

# OROVILLE DAM CITIZENS ADVISORY COMMISSION

Hosted by the California Natural Resources Agency



# ROLL CALL

- Commissioner Bateman
- Supervisor Connelly
- Supervisor Conant
- Secretary Crowfoot
- Chief Deputy Director Curry
- Sergeant Evans
- Supervisor Flores
- Supervisor Fuhrer
- Assemblyman Gallagher
- Supervisor Kimmelshue
- Deputy Licon
- Director Nemeth
- Senator Nielsen
- Councilmember Pittman
- Mayor Reynolds
- Lieutenant Spear
- Lieutenant Stokes
- Superintendent Teague
- Supervisor Vasquez

**ITEM 1**  
**COMMISSION UPDATES**

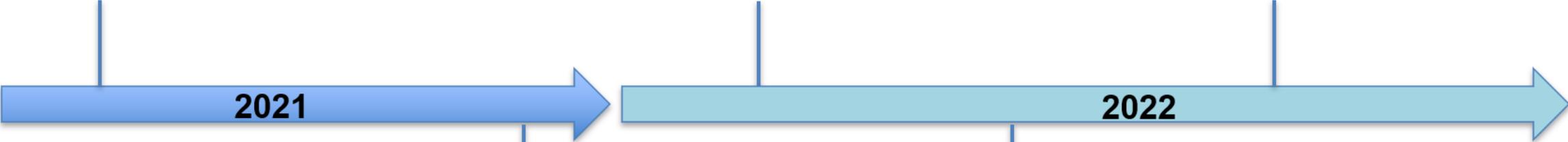
**ITEM 2**  
**COMMISSION REPORT UPDATE**

# Commission Report Development Timeline

Review timeline for Report development  
(August 2021) **COMPLETE**

Present Detailed Report Outline  
(Q1 2022) **COMPLETE**

Draft Report – Public Comment  
(Q4 2022)



Final Report

High-Level Report Outline  
(December 2021) **COMPLETE**

Draft – Commission Reviewers  
Input (July 2022) **COMPLETE**

# Commission Report Process

## Commission Reviewers

- Supervisor Bill Connelly
- Lt. Stephen Collins
- Senator Nielsen's Office (Rob Olmstead)

## Process

- Reviewed and approved outline
- Reviewed and approved detailed outline
- Reviewed and approved content and approach
- Reviewed and approved draft report
- Public comment process
- Commissioner public comment review

# Report and Content Mandated by SB 955

The commission must publish a report once every three years that provides the following:

1. An overview of ongoing maintenance and improvements made at the dam and its site.
2. A register of communications received from the department and other parties to the Commission.
3. Notice of upcoming plans made by the department for the dam and its site.
4. An overview of flood management projects on the Feather River affecting public safety and flood risk reduction.

# Commission Draft Report

- Click “Oroville Dam Citizens Advisory Commission Report” on the main page to be taken to the Report landing page.



## Oroville Dam Citizens Advisory Commission

### Materials and links to meetings below

In February 2017, due to damage to the main spillway at Oroville Dam and subsequent public safety declarations, approximately 188,000 area residents evacuated their homes to safer ground. Having repaired the damaged spillway and bolstered the adjacent emergency spillway, the state is assessing the future needs of the 50-year complex and the many appurtenances required for the functioning of the State Water Project. In 2018, the Oroville Dam Citizens Advisory Commission, created by Senate Bill 955 (Nielsen), was established to be a public forum for discussing issues related to the Oroville Dam facilities. The Commission will discuss maintenance, findings, reports, and upcoming actions, and to conduct other communications regarding operations, maintenance, and public safety activities at Oroville Dam and its facilities, and flood management elements on the Feather River. The Commission will serve as a representative to the public for the purposes sharing information, and act as a unified voice from the communities surrounding Oroville Dam to provide public feedback, advice, and best practices.

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[Oroville Dam Citizens Advisory Commission Charter](#)

[Oroville Dam Citizens Advisory Commission Members](#)

[Oroville Dam Citizens Advisory Commission Report](#)

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# Commission Draft Report

## Oroville Dam Citizens Advisory Commission Report

### Draft Report - Oroville Dam Citizens Advisory Commission Report

This is a draft report summarizing the work of the Oroville Dam Citizens Advisory Commission (OCAC) in its first three years. This report is mandated by Senate Bill 955, the 2018 legislation that formed the commission. **Members of the public can provide comments on this draft report—public comments are due by 5:00 p.m. on November 18, 2022.**

To submit public comments, please download and fill out this [public comment form](#). Please note, the Excel Comment Form includes two tabs; Tab 1 provides public comment instruction and Tab 2 is the public comment form where users enter their information and comments. The public comment form (Excel file) can be sent via email to [espiegel@kearnswest.com](mailto:espiegel@kearnswest.com). If you prefer to leave a voice message or have questions about how to complete the public comment form, please call 800-485-6179.

Commissioners and staff will review all public comments for consideration based on the parameters stipulated in Senate Bill 955.

Upon request, staff will work to provide language accommodations for those whose primary language is not English (such as providing information, answering questions, and receiving comments in other languages). To request your access needs, please contact [espiegel@kearnswest.com](mailto:espiegel@kearnswest.com) or call 800-485-6179.

The parameters of the Commission Report, as specified in Senate Bill 955, are detailed in the following language:

*“Publish a report at least once every three years that provides:*

- (A) An overview of ongoing maintenance and improvements made at the dam and its site.*
- (B) A register of communications received from the department and other parties to the commission.*
- (C) Notice of upcoming plans made by the department for the dam and its site.*
- (D) An overview of flood management projects on the Feather River affecting public safety and flood risk reduction.”*



## Oroville Dam Citizens Advisory Commission Report



### 6.6 Spillway Cameras: Meeting 8

Commissioners requested an update on the status of the temporary spillway cameras that had been installed after the 2017 incident and recently decommissioned.

#### Meeting 8, August 21, 2021

Mr. Yarbrough provided this presentation. After the spillway incident, DWR installed two temporary web cameras for the public because DWR had to restrict public access during reconstruction. The cameras allowed the public to see the facility. Four years after the incident, in early 2021, DWR began to decommission the cameras. However, DWR was notified by staff in Senator Nielsen's and Assembly Member Gallagher's offices that members of the public noticed when the cameras were removed. DWR then reinstalled the top temporary camera to maintain the public's ability to see the spillway. The bottom camera will not be reinstalled due to vandalism issues. DWR will keep the top temporary camera operational until a permanent solution is implemented.

### 6.7 Piezometers: Meeting 10

Piezometers are instruments that measure pore water pressure and are used to assess conditions within and under a dam. The measurement of pore pressures helps engineers understand and assess seepage through the dam or its foundation. Elevated pore pressures and excess seepage can have destabilizing effects on a dam and its appurtenant structures. The Commission has discussed DWR's plans to install additional piezometers at the Oroville facility throughout its meetings. Meeting 10 included a formal presentation.

#### Meeting 10, March 25, 2022

Mr. Sarkisian delivered an update on the status of the installation of additional piezometers at the Oroville Dam and recent work associated with the Palermo Tunnel, which moves water from the lake into the Palermo Canal.

The Comprehensive Needs Assessment recommended early implementation of



# Commission Report: Public Comment Form

## Oroville Dam Citizens Advisory Commission Report

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# Public Comment Form

- To provide public comment, please review the Instructions (Tab 1) and fill out the Comment Form (Tab 2).
- Save the Excel file and e-mail to Eva Spiegel ([espiegel@kearnswest.com](mailto:espiegel@kearnswest.com)).
- If you have questions or would like to leave a verbal comment, call 800-485-6179 or email Eva Spiegel ([espiegel@kearnswest.com](mailto:espiegel@kearnswest.com)).
- Public comment is due by 5 p.m. on November 18.
- All public comments will be made available for consideration by the Chair, Vice Chair, and Commissioners based on the report guidance under SB 955.

# Tab 1: Instructions

AutoSave On Report Public Comment Form\_Oroville Dam Citizens Advisory Commission\_2022 (1) • Last Modified: Wed at 11:29 AM Search (Alt+Q)

File Home Insert Page Layout Formulas Data Review View Help

Undo Paste Clipboard Font Alignment Number Styles

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	A	B
1	<b>Instructions for Public Comments on the Draft 2022 Oroville Dam Citizens Advisory Commission Report</b>	
2		
3	<b>Comments are due:</b>	<b>November 18, 2022; 5 pm</b>
4		
5	<b>Return Comment Form to:</b>	<a href="mailto:espiegel@kearnswest.com">espiegel@kearnswest.com</a>
6		
7	<i>Please provide comments in this Excel file's Comment Form (Excel Tab 2) consistent with the below guidance.</i>	
8		
9	<b>GUIDANCE</b>	
10	<b>Full Name</b>	Enter your full name.
11		
12	<b>Email</b>	Enter your email address.
13		
14	<b>Organization/Affiliation/Community</b>	Enter the name of your organization, affiliation or the community you live in.
15		
16	<b>Comment #</b>	These pre-entered numbers are intended to help identify comments during subsequent discussions.
17		
18	<b>Page, and Paragraph #s</b>	Enter the page and paragraph or figure number of the text or element being commented on. Page and paragraph numbers are not necessary for more general comments that apply to an entire section. Paragraph numbers are not necessary for comments regarding a figure or table.
19		
20	<b>We are requesting that each comment consist of 3 parts: importance, issue, and solution. Guidance for each of these three components of a comment is provided below.</b>	
21		
22	<b>Comment: Importance</b>	Enter the level of importance from the below list (minor, moderate or major).
23	Minor	Non-substantive comments, which include minor edits, clarifications, and corrections.
24	Moderate	Substantive changes that include refinements or modifications of specific content or its presentation, but that are not regarding the approach or scope of the section.

Tab 1 (Instructions) Tab 2 (Comment Form)

# Tab 2: Public Comment Form

The screenshot shows the Microsoft Excel interface with the following elements:

- File Name:** Report Public Comment Form\_Oroville Dam Citizens Advisory Commission\_2022 (1) • Last Modified: Wed at 11:29 AM
- Search:** Search (Alt+Q)
- Home Tab:** Includes options for Undo, Paste, Font (Cambria, 11), Bold (B), Italic (I), Underline (U), Color, Background Color, Alignment (Left, Center, Right, Merge & Center), Number (General, Currency, Percentage, Decimals), Styles (Conditional Formatting, Format as Table, Cell Styles), and Cells (Insert, Delete, Format).
- Form Structure:**
  - Row 1: FULL NAME: [Enter here]
  - Row 2: EMAIL: [Enter here]
  - Row 3: ORGANIZATION AFFILIATION OR COMMUNITY: [Enter here]
  - Row 4: **Comment #** | **Page #** | **Paragraph or Figure #** | **Comment: Importance** | **Comment: Issue**
  - Row 5: 1 | [Enter here] | [Enter here] | [Enter here] | [Enter here]
  - Rows 6-29: 2-25 (empty rows for data entry)
- Bottom Tab Bar:** Shows 'Tab 1 (Instructions)' and 'Tab 2 (Comment Form)' (circled in red with an arrow pointing to it).

# ITEM 3

# INUNDATION MAPPING

# SUTTER BUTTE FLOOD CONTROL AGENCY



## Oroville Dam Citizens Advisory Commission Presentation

October 21, 2022

Michael Bessette, Executive Director

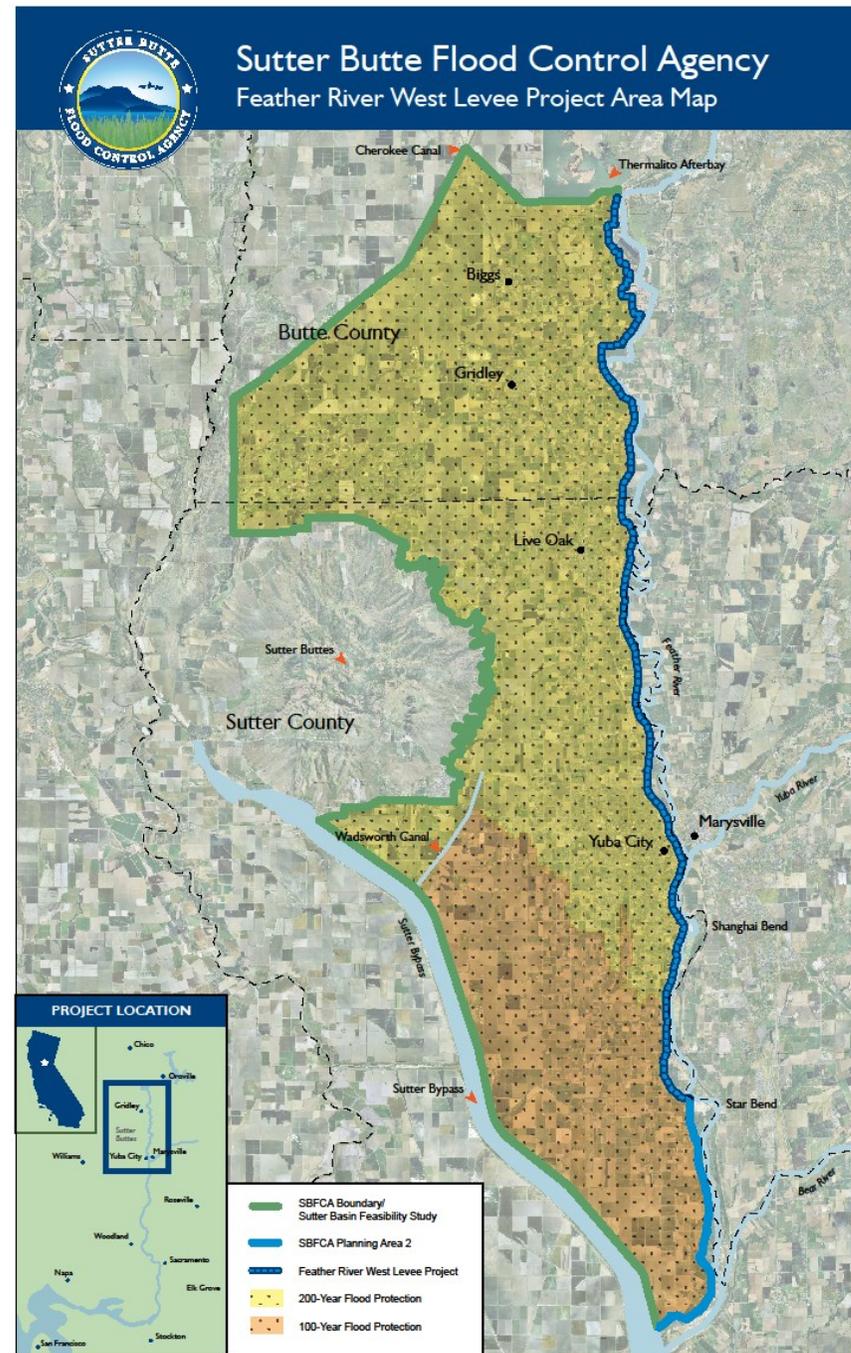
# AGENDA

- SBFCA Agency Overview
- Floodplain Inundation Mapping
- Emergency Evacuation Concerns
- Oroville Wildlife Area Project
- City of Oroville Levee Integrity Concern
- Questions/Comments



# SBFCA Agency Overview

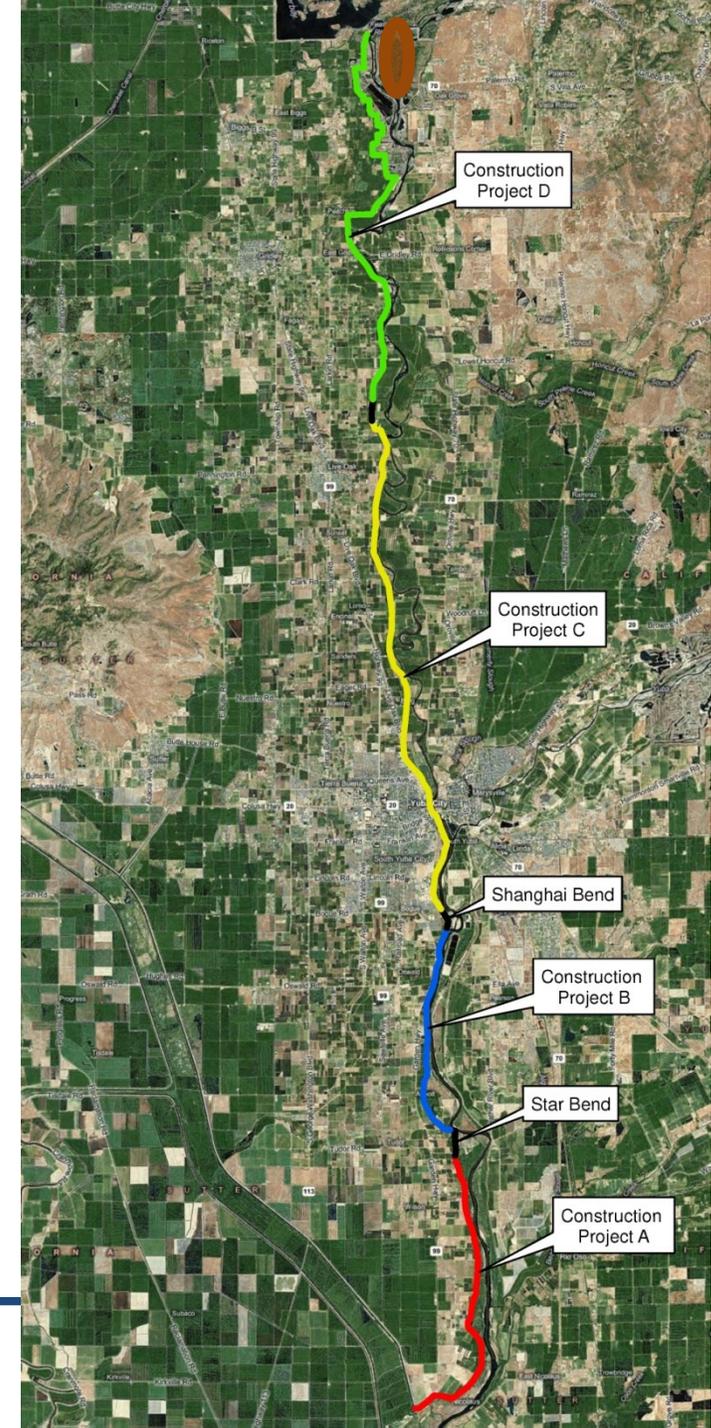
- Basin (300 sq. miles)
- Members (2 Counties, 4 Cities, 2 Levee Districts)
- Joint Powers Authority (2007)
- 2010 Assessment District
- Public Safety, FEMA, SB5
- Goals
  - 200-year protection north
  - 100-year protection south



# FRWLP WORK AREAS

Area	Description	Date
A	8.9 miles	Mostly Complete
B	6 miles	2014/15
C	14.75 miles	2013/14
D	13.1 miles	2014–2019
OWA FSRP	N/A	Ph 1 – 2018/19 Ph 2 – 2022–25

**OWA FSRP: Oroville Wildlife Area Flood Stage Reduction and Multi-Benefits Project**



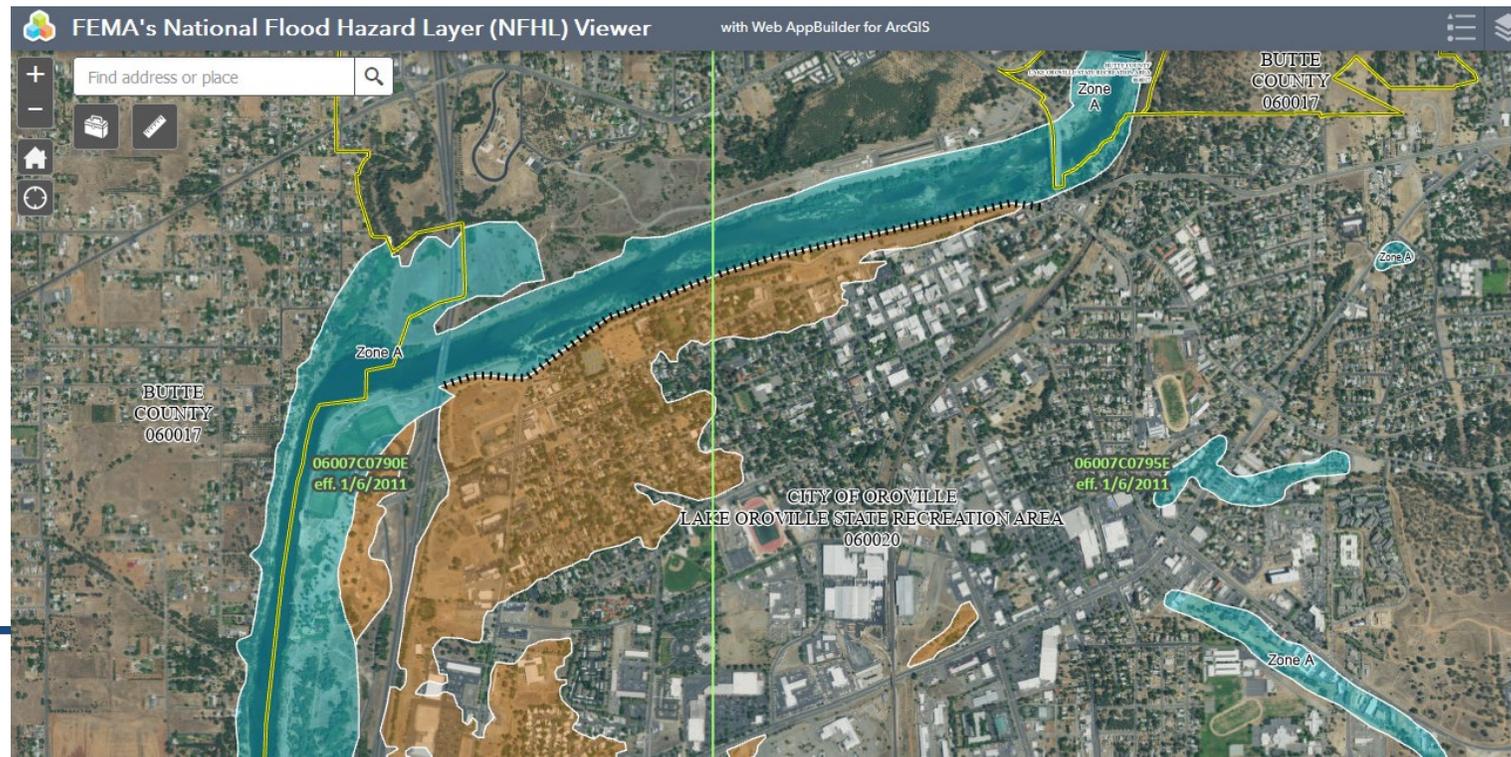
# FLOODPLAIN INUNDATION MAPPING

- Various different map products can be confusing to general public
  - SB92 Dam Inundation Maps
  - FEMA Floodplain Maps
  - SB5 DWR 200-year Floodplain Maps
  - DWR Best Available Maps
- Public messaging on assumptions is important so risk is accurately portrayed (i.e. levees overtop without failure, rainfall runoff/local drainage considerations, downstream inflow assumptions, etc.)



# CITY OF OROVILLE LEVEE INTEGRITY CONCERNS

- Existing levee just downstream from Oroville Dam has history of seepage and boils
- Levee not part of the State Plan of Flood Control or USACE



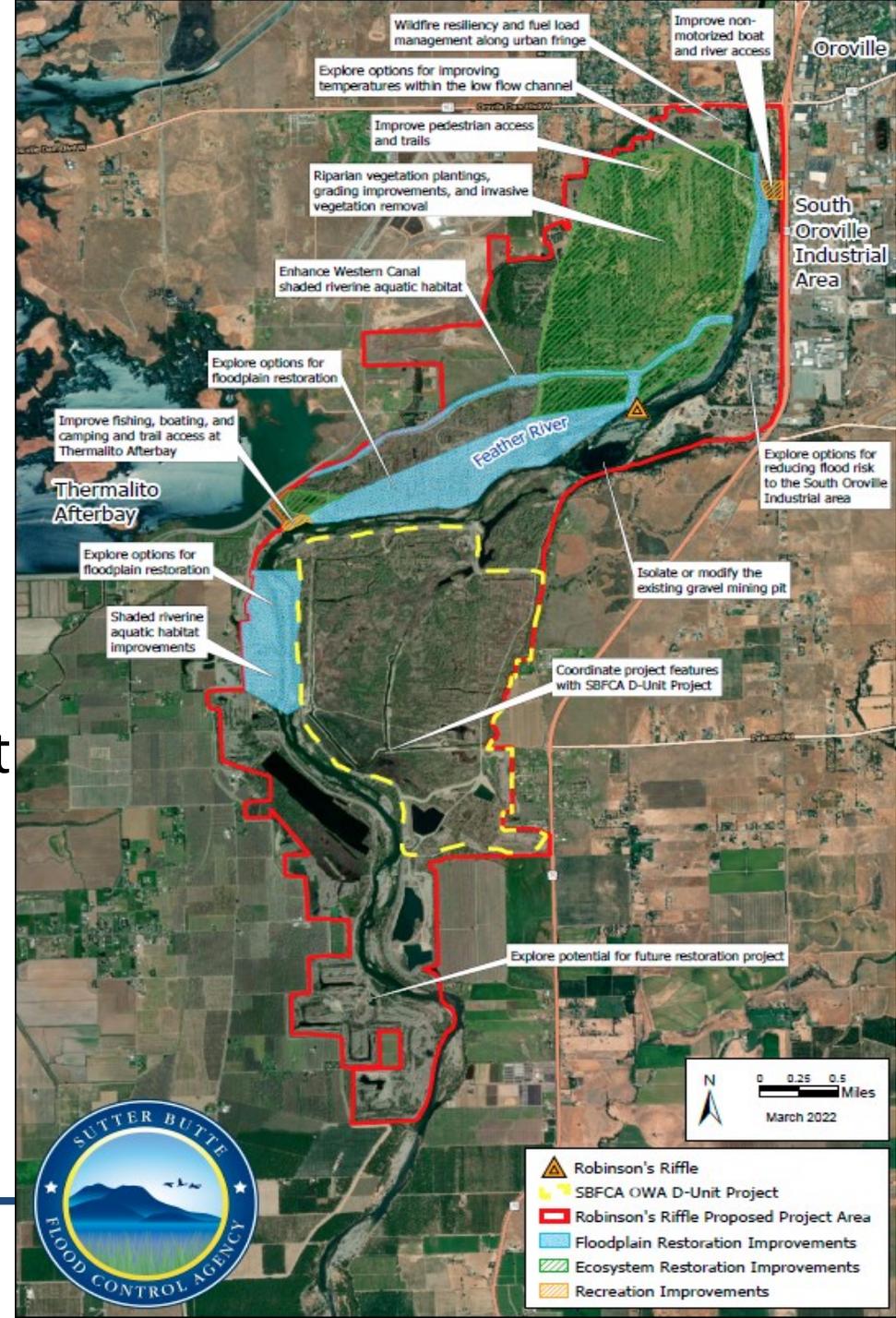
# EMERGENCY EVACUATION CONCERNS

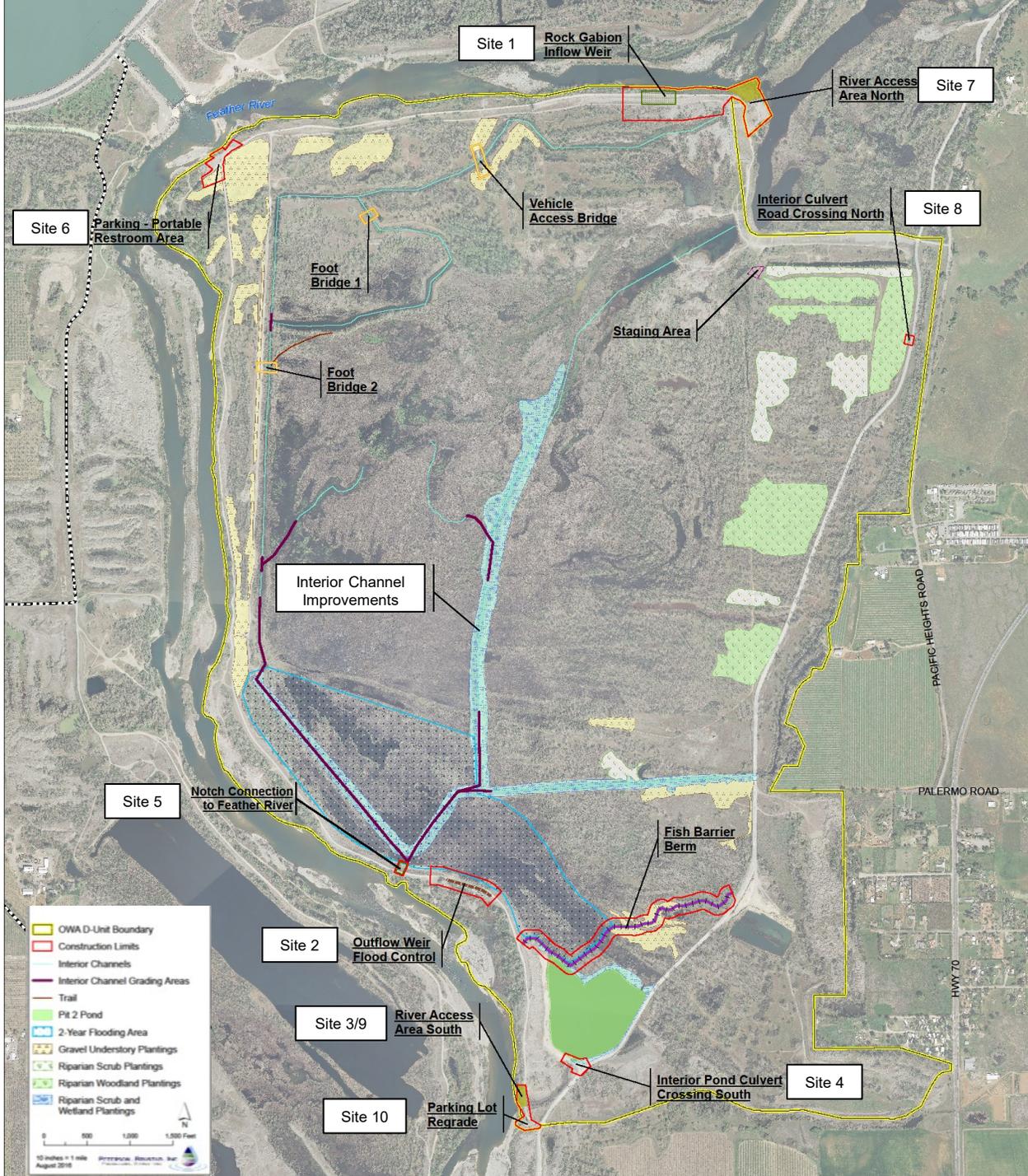
- 2017 Emergency Evacuation – Lessons learned
- Communicating floodwave time of arrival is important to properly sequence evacuation zones
- Who is responsible for relaying information to emergency responders and general public?
- Communicating impacts of high water is important (e.g. closure of East Gridley Road Bridge)



# OWA FLOOD STAGE REDUCTION & ECOSYSTEM ENHANCEMENTS

- Reestablish historic floodplains and lower flood stage in Feather River
- Builds upon SBFCA's D-Unit project completed in 2020





# Questions & Answers



**ITEM 4**  
**ATMOSPHERIC RIVER RESEARCH**  
**(ARKSTORM 2.0)**

# ARkStorm 2.0 Briefing

**Jeremy Hill**

**Hydrology and Flood Operations Branch**

October 21, 2022

# Overview

## ➤ ARkStorm 2.0

- Why
- What
- Who
- Current Status

## ➤ Relationship to DWR Programs

## ➤ Next Steps



# ARkStorm 2.0

## ➤ Why

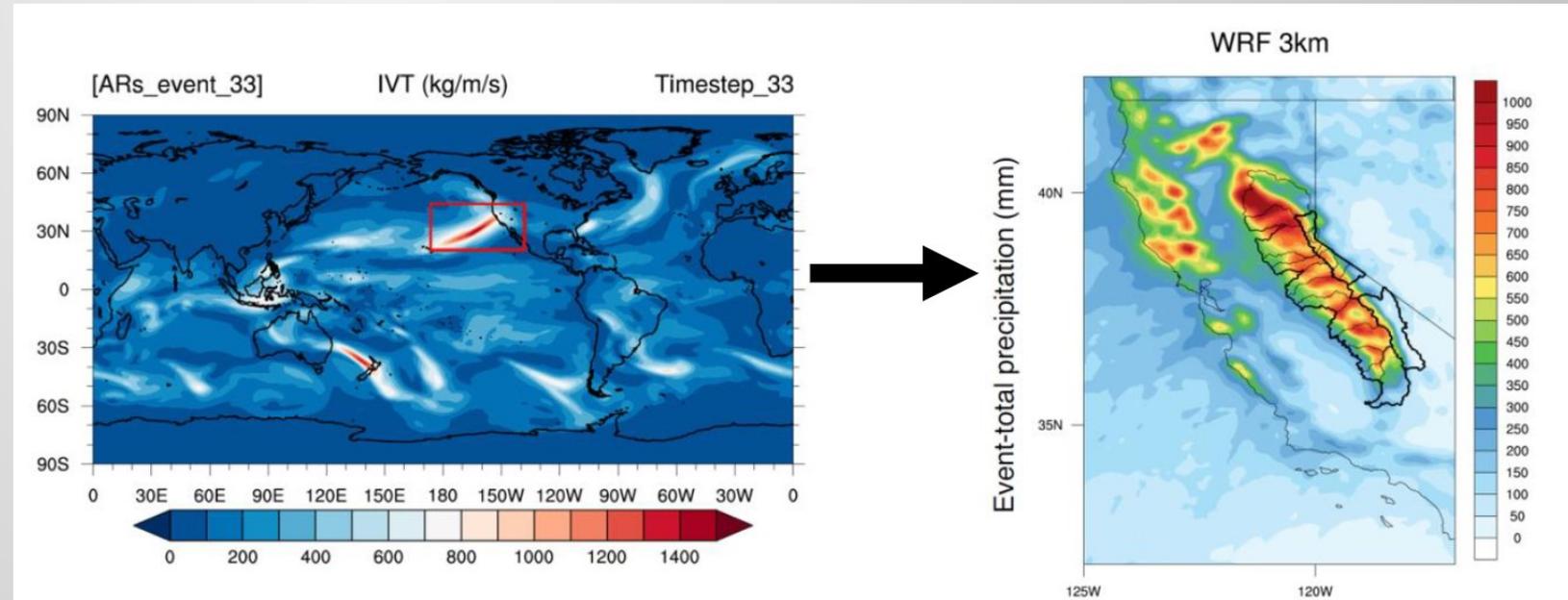
- ❑ Climate Change is increasing the likelihood of extreme precipitation events
- ❑ An opportunity to explore potential consequences to a catastrophically large series of storms designed to overwhelm flood infrastructure including dams and levees
- ❑ To improve flood preparedness and planning
  - How do we recognize a storm that will overwhelm the flood infrastructure system?
  - How would the storm impact infrastructure and livelihoods?
  - How do we respond?
  - How do we empower local communities to resilient and better prepared for such an event?



# ARkStorm 2.0

## ➤ What

- ❑ An extreme but plausible storm scenario that overwhelms the flood system
- ❑ Scenario consists of a statewide, month-long sequence of extreme storms
- ❑ Reimagined under historical and future conditions with climate change



# ARkStorm 2.0

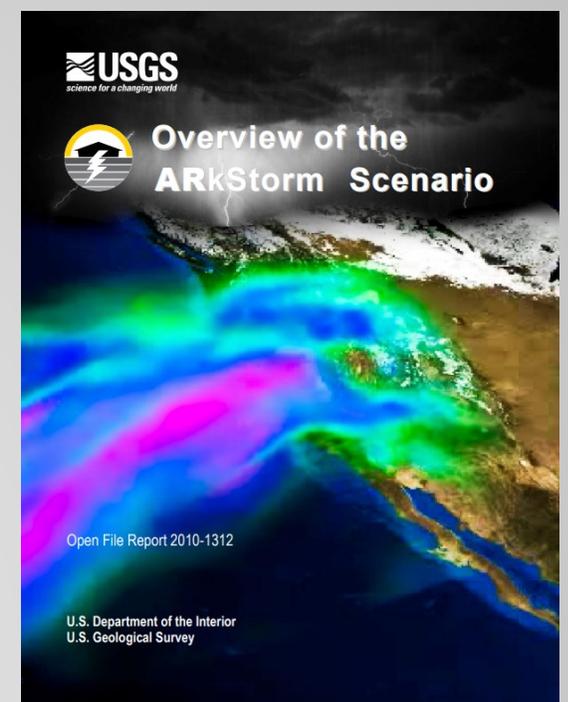
## ➤ Who

### ❑ 2011 - USGS Multi Hazards Demonstration Project

- To engage emergency planners, businesses, universities, government agencies, and others in preparing for major natural disasters

### ❑ 2022 – Collaboration with Researchers, State agencies, and Federal partners

- University of California, Los Angeles
- Oak Ridge National Lab
- DWR part of funding group
- To develop the historical and future extreme storm scenarios



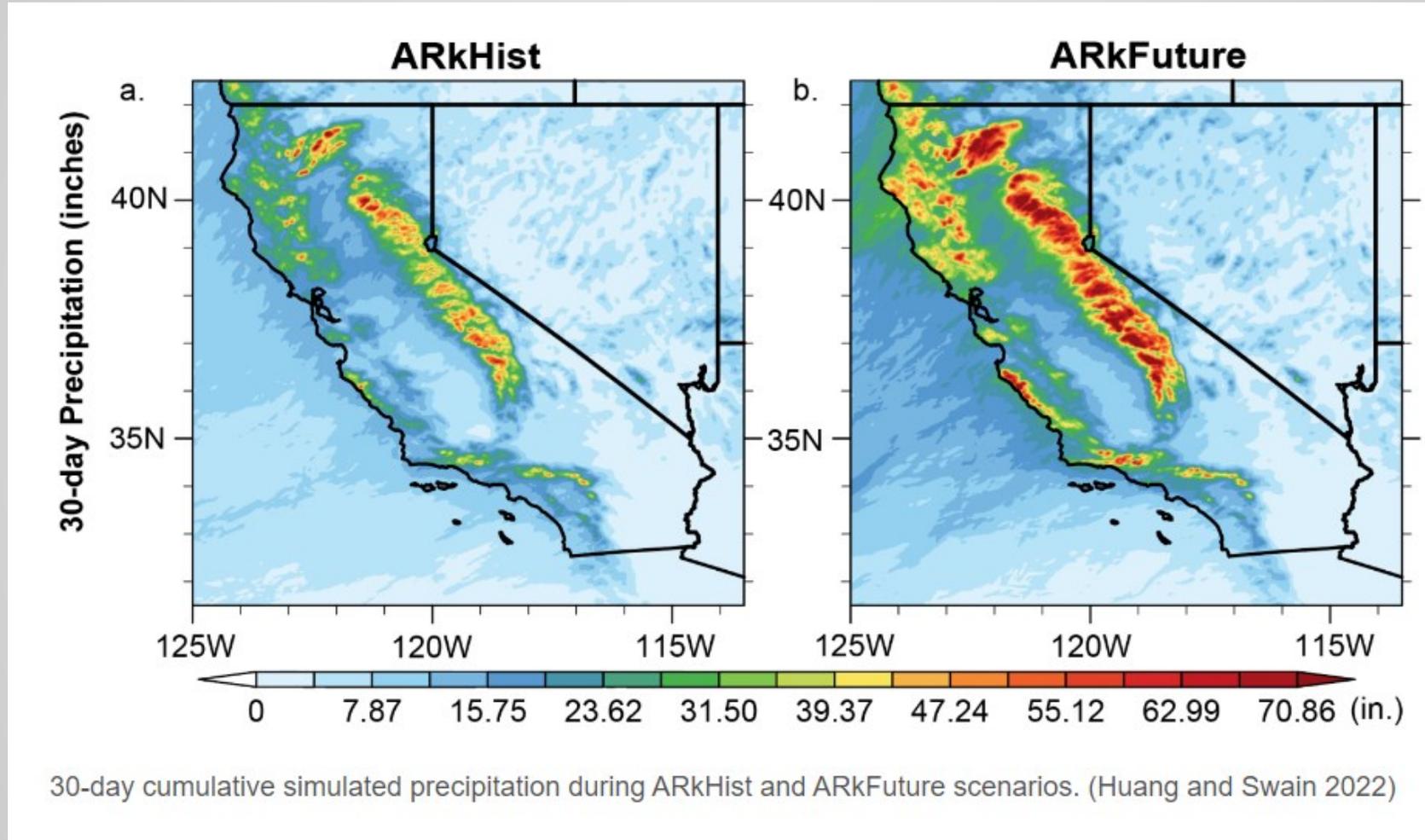
# ARkStorm 2.0

## ➤ Current Status

- Precipitation for entire state of California
  - Historical and Future extreme storm scenarios
- Scenario data being explored with DWR models in Central Valley



# 30-Day Rainfall Maps from ARkStorm 2.0



# ARkStorm 2.0

## ➤ Next Steps

- Contracting with Oak Ridge National Laboratory for collaborative work with statewide inundation model capability in progress
- Flood preparedness and response exercises being considered



# Timeline of ARkStorm 2.0 Activities

DWR Funds

Scenario Generation

Flood Emergency Response Exercises

Scenarios Published

5-year ORNL Collaboration on TRITON  
ARkStorm 2.0 Inundation Simulations

2020

2022

2023

2024

2025

Time

2022 Update CVFPP

2027 Update CVFPP  
Technical Studies



# Relationship with DWR Programs

- Central Valley Flood Protection Plan (CVFPP) to prioritize flood infrastructure improvements associated with the State Plan of Flood Control (SPFC)
- Studies to improve understanding of reservoir operations with climate change
- Flood emergency response exercises to enhance coordination of state and local agency actions
- U.S. Army Corps of Engineers (USACE) through Silver Jackets or Planning Assistance to States (PAS) & DWR to engage communities statewide



# Flood Preparedness and Planning

- Tabletop exercises can use the inundation maps prepared by ORNL to test response and recovery for ARkStorm 2.0 scenarios
- ARkStorm 2.0 maps will also help inform areas of the State in need of more frequent updates to FEMA Flood Insurance Rate Maps
- Areas of projected extreme rainfall events can be used to prioritize additional real-time telemetry and gauging in order to better recognize the onset of an event like those used in the exercises



# Final Thoughts

- DWR is developing resilience to climate change in its flood management activities
- ARkStorm 2.0 is a collaborative opportunity that can help
- Successful implementation of these activities yields greater capabilities for DWR in its statewide flood management responsibilities



# Questions

[Jeremy.Hill@water.ca.gov](mailto:Jeremy.Hill@water.ca.gov)



**ITEM 5**  
**WINTER OPERATIONS UPDATE**

# Lake Oroville

# 2023 Winter Operations

Oroville Citizen's Advisory Commission Meeting  
October 21, 2022

John Leahigh, State Water Project Water Manager

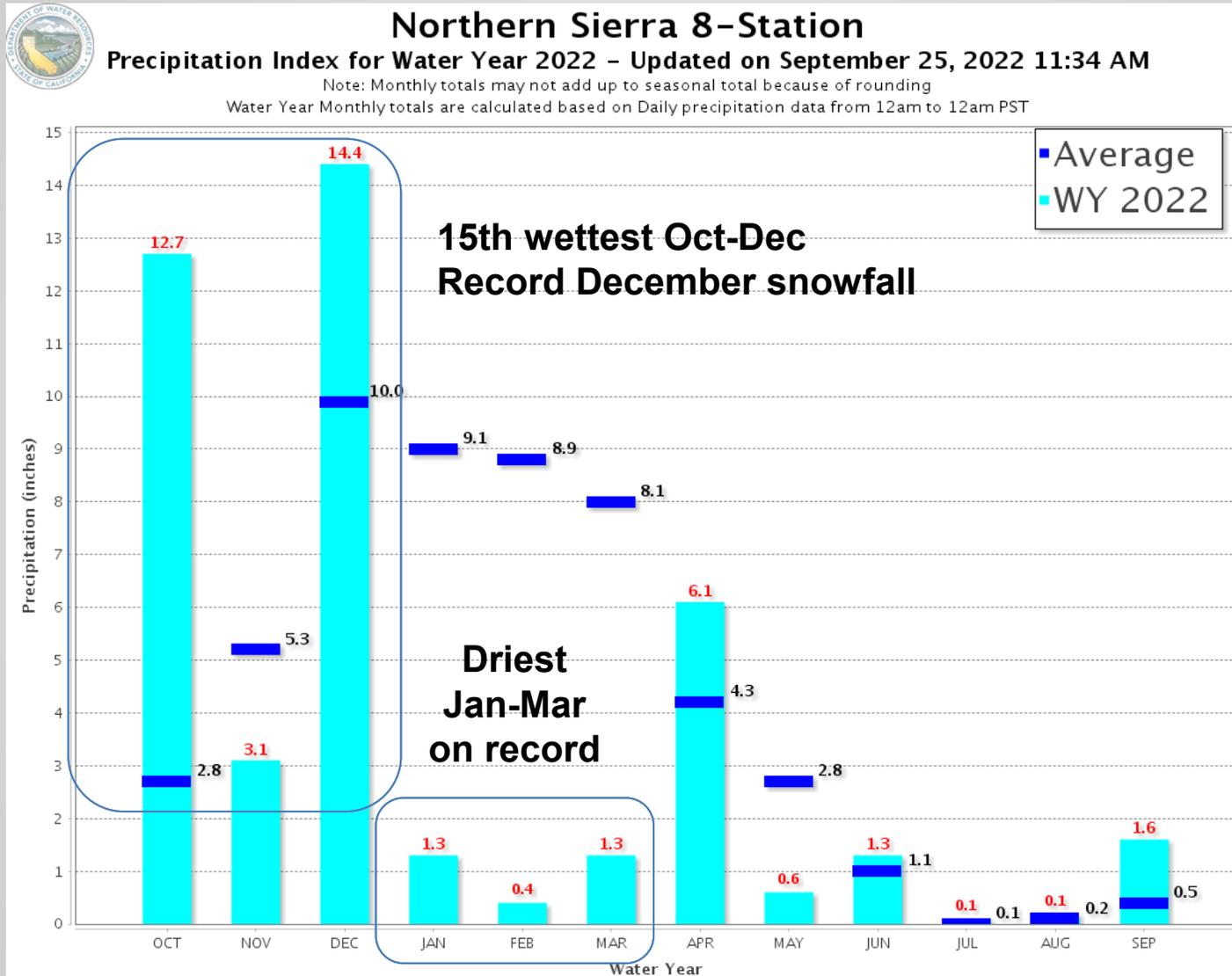


# Water Year 2022 Recap and 2023 Planning

- Fall and winter WY 2022 included extreme wet and extreme dry months
- Oroville storage is slightly better than last year, but still well below average
- Plan for a fourth consecutive dry year and continue preparing for extreme weather events

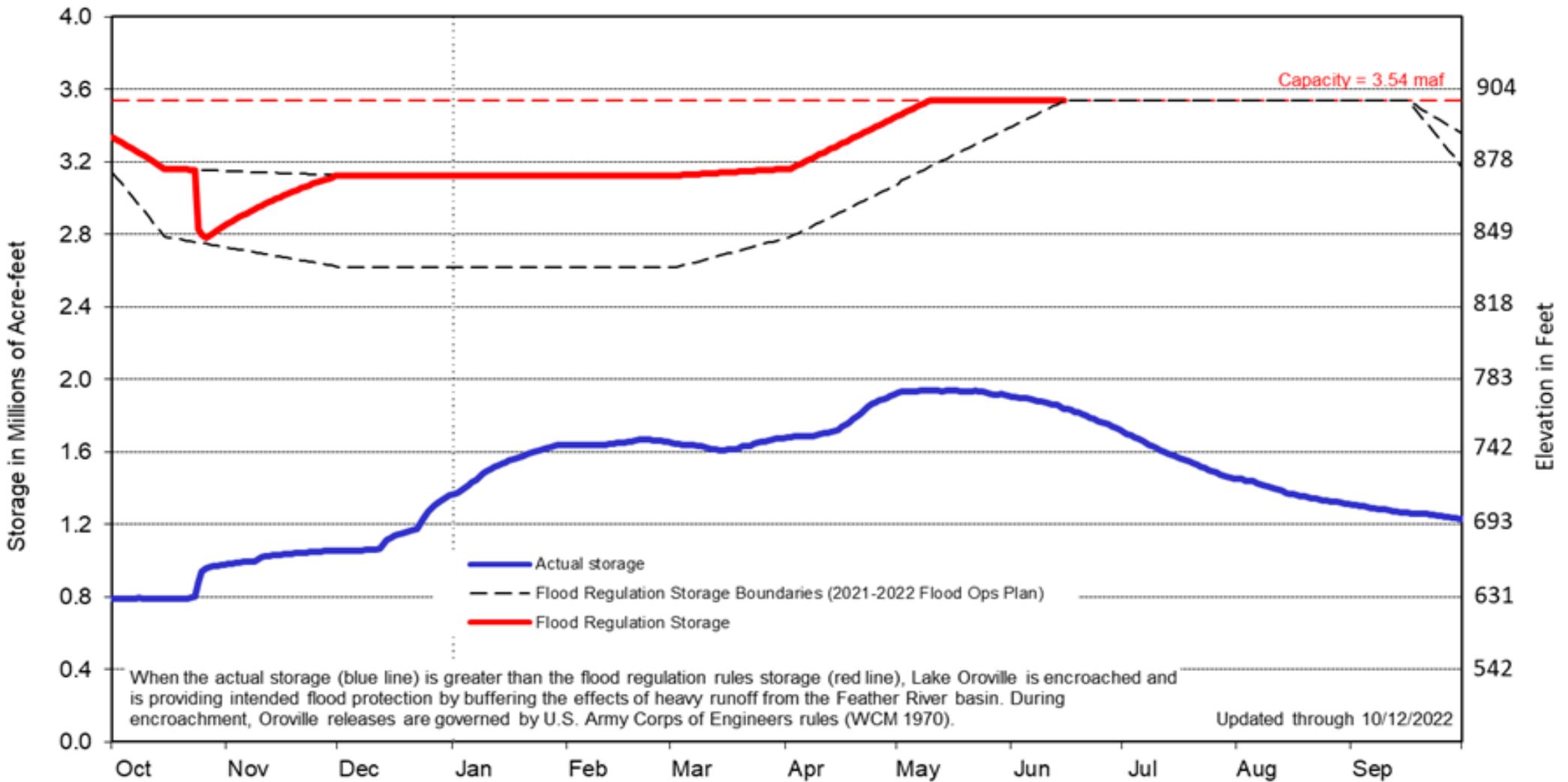


# WY 2022 Year of Hydrologic Extremes



# Lake Oroville Storage

October 1, 2021 to September 30, 2022

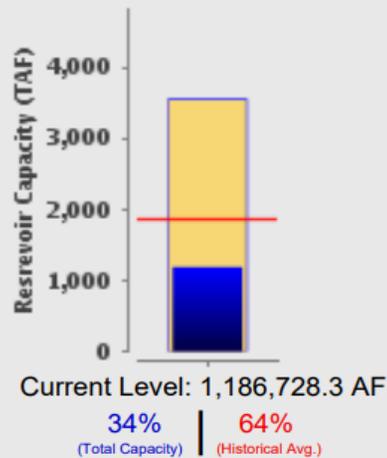


# Lake Oroville Storage

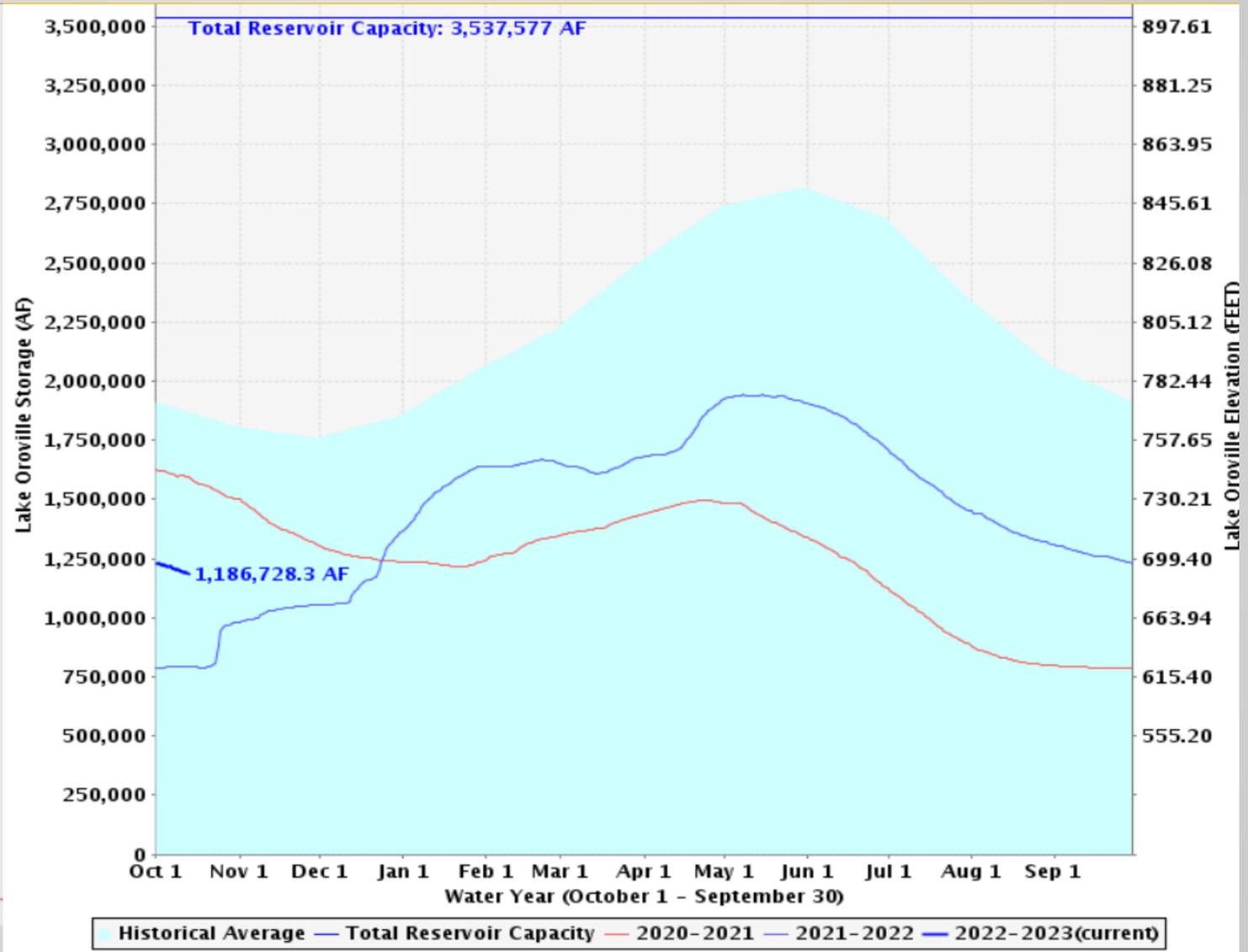


## Lake Oroville Conditions

(as of Midnight - October 13, 2022)



Data Updated 10/14/2022 04:48 PM



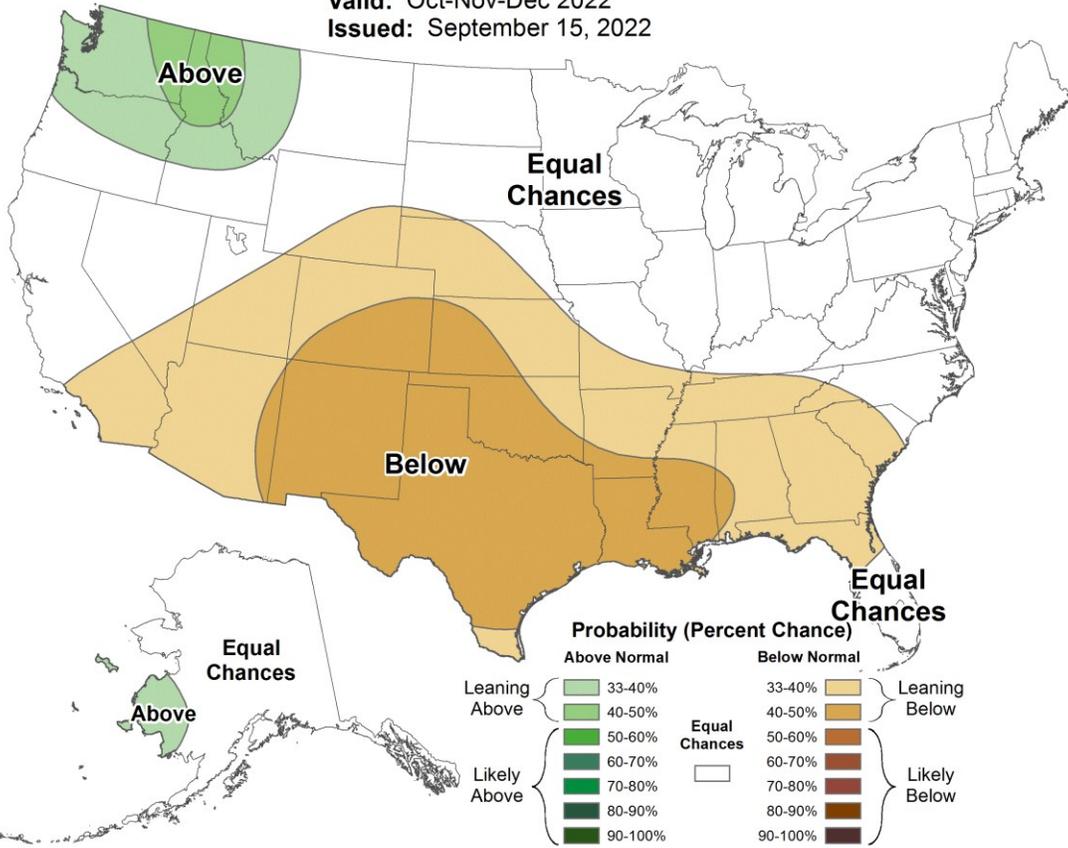
# Winter Temperature and Precipitation Seasonal Outlook



## Seasonal Precipitation Outlook



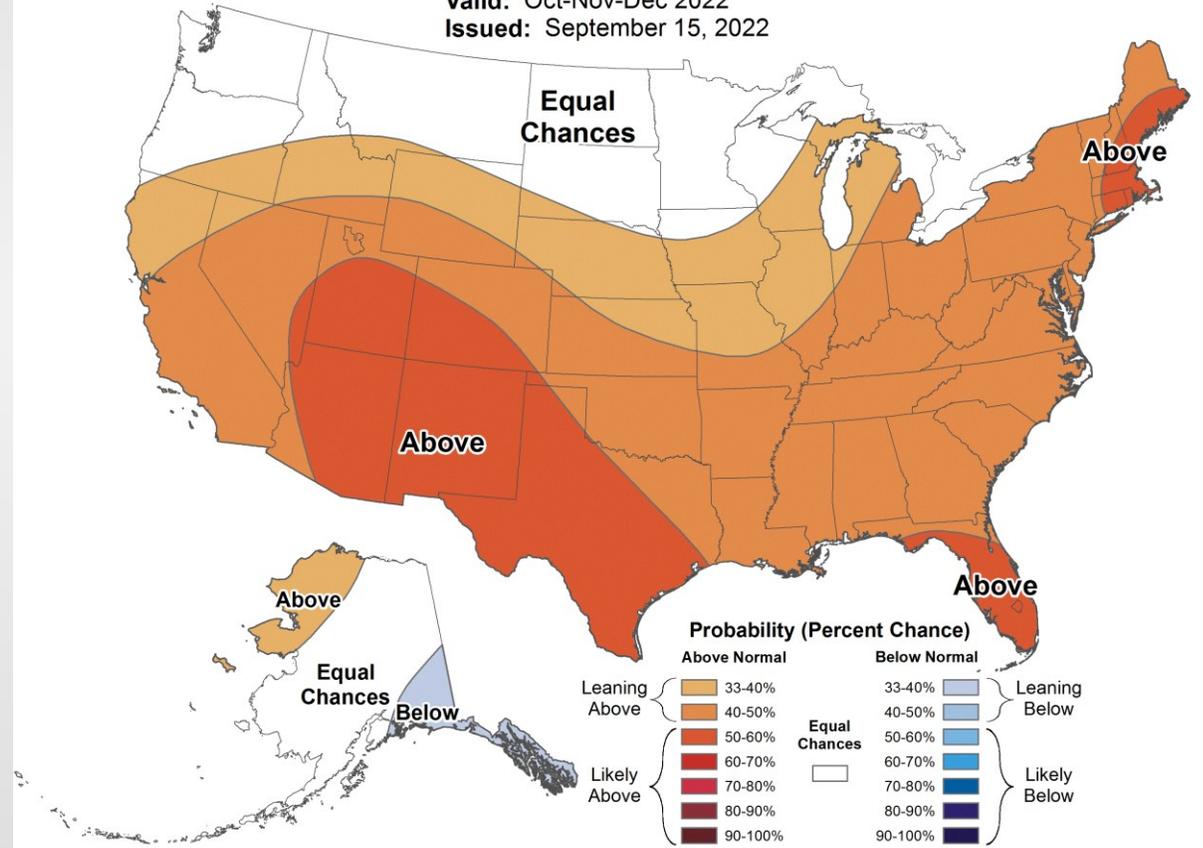
Valid: Oct-Nov-Dec 2022  
Issued: September 15, 2022



## Seasonal Temperature Outlook



Valid: Oct-Nov-Dec 2022  
Issued: September 15, 2022



# Questions?



# **ITEM 6 PUBLIC COMMENT**

**The Oroville Dam Citizens Advisory  
Commission will now take public comment.**

**We appreciate your input.**

# **ITEM 7 ADJOURN**

**Thank you all for joining us today, our next Oroville Dam Citizens Advisory Commission meeting will be on February 24, 2023.**