Nov 2026

Flood Emergency Preparedness in the Delta

Delta Stewardship Council

A CALIFORNIA STATE AGENCY

The Delta is Facing Multiple Flood Stressors

Upstream: Higher flows from the Sacramento and San Joaquin rivers.

The Middle: Subsidence leaving islands well below sea level.

Downstream: Sea level rise and tidal forcing pressing from San Francisco Bay.

These pressures aren't decades away — they're measurable now.



Flood Relevance to the Delta Plan

- Threats to Delta Coequal Goals of California water supply and ecosystem if islands are flooded.
- Delta Plan and Delta Adapts have relevant flood emergency response recommendations.



This image shows the levee failure at Jones Tract in 2004.

Emergency Management Cycle

- **Preparedness:** Occur prior to a disaster to ensure better response.
- **Response:** Occur in the 72 hours following a disaster.
- **Recovery:** Occur after the disaster to return damaged site to “normal”.
- **Mitigation:** Implementing designs that minimize adverse effects of future disasters in the long term.



DELTA STEWARDSHIP COUNCIL · NOVEMBER 2026

Getting Ready for Flood Season

What Reclamation Districts do before high water

Emily Pappalardo, P.E., CFM

District Engineer · Owner Tule Engineering, Inc. · Walnut Grove

PREPARATION

Before the first storm

Inspection

Walk the levees, clear vegetation for future inspection, fill rodent burrows, fix known trouble spots.

District Facilities

Test pump stations and backup power. Clear trash racks, drains, and ditches. Document condition of facilities

Materials

Sandbags, plastic, stakes, rock, and fill on hand

Authority and Contracts

Board resolutions so the district can act and contract quickly in an emergency.

Contacts

Current call lists: trustees, contractors, County OES, DWR flood operations, neighbors.

People

Assign patrol crews and train them before they’re needed.

TRAINING

Hands-on flood fight training

WHEN
Tuesday November 17th

WHERE
Walnut Grove Flood Yard

HOSTED BY
Walnut Grove Rotary Club, Walnut Grove Fire, Dept of Water Resources, and Tule Engineering

WHO
District crews, consultants, agency representatives, and community volunteers

Hands-on stations

- Identifying and staking levee issues
- Filling, tying, and placing sandbags
- Building a boil ring
- Plastic sheeting wave wash protection
- Muscle wall installation



Source: US Army Corps of Engineers, 2023

FLOOD FIGHTING

Protecting the levee from failure



Slope failure protection, Deadhorse Island, 2023



Seepage ring, Glannvale Tract, 2017



Overtopping protection, Van Sickle Island, 2019

SEEPAGE

Watch the color of the water

MONITOR

Clear water

Water is moving through. Soil is not.



ACT NOW

Muddy water

Soil is getting carried out of the levee or its foundation.



Tule Engineering · Delta Stewardship Council

FLOOD FIGHT TRAINING

In a flood fight, timing is everything. Flood fight methods can help buy time while larger equipment and materials mobilize to the site.



FLOOD EMERGENCY PREPAREDNESS IN THE DELTA

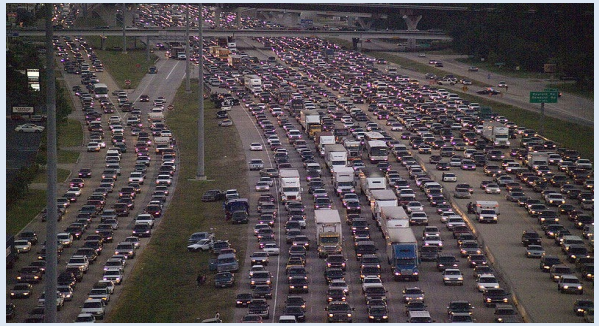
Elizabeth Ramos and Tiffany Cacho

Key Components of Flood Emergency Preparedness

1. Levees are our first line of defense

2. Emergency Preparedness and Response





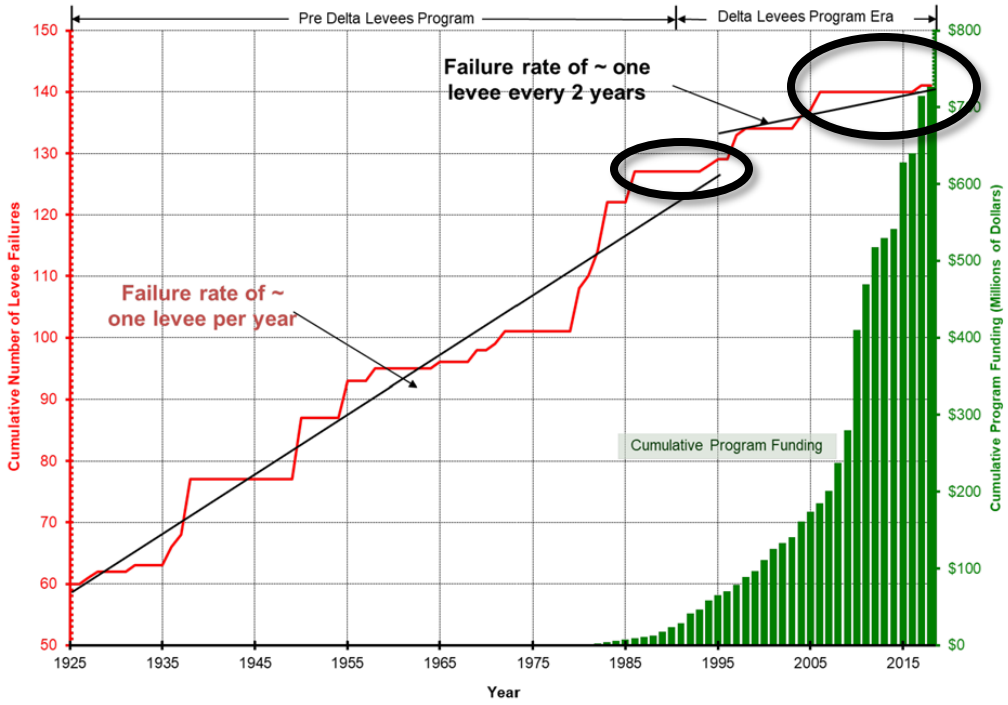


Figure 4 - Cumulative Delta Levee Failures (Source: DWR Delta Levees Program)

Flood Emergency Preparedness in the Delta

Flood Emergency Response Grant Program

1997

- Under leadership of San Joaquin County, LMAs begin to develop Flood Safety Plans

2012

- Since 2012, DWR has invested more than $50M in the Delta and Statewide Regions through the Flood Emergency Response Program grants

Now

- Exercise and update plans as necessary
- Train new staff
- Replenish flood fight supplies

- Grants aimed to improve public safety, and preparedness at the local level

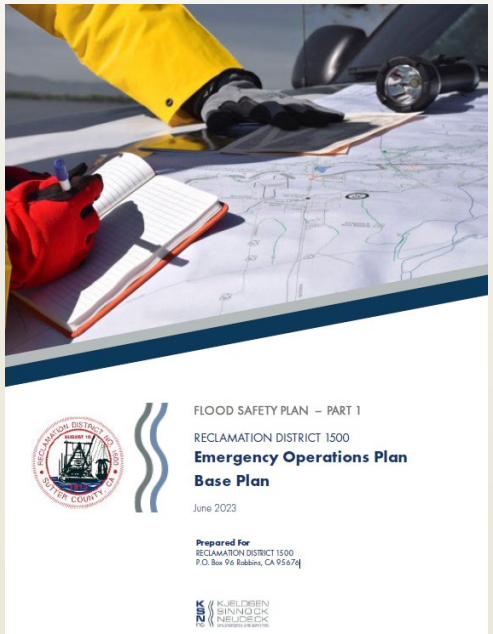
1 Flood Safety Plans

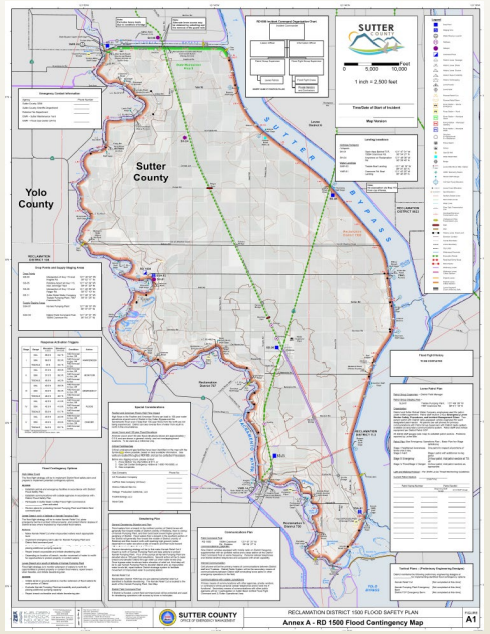
2 Training and Exercises

3 Flood Fight Supplies

Flood Safety Plans for Levee Maintaining Agencies

- Consistent with CA Water Code 9650 (AB 156), FEMA CPG 101, and the National Response Framework
- LMA can respond to an event **and** work with other response agencies
- Flood Safety Plan has two components:





Flood Contingency Map (FCM)


Hands-on Flood Fight Training


Delta-wide Full-Scale Exercise
San Joaquin County EOC


Delta-wide Full-Scale Exercise
RD 3 Field Command Post



Just in Time Training Program

Designed to address common challenges faced by agencies with limited staff and resources:

- Extraneous time commitments (up to 40+ hours)
- Turn over rate and staff changes
- Frequency of use

MID & UPPER Sacramento RIVER
REGIONAL FLOOD MANAGEMENT PLAN

SAN JOAQUIN COUNTY | OES

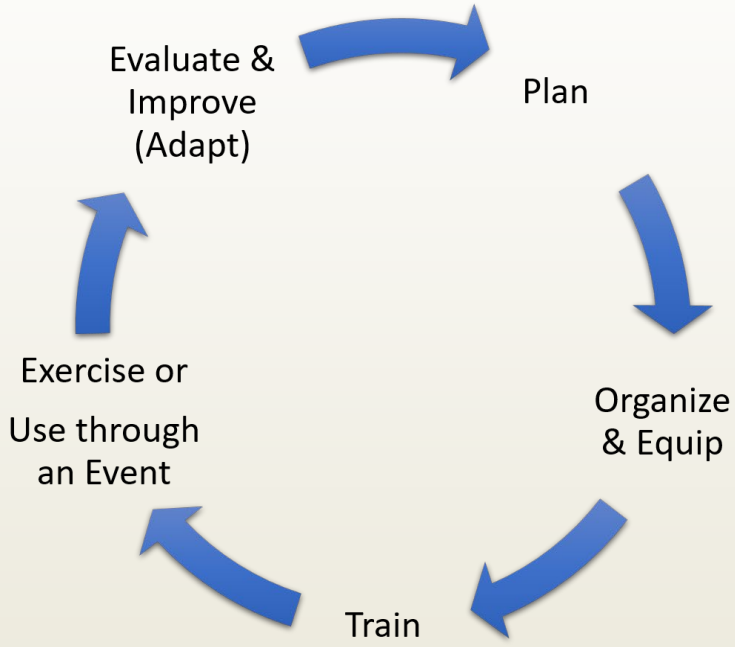
MUSRFLOOD.SQUARESPACE.COM


Waterside Slope
50 feet
from Levee Toe
2017
High Water
Event
RD No. 0404
Boggs Tract

17

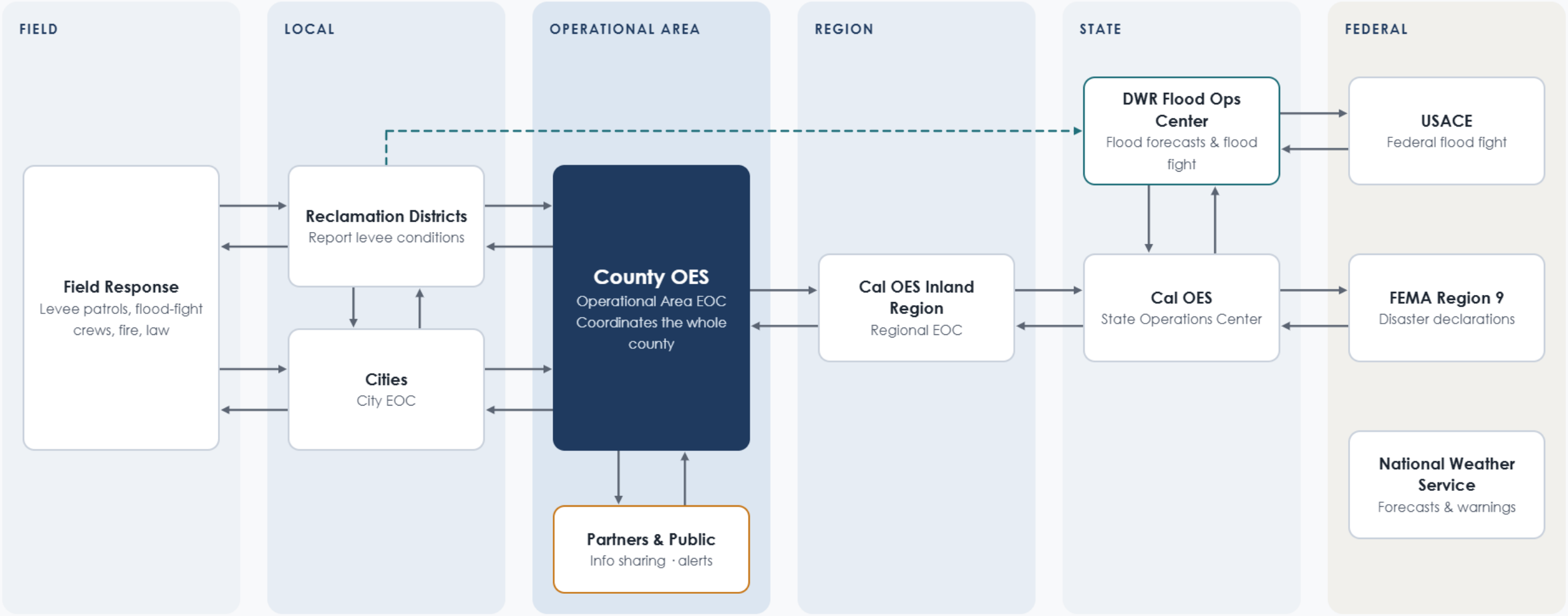
Preparedness and Response

- Working in "Blue Sky" with districts to get to know everyone first
- Review plans, learn FCM data, and history
- Work together for alert and warning and evacuations
- Support field and cities



How Flood Response Is Coordinated

California SEMS · San Joaquin Operational Area



How It Works

What happens behind the structure

SEMS Basics

- Emergencies begin and end **locally**
- Requests go up **one level at a time**; resources come back down
- Each level activates **only as needed**
- Using SEMS keeps the county **eligible for state reimbursement**

Making It Official

10 days	Proclaim a local emergency
7 days	Board ratifies a proclamation made by the designated official
60 days	Review until it ends
State	CDAA disaster assistance
Federal	Presidential declaration (Stafford Act)

County OES Focus

Looks beyond the levee at impacts across the county:

Evacuations · Sheltering · Transportation · Hospitals & healthcare · Schools · Utilities · Agriculture · Public information · Recovery

Flood Emergency Response Grant Program





Funding Flow= FEMA unpredictability

- Who helps districts and people
- PA/IA
- Declarations/Proclamations
- Timing of funding- may be back-to-back disasters
- Leads back to preparedness.

Thank you

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