooding is either imminent or is occurring.
- Flood Watch means long-term flooding is possible in specified areas.
- Flood Warning means long-term flooding is either imminent or is occurring.

The procedure exists, within the NWS, to send out a notification through the Federal Emergency Management Agency's (FEMA) Integrated Public Alert and Warning System (iPAWS) Wireless Emergency Alerts (WEA) when the Sacramento Weir initially opens. While this notification is directed towards those persons who may be in the vicinity of the Yolo Bypass, it is important to note that Notification Bleed could mean that other persons within Yolo (outside of the physical Bypass) may receive this flash flood notification once launched. Yolo OES will include pre-season information in its Phase 1 efforts, annually, to educate the public on this notification.

For more information refer to the ***Yolo Operational Area Alert and Warning Support Annex***.

SECTION 4.0: ANNEX MAINTENANCE

Yolo OES is responsible for overseeing the development and maintenance of the Yolo Operational Area Flood Hazard Annex. Yolo OES is responsible for periodic review of this annex to determine the need for revisions or updates.

Yolo Operational Area partners regularly approve the annex in conjunction with their Jurisdictional Emergency Operations Plan revisions. Yolo OES is authorized to approve routine updates and revisions.

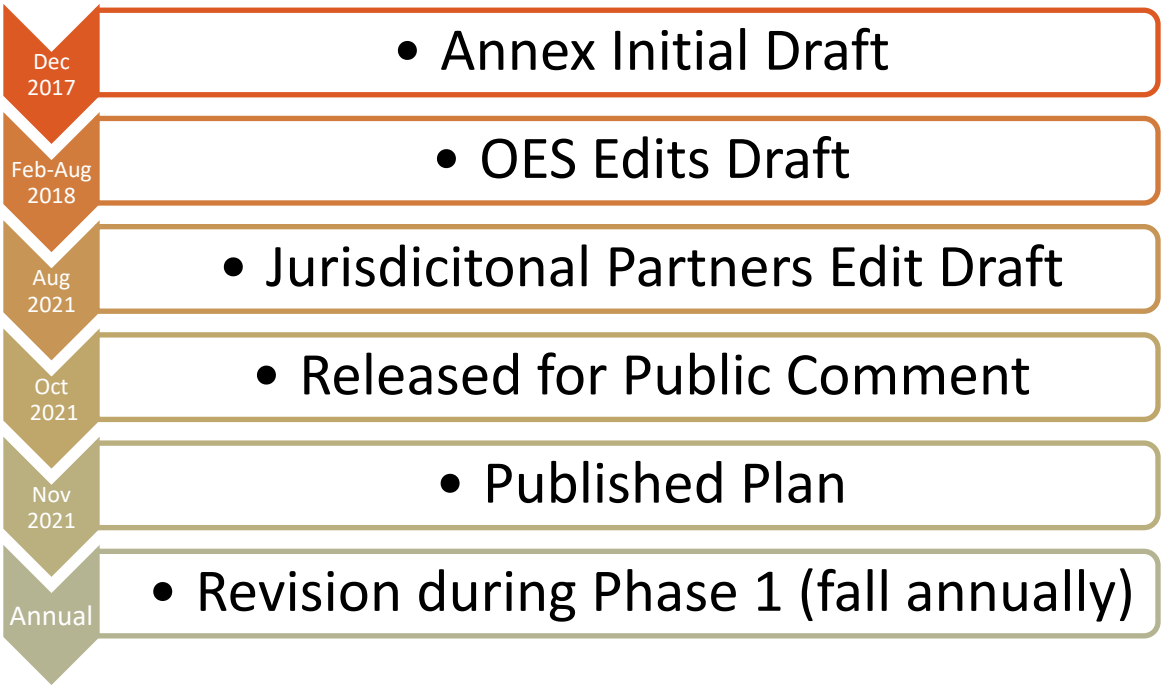


Figure 9 – Annex Development & Maintenance Timeline

FLOOD-RELATED TRAINING AND EXERCISES

Yolo County coordinates with the other public agencies, neighboring counties, and State and Federal governments for all hazards training, and for ongoing exercises to test and validate emergency policy plans and procedures. At least once a year, such training and exercises shall focus on flood hazards and flooding within Yolo County.

The Yolo Operational Area maintains a robust Emergency Management Training Program which is outlined in the five year Training and Exercise Planning schedule[12]. This program carefully analyzes probable incident complexity that local agencies would need to manage and identifies needed training components throughout the OA. This program also uses the unique warning aspects of flood events to provide a number of formats and approaches, giving responders the flood-specific training necessary for effective response, including just-in-time training resources.

Annually, the preseason preparedness meeting is held in a Workshop based format to review any existing damage locations, train responders on communications protocols and review Flood Safety Planning and tools. This Workshop is included in the Operational Area Training and Exercise Plan

[12] Updated each year during the Annual Training and Exercise Planning Workshop and submitted to Cal OES annually.

as part of the training strategy for flood response.

At least one, in-person, Flood Fight Methods course is coordinated annually by Yolo OES within the Operational Area and is taught by the Department of Water Resources. This course provides a refresher opportunity for those who have had the course before as well as entry level experience for those new to flood fighting.

On-line Flood Fight, Just-in-Time training is available at –https://musrflood.squarespace.com. The courses represented on this website were developed through at coordination of several counties and are recommended for any persons involved in flood fight operations annually.

On-line training for the Damage Assessment System is also available for staff involved in flood fight operations to enhance the Common Operating Picture of all Operational Area EOC's. These courses are contained within the Yolo Emergency Management Systems Training website (under the ArcGIS menu) - http://oestrng.yolocounty.org/ and are accessible on YouTube.

SECTION 5.0: AUTHORITIES AND REFERENCES

The Yolo Operational Area policy is to maintain mitigation and emergency plans and procedures, at the level required to be eligible for disaster assistance under the Federal Stafford Act, the PL84-99 program, and the California Disaster Assistance Act. Emergency operations will be conducted and documented in compliance with conditions of those programs for reimbursement of disaster expenses.

FEDERAL

Federal Civil Defense Act of 1950 (Public Law 920, as amended)
Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Public Law 93-288, as amended)
Department of the Interior, Bureau of Reclamation – Central California Area Office Facilities Emergency Action Plan
Department of the Interior, Bureau of Reclamation – Northern California Area Office Facilities Emergency Action Plan

STATE

Section 9650 California Water Code (AB 156)
California Emergency Services Act (Chapter 7, Division 1 of Title 2 of the Government Code)
Standardized Emergency Management System Regulations (Chapter 1 of Division 2 of Title 19 of the California Code of Regulations
Northern California Catastrophic Flood Response Plan (NCCFRP)
California Department of Water Resources – Oroville Facilities Emergency Action Plan
Cal OES Oroville Dam Failure Response Plan

MULTI-AGENCY COORDINATION (MAC)

Mid and Upper Sacramento River Unified Flood Fight Command System Operations Manual
Mid and Upper Sacramento River Flood Response Training Program Manual
Regional GIS Technical Manual of the Mid and Upper Sacramento River Flood Response Project

LOCAL

Yolo County Emergency Operations Plan
Yolo Multi-Jurisdictional Hazard Mitigation Plan
Yolo Tactical Interoperability Communications Plan
Yolo OA Alert and Warning Support Annex
Yolo OA Flood Resources Directory
Emergency Operations Plans for the following:

- Davis, West Sacramento, Winters and Woodland
- Yocha Dehe Wintun Nation
- Yolo County Housing

Yolo County Flood Control and Water Conservation District – Indian Valley Dam Emergency Action Plan
Yolo County Flood Control and Water Conservation District – Cache Creek Dam Emergency Action Plan

- Reclamation District 108 – Grimes Flood Safety Plan
- Reclamation District 150 – Merritt Island Flood Safety Plan
- Reclamation District 307 – Lisbon Flood Safety Plan
- Reclamation District 537 – Elkhorn Basin Flood Safety Plan
- Reclamation District 787 – Grimes Basin Flood Safety Plan
- Reclamation District 900 – Flood Safety Plan
- Reclamation District 999 – Netherlands Flood Safety Plan
- Reclamation District 1600 – Elkhorn Basin Flood Safety Plan
- Reclamation District 2035 – Conaway Flood Safety Plan
- Knights Landing Ridge Drainage District – Flood Safety Plan
- Sacramento West Side Levee District – Grimes Basin Flood Safety Plan
- DWR Sacramento Maintenance Yard, Yolo County Levee Systems Flood Safety Plan
- Yolo County Services Area 6 (CSA6) – Knights Landing Levee System Flood Safety Plan

APPENDIX A: LIST OF LEVEE MAINTAINING AGENCY PLANS

Each LMA listed on the following page has an Emergency Operations Plan - Basic Plan (EOP), contains an Annex A (also known as their Flood Contingency Map) and corresponding Public Safety Map. The table shows those LMAs that are part of a joint plan or map. Additionally, public safety maps and citizen maps were developed for the cities and unincorporated communities within Yolo County. In cases where an LMA does not exist, and EOP or FCM were not developed.

Overview of Flood Safety Plans and Maps					
Flood Safety Plan	Emergency Ops Plan (EOP)	Flood Contingency Map (FCM)	Public Safety Map (PS Map)	Citizen Map (CM)	Prelim Engineering Designs (PED)
Clarksburg Basin					
RD 307 - Lisbon	Lisbon EOP	Clarksburg Basin FCM	---	---	---
RD 765 - Glide	Glide EOP		---	---	---
RD 999 - Netherlands	Netherlands EOP		Clarksburg PS Map	Clarksburg CM	1X
DWR Sac Maintenance Yard					
Cache Creek Levees	SacMY Yolo Levee Systems EOP	SacMY Yolo Levee Systems FCM	Woodland PS Map	---	---
MA-4			---	---	---
Putah Creek			Davis PS Map	---	---
Sacramento Bypass			---	---	---
Willow Slough Bypass			---	---	---
Yolo Bypass West/East Levee			---	Knights Landing CM	---
Elkhorn Basin					
RD 537 - Lovdal	Elkhorn Basin Joint EOP	Elkhorn Basin Joint FCM	---	---	1X
RD 1600 - Mull			---	---	1X
Grimes Basin					
SRWSLD	Grimes Basin Joint EOP	Grimes Basin Joint FCM	---	---	---
RD108 - River Farms			---	---	3 X
RD 787 - Fair Ranch			---	Knights Landing CM	1X

Overview of Flood Safety Plans and Maps					
Flood Safety Plan	Emergency Ops Plan (EOP)	Flood Contingency Map (FCM)	Public Safety Map (PS Map)	Citizen Map (CM)	Prelim Engineering Designs (PED)
Knights Landing Levee System					
County Service Area 6	Knights Landing Levee System Joint EOP (KLLS EOP)	Knights Landing Levee System Joint FCM (KLLS FCM)	Knights Landing PS Map	Knights Landing CM	---
KLRDD - Left Bank					1X
KLRDD - Right Bank					1X
RD150 - Merritt Island	Merritt Island EOP	Merritt Island FCM	---	---	1X
RD 900 - City of West Sac	RD 900 EOP	W Sac FCM	See City of W Sac PS Map	See City of W Sac Map	---
RD 2035 - Conaway	Conaway EOP	Conaway FCM	---	---	2X
RD 2068 - Yolano	Yolano EOP	Yolano FCM	---	---	1X

CITIES	Flood Contingency Map (FCM)	Public Safety Map (PS Map)	Citizen Map (CM)	Prelim Engineering Designs (PED)
City of Davis	*Refer to SacMY FCM (Putah Creek)*	Davis PS Map	Davis CM	---
City of West Sacramento	*Refer to RD900 FCM (Sacramento River)*	W Sac PS Map	W Sac CM	---
City of Winters	*Refer to SacMY FCM (Putah Creek)*	Winters PS Map	Winters CM	---
City of Woodland	*Refer to RD2035 EOP and SacMY FCM (Cache Creek)*	Woodland PS Map	Woodland CM	5X Muscle Wall Deployment

Yocha Dehe Wintun Nation	*Refer to SacMY Yolo Levee Systems FCM (Cache Creek)*	Yocha Dehe PS Map	Yocha Dehe CM	---

UNINCORPORATED COMMUNITIES	Flood Contingency Map (FCM)	Public Safety Map (PS Map)	Citizen Map (CM)
Brooks	*N/A No Levee No LMA*	Yocha Dehe PS Map	Yocha Dehe CM
Clarksburg	*Refer to RD900 and RD150 FCMs*	Clarksburg PS Map	Clarksburg CM
Esparto	*N/A No Levee No LMA*	Yocha Dehe CM	Yocha Dehe CM
Knights Landing	*Refer to KLLS FCM*	Knights Landing PS Map	Knights Landing CM
Madison	*N/A No Levee No LMA*	Yocha Dehe CM	Yocha Dehe CM
Yolo	*N/A No Levee No LMA*	Yolo PS Map	Yolo CM

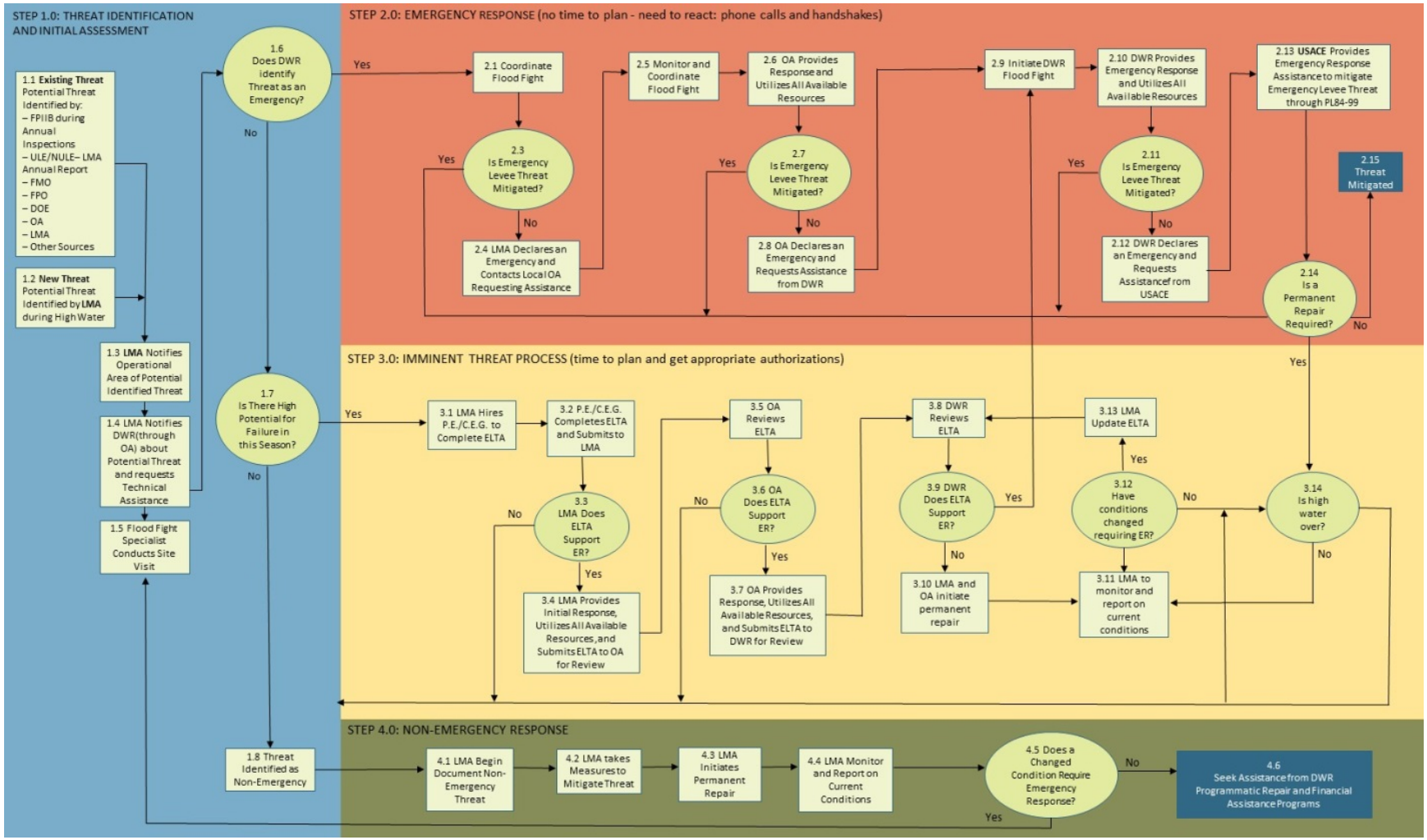
APPENDIX B: LMA TRIGGER CHART

Below is a screen shot of the LMA trigger chart. This document is a comprehensive listing of data for each LMA. The actual document is housed in the EOC ESF 3 tools folders for each EOC throughout Yolo County.

Gauge Name	LMA / City	Gage Owner	Ht. Aware	Monitor	Flood	Danger	Gauge Owner
SACRAMENTO RIVER		CDEC/ Staff		ft	ft	ft	
Clarksburg Marina Staff Gauge	RD 150	Local Staff	--	17	24	25	Staff
	RD 999	Local Staff	--	17	24	25	Staff
FRE Sac River @ Fremont Wier (NAVD88)	RD 537	CDEC		34	39.5	40.3	DWR/NCRO
	RD 1600	CDEC		34	37.5	40.3	DWR/NCRO
	RD 2035	CDEC		40 F	40	40.5	DWR/NCRO
	Sac MY (YBWSL)	CDEC		32	39.5	40.5	DWR/NCRO
IST Sac River at I Street Bridge (NAVD88)	RD 150	CDEC		27.5	33.5	--	DWR/NCRO
	RD 307	CDEC		27.5	33.5	34.5	DWR/NCRO
	RD 537	CDEC		29.5	33.5*	34.5**	DWR/NCRO
	RD 765	CDEC		27.5	33.5	34.5	DWR/NCRO
	RD 900	CDEC		27.5	33.5	34.5	DWR/NCRO
	RD 999	CDEC		27.5	33.5	34.5	DWR/NCRO
	RD 1600	CDEC		29.5	33.5*	34.5**	DWR/NCRO
	Sac MY - MA-4	CDEC		27.7	33.5	34.5	DWR/NCRO
	Sac MY - Sac Bypass	CDEC		29	33.5	34.5	DWR/NCRO
KNL Knights Landing Bridge Staff	CSA-6	CDEC Staff	--	37	41	43	DWR
WLK Sac River Below Wilkins Slough	SRWSLD	CDEC	--	47.6	51	--	USGS

Gauge Name	LMA / City	Gage Owner	Ht. Aware	Monitor	Flood	Danger	Gauge Owner
YBY Yolo Bypass Near Woodland	RD 1600	CDEC	--	18	21.6	--	DWR
	RD 537	CDEC	--	18	21.6	--	DWR
CACHE CREEK							
RUM Cache Creek @ Rumsey Bridge	Sac MY Cache Creek Levees	CDEC	--	14.5	16.5	--	USGS/DWR
COLUSA DRAIN							
KLG Colusa Drain @ Knights Landing	RD108	CDEC	33	34.5	37 OR 34.5 + 20mph winds	--	DWR/NCRO
	RD787	CDEC	33	34.5		--	DWR/NCRO
	KLRDD	CDEC Staff	33	34.5		--	DWR/NCRO

APPENDIX C: DWR FLOOD RESPONSE DIAGRAM



APPENDIX D: VERSION HISTORY

Change Number	Section	Date of Change	Individual Making Change	Description of Change
0.1	All			Initial draft of Flood Annex
0.2	All	02/22/18	Yolo OES	Add edit notes
0.3	All	06/11/18	KSN & HCI	Make edits requested by OES
0.4	All	08/18/21	Yolo OES	Final OES edits
0.5	All	10/14/21	Partner Agencies	Revision requests from partner agencies throughout Yolo incorporated
0.6	Maps & Charts	11/19/21	Yolo OES	Made changes throughout to remove RD 785 & RD 827 due to those RD's combining with others