

Update on CA Dept. Water Resources Flood Management Activities

County Engineers Association of California: Flood Control and Water Resources Policy Committee
December 3, 2025

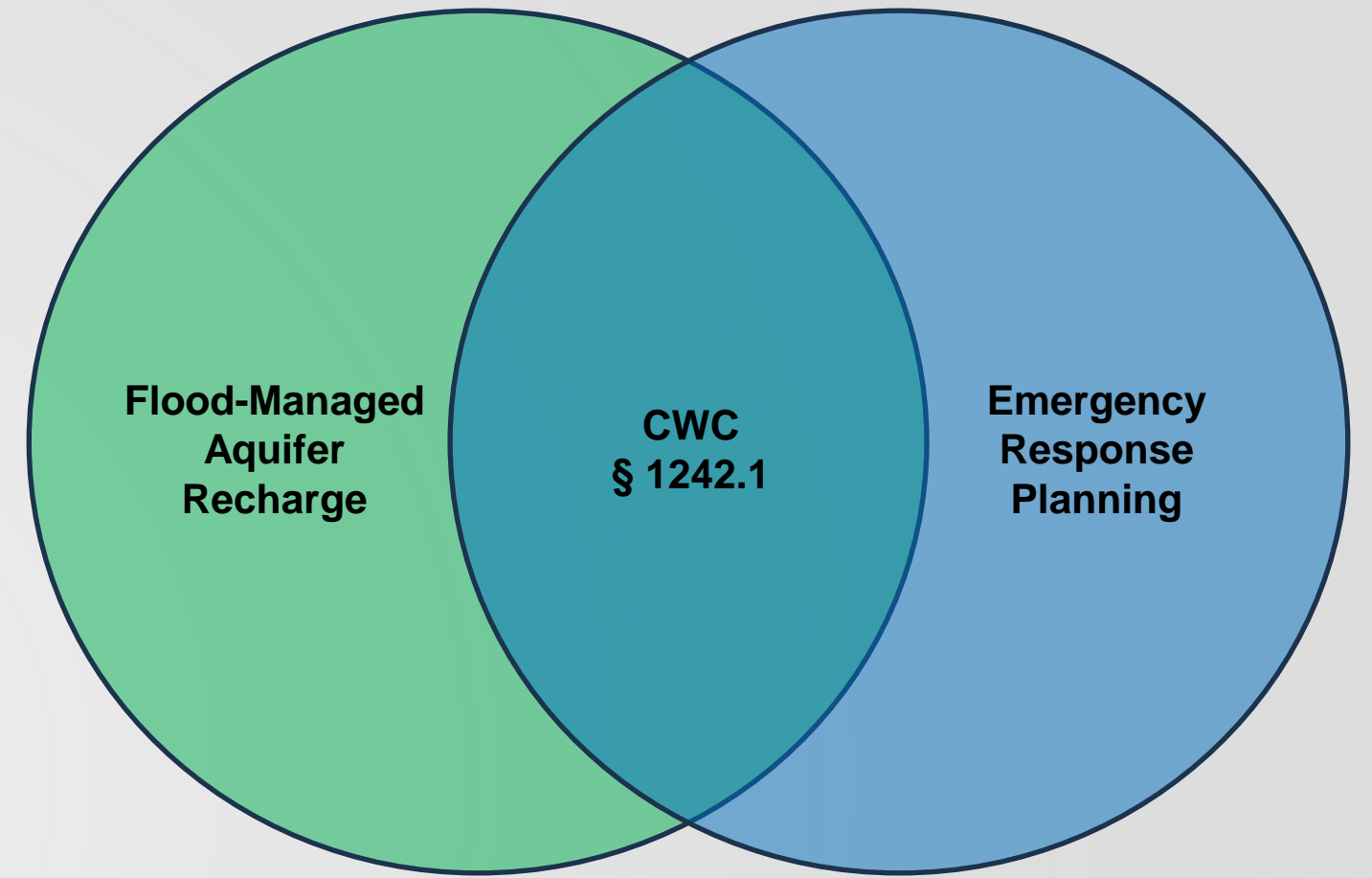


Image: Flood Emergency Diversions Venn Diagram

Outline of Today's Topics

- Update on DWR Statewide Flood Management Financial Assistance Programs
 - Dam Safety Climate and Resilience Program
- Update on FEMA Efforts
 - FEMA Review Council
 - Flood Futures Expert Panel Scoping Report
- National Levee Safety Program
 - One-Time Screening of non-USACE levee systems
- Flood Diversion and Recharge Enhancement



DWR's Flood Management Financial Assistance Programs

DWR Flood Risk Reduction Grant Program	Status	State Plan of Flood Control	Central Valley	Statewide	Current Fund Source
Statewide Flood Control Subventions Program*	Ongoing			✓	Proposition 1E
Dam Safety Climate and Resilience Program*	Draft Regulations			✓	Proposition 4
Local Levee Assistance Program	Legacy / Closed			✓	Proposition 1E
Flood Corridor Program	Legacy / Closed			✓	Proposition 13 & 84
Small Community Flood Risk Reduction Program*	Funding Committed	✓			Proposition 1E
Regional Flood Management Planning (Directed Funding)	Funding Committed	✓			Propositions 1E & 68
Central Valley Tributaries Program	Funding Committed		✓		Proposition 1
Coastal Flood Risk Reduction Protection Program	Funding Committed			✓	Propositions 1 & 68
Floodplain Management Protection and Risk Awareness Program	Funding Committed	✓	✓	✓	Proposition 68
Conveyance Subsidence Program (Directed Funding)	Funding Committed		✓		General Fund
State Flood Emergency Response Program (Round 3)*	?			✓	Proposition 84



Dam Safety and Climate Resilience Program

- Voters approved \$450M in Prop 4 to start the new Dam Safety and Climate Resilience Program
- Prioritizes protection of public safety, restoration of water storage, flood risk reduction, enhancement of water supply reliability, protection of water quality, and enhancement, protection, or restoration of habitat for fish and wildlife
- DWR had to shift the development of the guidelines to a longer regulation process overseen by the State Office of Administrative Law (OAL)
- DWR-DSOD used this regulation process when preparing the requirements for dam owners SB92 mapping requirements
- **Project solicitations expected in 2027**



FEMA UPDATES



Image: FEMA Review Council, established by EO 14180 is to report by Nov. 2025 – **maybe in 2025?**

Options for Flood Recovery & Flood Insurance



Securing California's Flood Future

In a time of national policy turbulence



Policy White Paper: Sept. 2, 2025

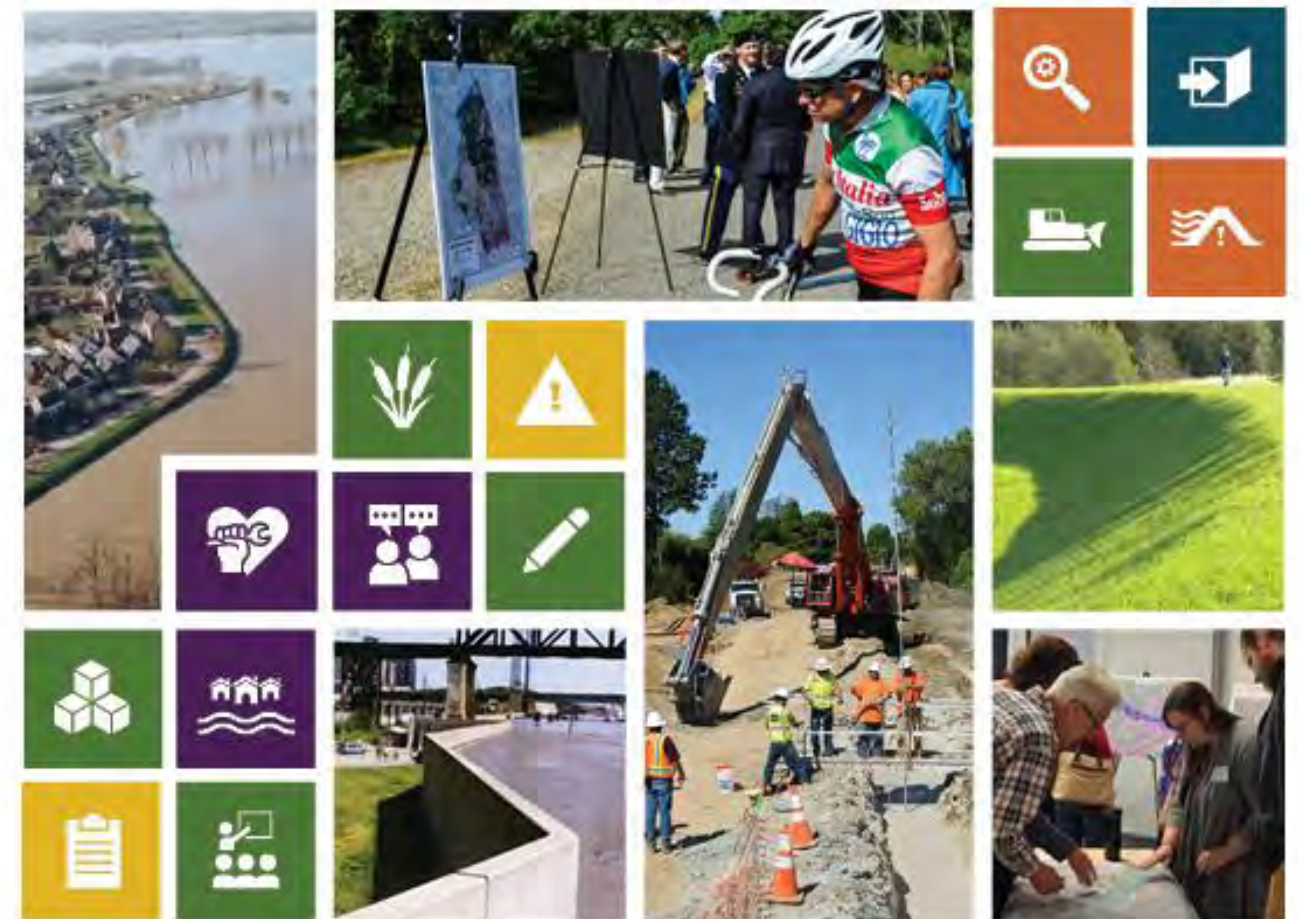
Scoping Report of the Expert Panel, convened June, 2025

in cooperation with U.C. Davis, Flood Risk and Policy Research Group

FEMA Review Council recommendations were due last month

- UC Davis has been leading an Expert Panel to provide recommendations to the State on strategies to work with changing Federal priorities for flood recovery and flood insurance
- In June, 2025 this Expert Panel released a scoping report which:
 - Identifies both the strengths and weaknesses of FEMA and NFIP programs
 - Proposes bipartisan legislative reforms to replace harmful executive actions
 - Outlines three future scenarios for emergency management in the U.S.: Minimal, Moderate, and Disruptive change
 - Concludes that California is uniquely positioned to lead, taking on many FEMA/NFIP functions more effectively
- The Expert Panel convened in Nov. 2025 and is finalizing its recommendations
- FEMA Review Council will meet in person on Dec. 11, 2025 to discuss their draft final report

NATIONAL LEVEE SAFETY PROGRAM



DRAFT 1ST EDITION
APRIL 2024

Example of a Coastal Levee in NLD

Marin County Levee 19

Location: San Rafael, Marin County, California
System ID: 1905000045
Operation and Maintenance Organization: City of San Rafael
Floodplain Management: FEMA Region 9
Data Last Updated: 7/30/2025

Summary
The Marin County 19 system is located in San Rafael, CA, and was constructed in the 1950s. The approximately 2.3-mile-long coastal levee is operated and maintained by the City of San Rafael. The levee was built on reclaimed land and runs along the shore of San Francisco Bay and the mouth of San Rafael Canal, protecting the city from extreme tides and waves. The original levee was about 1.4 miles long, consisting of dredged material, refuse, building rubble, and quarried fill material, and terminated on the north side of the Canalways area. Later, the levee was extended to the north with the construction of the Spinnaker development. The current Tiscornia Marsh project proposes rerouting and raising the northern section of the levee along the north side of the Al-Boro Community Center fields, allowing tidal flows into the marsh. The levee provides flood protection for about 1.7 square miles of San Rafael, which includes residential, commercial, industrial, and public infrastructure such as schools, health care facilities, and a fire station. However, because the levee does not extend the full length of the canal, high water levels in San Rafael Creek can cause flooding behind the levee in the low-lying sections of the city. Flooding behind the levee from the canal and other sources, such as heavy rainfall, is managed through five pump stations located throughout the city.

Flooding Hazard
Flooding Source: San Rafael Bay
Upstream Dams: No Data
Historic Loading by Percentage of Height: No historic loading data available at this time

Levee Length: 1.731 Miles
Average Levee Height: No Data
Year Levee Constructed: No Data

Behind this Levee
2,552 Buildings
18,909 People
\$3 Billion in Property Value
6.2 Acres of Farmland
No Endangered Species Living Behind This Levee
10 Critical Structures
1 Communities
Tribal Lands Behind This Levee



Levee Owner View

← National Levee Database HOME ADVANCED SEARCH DASHBOARD MAP CHANGES MORE Michael.Mierzwa@water.ca.gov

Marin County Levee 19 Date Last Updated 08/04/2025 Info Map VIEW SUMMARY PAGE VIEW EDIT HISTORY DATA CHANGE REQUEST DOWNLOAD DATA REPORT DOWNLOAD DATA SUBSCRIBE

Location **San Rafael, Marin County, California** USACE Districts **San Francisco** FEMA Regions **9** Data Stewards **FEMA - Region IX**

SYSTEM SEGMENTS FEATURES PROFILE RISK INSPECTIONS ATTACHMENTS

Levee System

<u>System Name</u>	<u>System Type</u>	<u>System ID</u>
Marin County Levee 19	Levee System	1905000045
<u>Responsible Organization (Public Field)</u>	<u>Floodplain Management (Public Field)</u>	<u>NFIP Status</u>
California	FEMA Region 9	Non-Accredited Levee System ⓘ

Summary (Public Field)

The Marin County 19 system is located in San Rafael, CA, and was constructed in the 1950s. The approximately 2.3-mile-long coastal levee is operated and maintained by the City of San Rafael. The levee was built on reclaimed land and runs along the shore of San Francisco Bay and the mouth of San Rafael Canal, protecting the city from extreme tides and waves. The original levee was about 1.4 miles long, consisting of dredged material, refuse, building rubble, and quarried fill material, and terminated on the north side of the Canalways area. Later, the levee was extended to the north with the construction of the Spinnaker development. The current Tiscornia Marsh project proposes rerouting and raising the northern section of the levee along the north side of the Al-Boro Community Center fields, allowing tidal flows into the marsh.

The levee provides flood protection for about 1.7 square miles of San Rafael, which includes residential, commercial, industrial, and public infrastructure such as schools, health care facilities, and a fire station. However, because the levee does not extend the full length of the canal, high water levels in San Rafael Creek can cause flooding behind the levee in the low-lying sections of the city. Flooding behind the levee from the canal and other sources, such as heavy rainfall, is managed through five pump stations located throughout the city.

<u>Emergency Management Agency</u>	<u>Emergency Contact (Phone #)</u>
------------------------------------	------------------------------------

Layer Controls LEGEND + - i

San Rafael
Greenbrae
San Quentin
2000 ft



Levee Owner Attachments Page

An official website of the United States government [Here's how you know](#)

National Levee Database HOME ADVANCED SEARCH DASHBOARD MAP CHANGES MORE Michael.Mierzwa@water.ca.gov

Marin County Levee 19 Date Last Updated: 11/21/2025 Info Map VIEW SUMMARY PAGE VIEW EDIT HISTORY DATA CHANGE REQUEST DOWNLOAD DATA REPORT DOWNLOAD DATA SUBSCRIBE

Location: San Rafael, Marin County, California USACE Districts: San Francisco FEMA Regions: 9 Data Stewards: FEMA - Region IX

SYSTEM SEGMENTS FEATURES PROFILE RISK INSPECTIONS **ATTACHMENTS**

Attachments Columns

Filename	Date Uploaded	Content Description	Type
2020 SLR-Adaptation-Report-final-12-7-20.pdf	06/26/2025	FLOOD RISK & SEA LEVEL RISE ADAPTATION REPORT FOR SAN RAFAEL GENERAL PLAN 2040	OT
2020 San-Rafael-SLR-Vulnerability-Study-2020-06-19.pdf	06/26/2025	2020 San-Rafael-SLR-Vulnerability-Study-2020-06-19	OT
Geotech report - Tiscornia Marsh.pdf	06/16/2025	Geotech report - Tiscornia Marsh	Ge
Summary of Site Conditions_06011999.pdf	06/16/2025	Summary of Site Conditions_06011999	Ge
Geotech report - San Quentin Pump station _IS_MND-Appendices.pdf	06/16/2025	Geotech report - San Quentin Pump station _IS_MND-Appendices	Ge
Marin Airport_Boring Logs.pdf	06/16/2025	Marin Airport_Boring Logs	Ge
2350 Kerner Blvd_Boring Logs.pdf	06/16/2025	2350 Kerner Blvd_Boring Logs	Ge
1992 USACE 1992 Marin County Shoreline Study San Rafael.pdf	06/16/2025	1992 USACE 1992 Marin County Shoreline Study San Rafael	Ge
240606_SanRafael_SLR_TAC_image.pdf	06/13/2025	San Rafael Image	Im
Historic_Photos.pdf	06/13/2025	Historic photos of the levee and surrounding areas provided by the City of San Rafael.	Im
2016 Report_Spinnaker_Final_3005_2016-0209 (low res).pdf	06/13/2025	2016 East Spinnaker Point Lagoon Conceptual Enhancement and Management Alternatives Report	Fe
1992 USACE 1992 Marin County Shoreline Study San Rafael.pdf	06/13/2025	1992 USACE Final Feasibility Report and EIS, Marin County Shoreline, San Rafael Canal	Fe



One-Time Levee Review

- Collection of Available Data Sources
- Site Visit/Inspection: General Levee Condition and Inform Risk Assessment
- Screening Risk Assessments:
 - Flood Loading
 - Expected Levee Performance
 - Consequences of Levee Breach and Overtopping



Image: Cosumnes River levee, looking upstream (Sacramento County), Feb. 2024.



List of Screenings of Non-USACE Levees in CA

Levee System(s)	Community	Land Use Protected	Flood Hazard	Maintainer	Date(s) of Screening	Number of Systems Screened
Cosumnes River	Sacramento County / Wilton / Rancho Muretia	Rural / Ag	Riverine (Rain Flood)	RD 800	Feb 24, Apr 25, Jun 25	6
Kern River	Bakersfield	Industrial	Riverine (Snow Melt)	Kern County Water Agency	Nov 23	1
City of Oroville, CA	Oroville	Urban	Riverine (Rain Flood and Snow Melt)	Oroville	May 25	1
San Pablo Bay Levee	San Rafael	Urban	Coastal	San Rafael	Jun 25	1
Mojave River Levee	Victorville	Urban	Riverine (Snow Melt – High Desert)	San Bernardino County	Jul 25	1
Sycamore Creek Levee	San Bernardino	Suburban	Debris (Mountain)	San Bernardino County	Jul 25	1
Ely Basin	Ontario	Urban	Recharge Basin	SBC, CBWCD	Nov 25	1



FLOOD DIVERSION FOR RECHARGE ENHANCEMENT

Technical Guidance Water Code 1242.1 - Flood Diversions for Groundwater Recharge UPDATED TO REFLECT EXECUTIVE ORDER N-16-25

This document provides technical guidance on a recently enacted pathway for parties to divert surface water to help alleviate flooding while also recharging California's depleted groundwater basins. Please note the responses to these questions have been highly simplified to summarize complex issues and should not be considered formal or legal guidance. This document may be updated periodically. If you have a question not addressed here, please contact FloodDiversion@waterboards.ca.gov.

General Questions

What is Water Code section [1242.1](#)?

On July 10, 2023, Senate Bill 122 added section 1242.1 to the California Water Code (Section 1242.1) with the dual purpose of managing floods and expediting the restoration of the State's groundwater levels. Section 1242.1 creates a pathway that can be used during extreme flood events that allows for diversion of flood water without a water right. These diversions can have dual benefits: reducing flood risks and impacts, while at the same time recharging groundwater aquifers. Section 1242.1 includes reporting requirements and other protective conditions that are intended to prevent impacts to sensitive infrastructure, ecosystems, and existing water rights holders.

Can surface water be diverted anywhere or at any time under Water Code section 1242.1?

No, Section 1242.1 establishes limitations on when and where floodflows can be diverted.

What are the general requirements of Water Code section 1242.1?

- Diversions can only occur if a local or regional agency has issued a public notice that flows downstream of the point of diversion are at imminent risk of flooding and inundation of lands, roads, or structures.
- Diversions must comply with Section 1242.1's specified protective conditions, including noticing and reporting requirements.
- Section 1242.1 expires on January 1, 2029.

Executive Order

How did Executive Order N-16-25 modify Water Code Section 1242.1?

On January 31, 2025, Gov. Gavin Newsom issued [Executive Order N-16-25](#) to facilitate the use of flood waters to recharge California's aquifers by suspending certain requirements of Water Code 1242.1. The suspension only applies to 39 counties (the

SB 122 / CWC 1242.1 Background

- CWC 1242.1 permits local entities to adopt plans to facilitate the dual objectives timely diversions of floodwater to promote groundwater recharge (which addresses future water supply issues) and to address anticipated downstream or localized flood losses
- Review SWRCB Technical Guide at:
https://waterboards.ca.gov/waterrights/water_issues/programs/groundwater-recharge/docs/1242-1-tech-guidance.pdf
- Local agency must have considered flood risk as part of an adopted general plan or for urban areas within the Sacramento-San Joaquin Drainage District an adopted local plan of flood control (per CWC 8201)



Challenges with Floodwater Diversion Implementation

- What constitutes a flood emergency?
- What constitutes a *pending* flood emergency?
- What can you do, in a timely manner, to avoid the consequences from a flood event?
- What are long-term solutions and what are short-term solutions?
- What are going to be on-going problems due to residual risk?



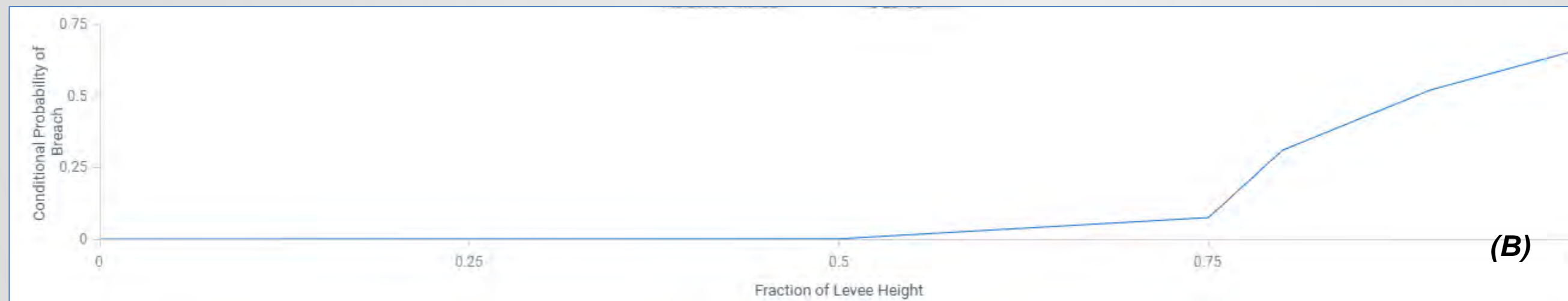
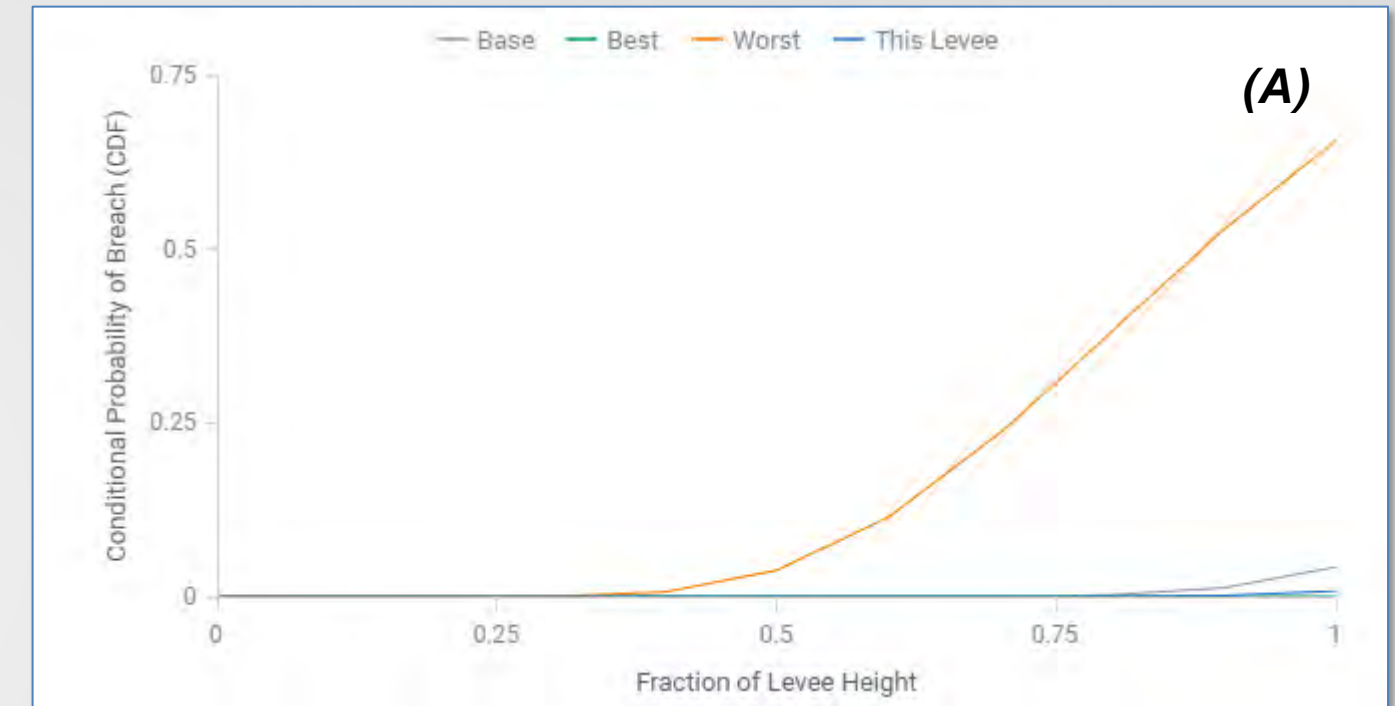
Opportunities to Address Floodwater Diversion Challenges

- ✓ Accept that there is always a degree of residual risk; and that this residual risk changes over time
- ✓ Create emergency response plans
 - ✓ Basic templates / outlines
 - ✓ Site specific plans
 - ✓ Scenario specific plans
- ✓ Develop triggers or thresholds when you need to implement the plans and also when to stand down from the emergency response environment
- ✓ Dedicate time to constantly exercising and updating these plans, even if nothing happens (aka the fire drill)



Example of Uncertainty in Flood Risk Management: Levee Fragility

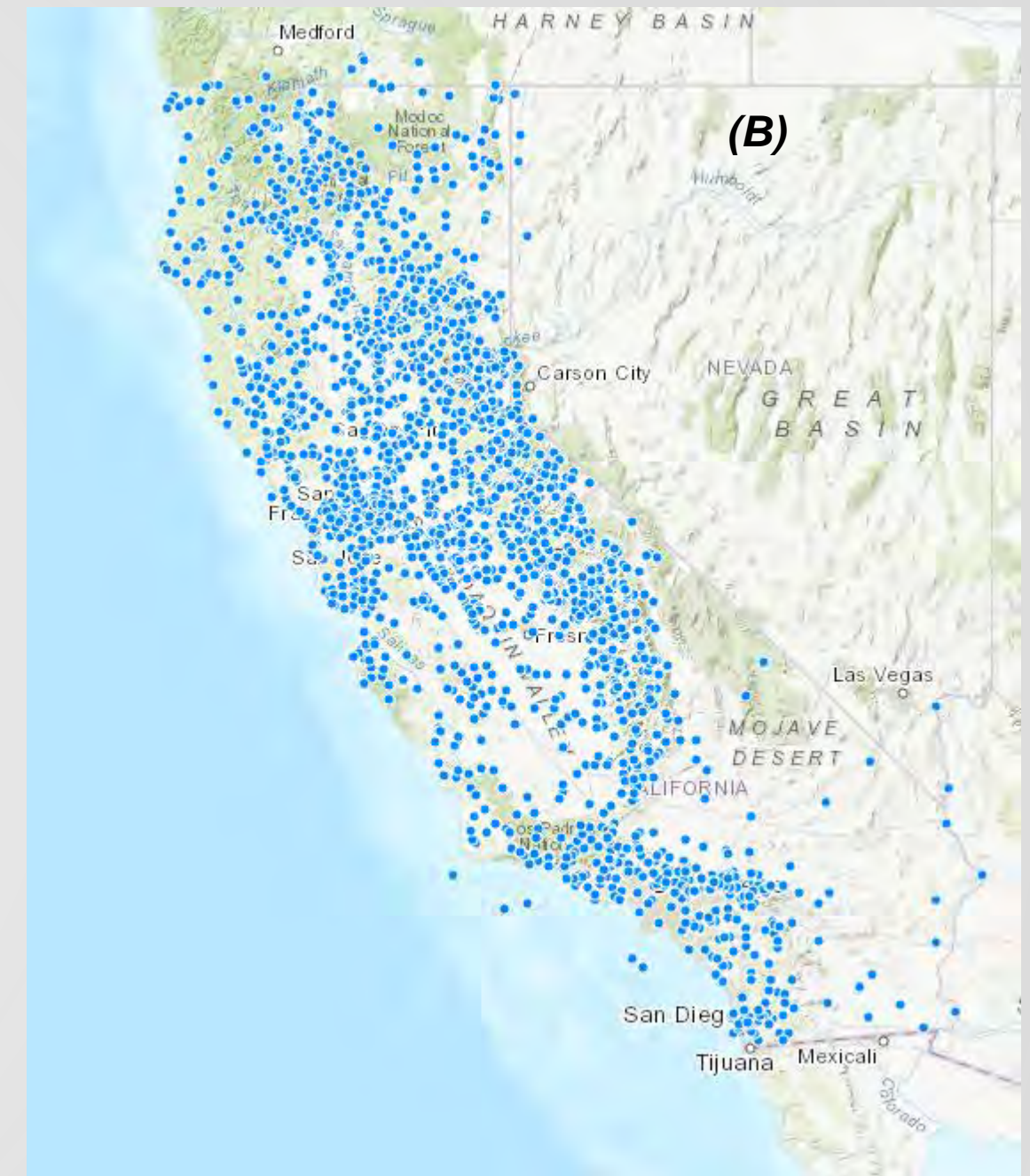
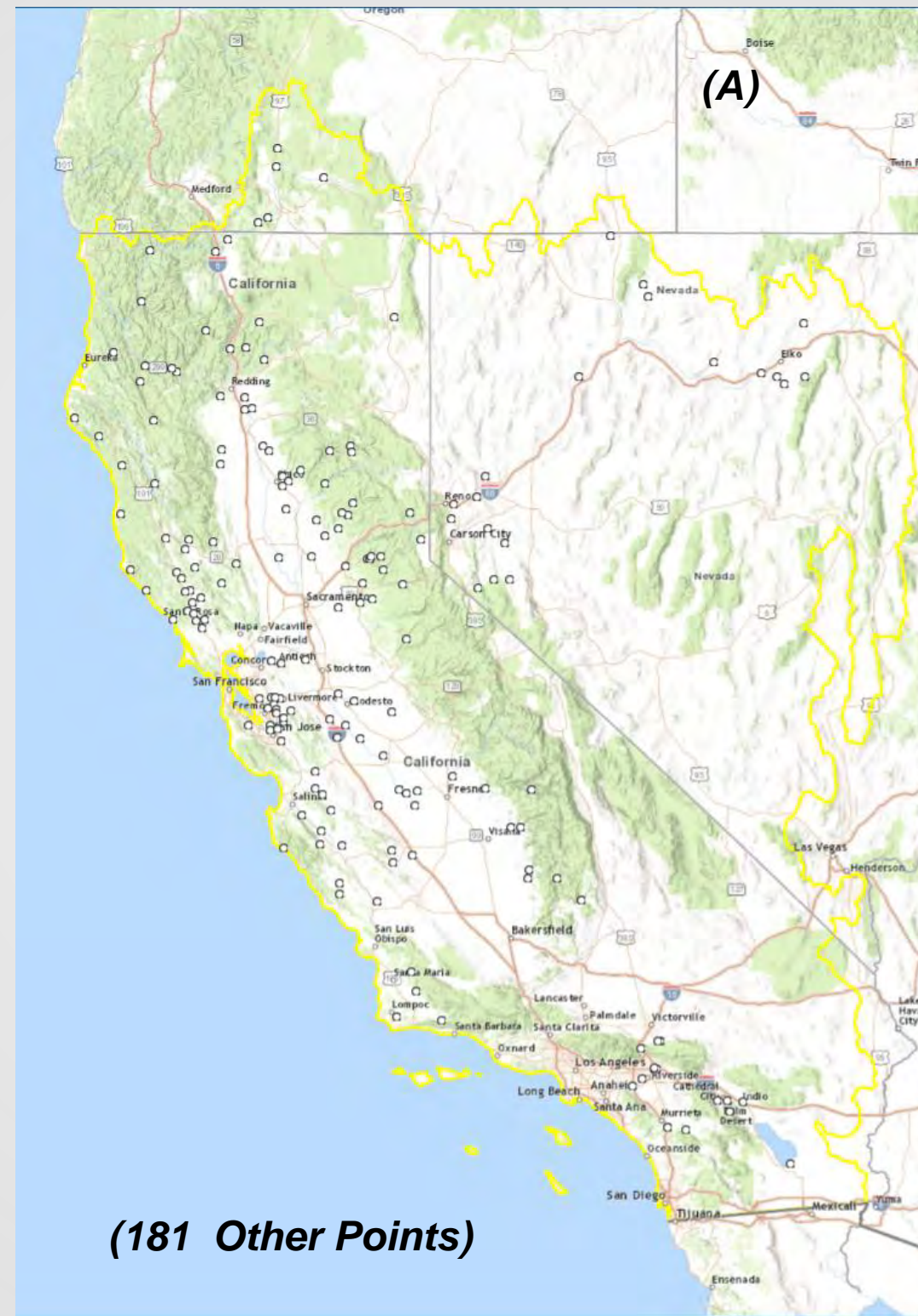
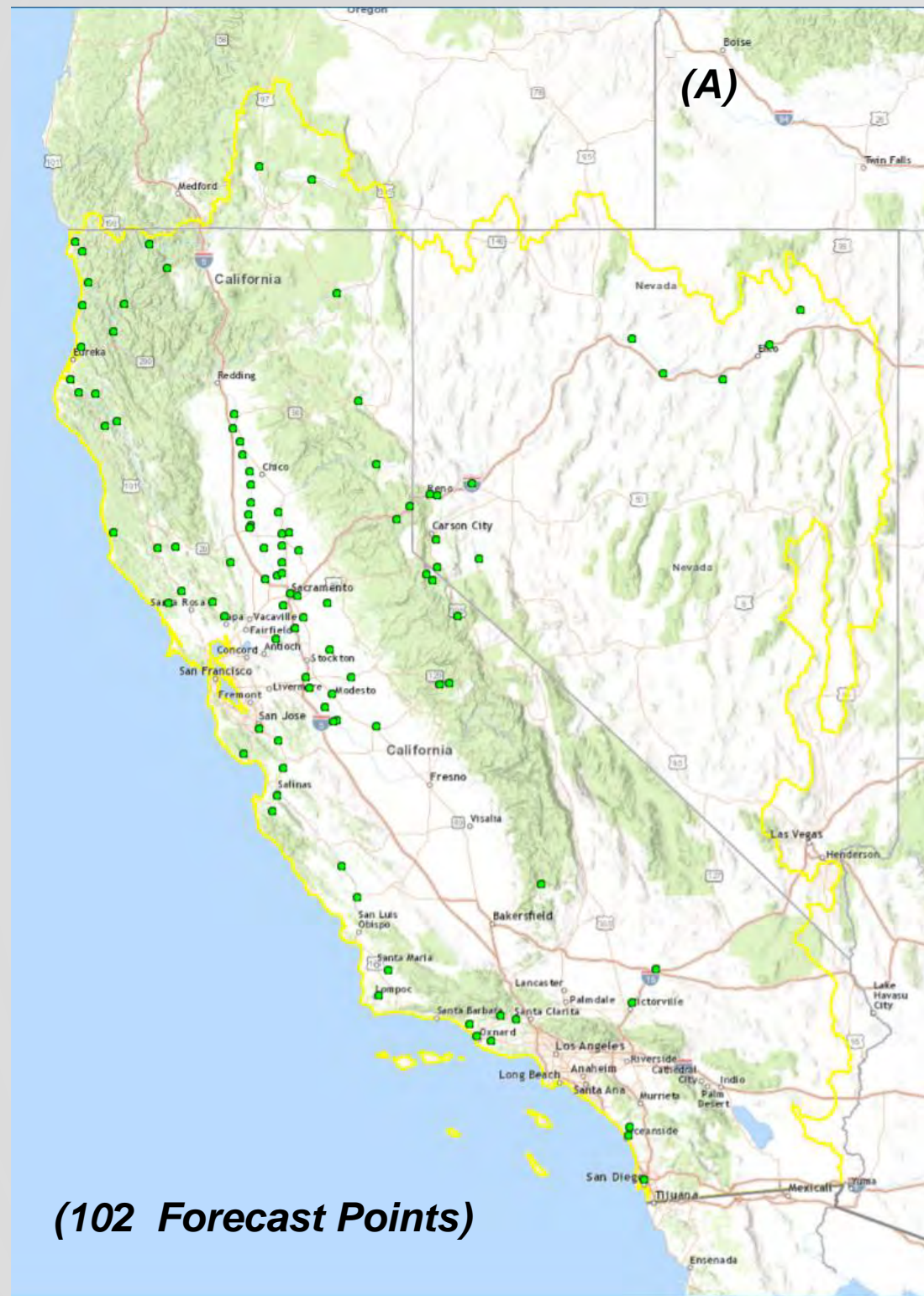
- There is always a chance of levee failure before water reaches the top of the levee segment
- This concept is known as levee fragility, and can be estimated for different failure modes for any specific levee system



Images: Screen shots of conditional breach probabilities for two failure modes along a California levee system from US Army Corps of Engineers Levee Screening Tool (a) backward piping erosion embankment failure and (b) internal erosion through embankment due to concentrated leak erosion.



Example of Potential Trigger Availability



Images: (a) National Weather Service CA-NV River Forecast Center stage forecasts vs. (b) California Data Exchange Center real-time observation stations.



Emergency Flood Diversion Plans

Issue:

SB 122 and CWC 1242.1 only allows emergency diversion of floodwaters if communities have completed one of two types of plans: 1) general plans or 2) local plans of flood control. In practice neither of these plans is intended to address emergency response actions.

Type of 1242.1 Plan	Purpose of Plans	Lead State Entity	Gap
General Plan	Future land use planning, specifically for guiding infrastructure and growth	Office of Land Use and Climate Innovation	These are land use plans, they do not describe emergency response actions; they are really for zoning and building standards
Local Plan of Flood Control	Finding by urban community (over 10,000 people) that levee improvements will provide a 200-year level of flood protection	Central Valley Flood Protection Board	These are certifications to allow urban areas to continue development, but limited to urban areas, which will not offer as many areas to safely divert floodwater; these are not emergency response plans

Path Forward:

EO N-16-25 temporarily suspends the requirement for emergency plans in order to implement CWC 1242.1 emergency diversion of floodwaters. But counties and cities do have land use and emergency response authorities, and they have other planning mechanisms that provide transparency and accountability for implementation of these two authorities that can meet the intent of SB 122.

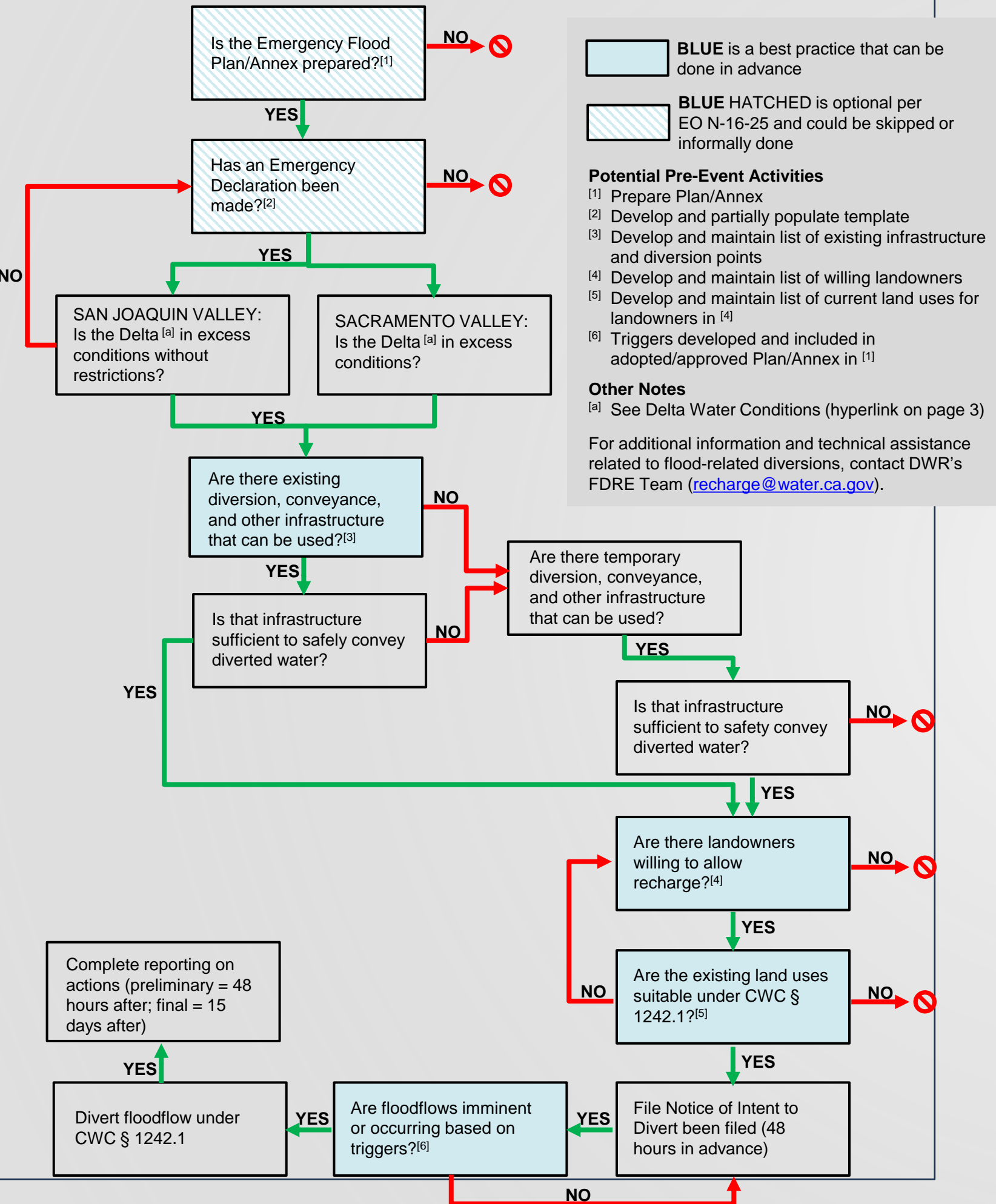


Elements of Emergency Flood Diversion Plans

1. Statement of emergency authorities and responsibilities (including the need for a local emergency declaration).
2. Identification of all types of flood hazards.
3. Identification of recent flood impacts including (1) available photos, (2) assets at risk, (3) parcel information for inundation areas, or (4) location of the compromised existing flood defense system.
4. Identification of flood defense systems (e.g., levees, detention basins, floodways, waterways, dams with flood control space)
5. Identification of potential diversion and recharge areas.
6. Description of land uses in areas of impact and areas of recharge.
7. List of communities at risk of flooding that could benefit from emergency diversions and resulting future water supplies.
- 8. Discussion of consistency of existing emergency response plans for the communities (see #7), regional Groundwater Sustainability Plans, and evacuation plans for the recharge areas.**
9. Identification of flood diversion triggers (both on and off) based on the identified flood hazards (see #2). Triggers may be associated with forecasted water levels/river stages, forecasted flow rates/reservoir releases, upstream precipitation (observed or forecasted), or observed inundation areas.
10. Discussion of the status of coordination with water suppliers (including Groundwater Sustainability Agencies) on how the management of floodflows could bolster local water supplies.
11. Process for recording and reporting on the time, duration, and volume of water diverted and any observed abnormalities associated with the water course.



Diverting Floodwater for Recharge—Taking an Action Under CWC § 1242.1



DRAFT CWC 1241.2 Flow Chart

Information Used from Emergency Flood Diversion Plan

Why

- Emergency Declaration
- Identification of recent flood impacts including (1) available photos, (2) assets at risk, (3) parcel information for inundation areas, or (4) location of the compromised existing flood defense system.

How & Where

- Identification of potential diversion and recharge areas.
- Description of land uses in areas of impact and areas of recharge.

When

- Identification of flood diversion triggers (both on and off).
- Process for recording and reporting on the time, duration, and volume of water diverted and any observed abnormalities associated with the water course.

Contact Info

Michael Mierzwa, P.E., Flood Policy & Technical Advisor

Michael.mierzwa@water.ca.gov

CA Dept. Water Resources

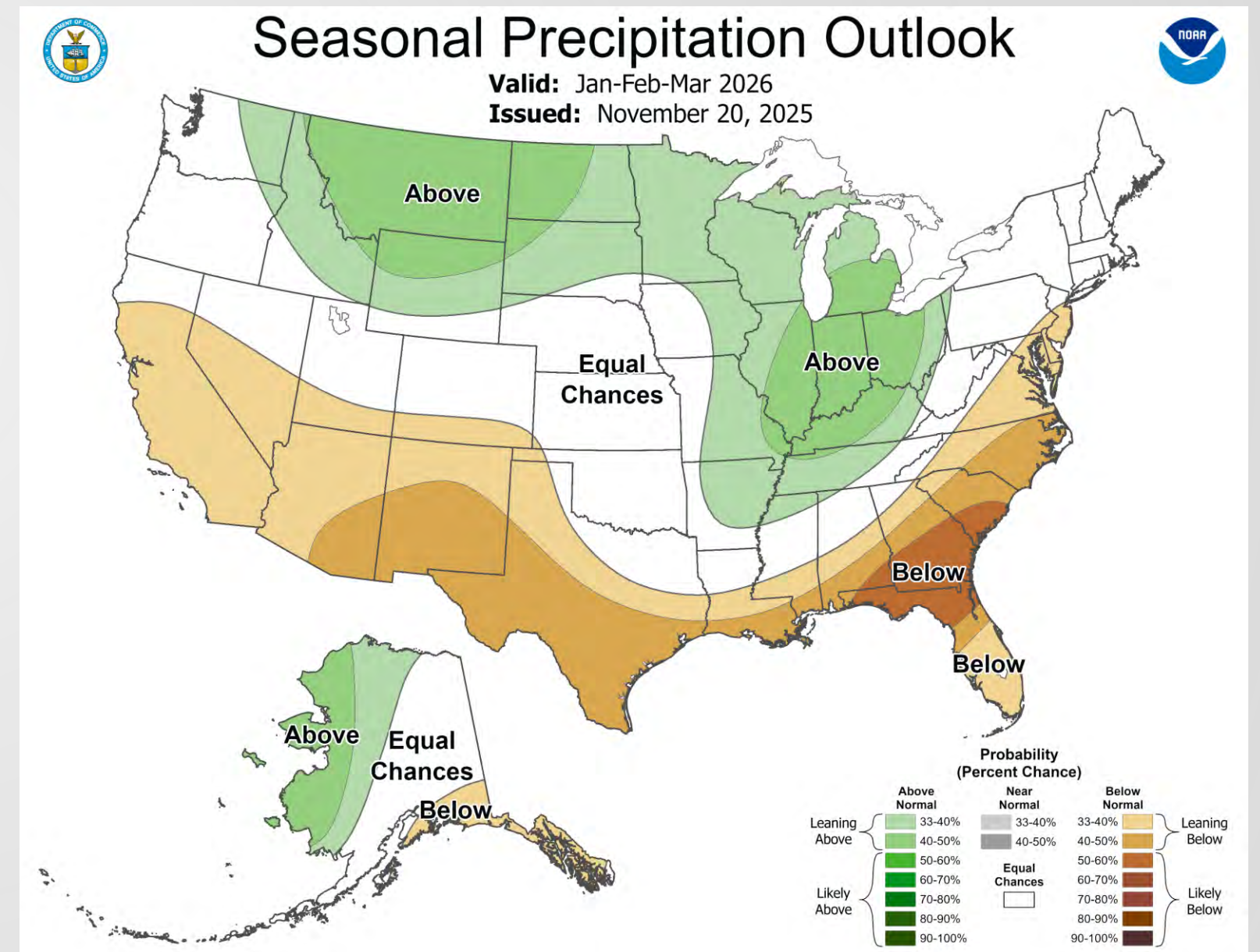


Image: NOAA Climate Prediction Center's 1.5 Month Seasonal Precipitation Outlook (Nov. 2025)





CALIFORNIA DEPARTMENT OF

Examples of Flood Threats

Flood Threat Type	Examples	Threshold Sources
Previous observed flooding	Flood insurance claim, recorded road closure, livestock evacuation	<ul style="list-style-type: none"> - NWS E-19 Agreements - FEMA Flood Insurance Study (FIS) - County Emergency Event After Action Reports - Local Hazard Mitigation Plan
Potential flood pathway	Corroding / failing pipe or culvert, flap gate missing or not functioning, levee erosion, recent channel migration	<ul style="list-style-type: none"> - Elevation of pathway and elevation of nearby stage or flow data - Photographs of area of concern w/ estimated elevation - Distance of channel migration from original centerline
Upstream / downstream waterway change to flow timing	Nearby diversion operation changed resulting in localized increase in water levels, downstream permitted development in floodplain	<ul style="list-style-type: none"> - FEMA LOMR-Fill documentation
Temporary construction or occupation	Boat ramp replacement / construction, bridge or road construction, levee repair / construction, temporary water intake	<ul style="list-style-type: none"> - Documentation of floodplain variance (with county or city) - CEQA documentation - Construction site maps w/ elevation



CWC 1242.1 Restrictions on Diversions

- An adopted local plan needs to be prepared and publically noticed. (1242.1(a)(1))
- Diversions can only be for floodflows to avoid threats to human health and safety. (1242.1(a)(2)(A))
- The floodflow must be likely of imminent escape from a channel or waterbody. (1242.1(a)(2)(B)(i))
- Diversions can not be to protect areas that are intended to be inundated, such as a wetlands, working lands, or floodplains, or water confined to a “designated floodway”. (1242.1(a)(2)(B)(ii))
- Diversions can only be made if the Delta is in excess conditions without restrictions. (1242.1(d))
<https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/State-Water-Project/Operations-And-Maintenance/Files/Operations-Control-Office/Delta-Status-And-Operations/Delta-Operations-Daily-Summary.pdf>



FEMA Public Assistance Categories

Emergency Work – Must be completed in 6 months

- Category A – Debris removal
- Category B – Emergency protective measures

Permanent Work – Must be completed in 18 months

- Category C – Roads and bridges
- Category D – Water control facilities
- Category E – Public buildings and equipment
- Category F – Public utilities
- Category G – Parks, recreational, and other facilities



ASCE Building Risk Categories

Risk Category	Nature of Building Occupancy
I	<p>Low hazard to human life in the event of failure, including but not limited to:</p> <ul style="list-style-type: none"> • Agricultural facilities. • Certain temporary facilities. • Minor storage facilities.
II	<p>Buildings and other structures except those listed in Risk Categories I, III, and IV.</p>
III	<p>Substantial hazard to human life in the event of failure, including but not limited to:</p> <ul style="list-style-type: none"> • Public assembly with an occupant load greater than 300. • Group E occupancies with an occupant load greater than 250. • Educational occupancies for students above the 12th grade with an occupant load greater than 500. • Group I-2 occupancies with an occupant load of 50 or more resident care recipients but not having surgery or emergency treatment facilities. • Group I-3 occupancies. • Occupant load greater than 5,000.^a • Power-generating stations, water treatment facilities for potable water, wastewater treatment facilities, and other public utility facilities are not included in Risk Category IV. • Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that:
IV	<p>Buildings and other structures designated as essential facilities, including but not limited to:</p> <ul style="list-style-type: none"> • Surgery or emergency treatment facilities. • Fire, rescue, ambulance, and police stations and emergency vehicle garages. • Designated earthquake, hurricane, or other emergency shelters. • Designated emergency preparedness, communications, operations centers, and other facilities required for emergency response. • Power-generating stations and other public utility facilities are required as emergency backup facilities for Risk Category IV structures. • Containing quantities of highly toxic • Aviation control towers, air traffic control centers, and emergency aircraft hangars. • Buildings and other structures have critical national defense functions. • Water storage facilities and pump structures are required to maintain water pressure for fire suppression.

