

**Meeting Summary**  
**OCAC Follow Up**  
**June 5, 2024**  
**10 a.m. to Noon**  
**Virtual**

**Participants**

- Butte County Supervisor Bill Connelly
- Commissioner Robert Bateman
- Tasha Weaver on behalf of Senator Brian Dahle
- Matt Mentink, community member
- Eric Johanson, community member
- Dick Thompson, community member
- David Gordon, DWR
- Mike Mierzwa, DWR
- Jeremy Arrich, DWR
- Jeremy Hill, DWR
- Laurence Santi, DWR
- Annie Wagner, DWR
- Chris Fritz, SBFCA
- Terra Alpaugh, Kearns & West
- Eva Spiegel, Kearns & West

**Meeting Purpose**

To address questions and concerns raised following the March 2024 OCAC meeting and discuss flood management options for minimizing downstream risk during flood events like those in 1986 and 1997.

**Action Items**

- Mr. Mentink requested Forecast Informed Reservoir Operations (FIRO) Preliminary Viability Assessment (PVA) appendices I, J and L, which are not available in the publicly accessible document.
  - DWR will investigate the availability of FIRO PVA Appendices. It was noted that the FIRO Final Viability Assessment is expected to be completed and released by the end of 2024.
- Mr. Mentink requested forecast margin of errors since the 2017 spillway incident to know the margin of error to be able to calculate how FIRO operates going forward.
  - DWR will investigate this request.

**Summary**

## **Introduction**

David Gordon facilitated the meeting, beginning with a review of the meeting purpose and agenda. The meeting's focus was to give participants an overview of DWR's Division of Flood Management and discuss flood management questions.

## **Overview of the DWR's Division of Flood Management (DFM)**

DFM does work before, during and after flood events. This includes flood readiness for the state, mitigation, and recovery.

The Joint State Federal Flood Operations Center (FOC) is integral to readiness. This is where DWR coordinates its response during flood emergencies, along with representatives of other key State and the Federal Agencies. It is a two-way communications center with information coming into the FOC from reclamation districts and local agencies and weather and other information going back out to these agencies. The FOC includes flood information specialists who staff phone lines, hosts weather and hydrology briefings, and offers technical and direct assistance.

Mitigation involves construction, such as the work DWR has been doing with the Sutter Butte Flood Control Agency to strengthen levees.

DFM is also involved in recovery, such as conducting assessments and getting funding and distributing it to local agencies for repairs.

## **City of Oroville Levee**

There is a section of a levee which protects the City of Oroville which is not under the State Plan of Flood Control Levees. The State of California has ~5,000 miles of levees under its jurisdiction. Oroville was excluded in 1955 and 1957 when the U.S. Corps of Army Engineers (USACE) improved local levees, which involved the State becoming a local sponsor in some areas. It would take a complex approval process at both the State and Federal levels to move "orphan" levees into the State Plan of Flood Control through the Central Valley Flood Protection Plan. It is important to note that the process is not streamlined nor is it one size fits all.

DWR noted that on May 10, 2024, Wade Crowfoot, California Secretary for Natural Resources Agency and Karla Nemeth, Director of DWR, sent the letter of support to USACE requesting their consideration for assistance of the "orphan" levee that leaves downtown Oroville vulnerable to flooding.

## **Flood Management Activities that Help Inform Operational Decisions of Downstream Conditions**

DWR and National Weather Service-California Nevada River Forecast Center (NWS-CNRFC) issues joint forecasts daily for over 300 locations in California. This information is disseminated out of the Flood Operations Center. Modeling tools and forecast accuracy have improved significantly since 1986 and 1997. DWR and NWS-CNRFC uses both modeling and experienced forecasters who can evaluate models with knowledge of past events. Dr. Marty Ralph's presentation to the Commission in 2023 highlighted advancements in forecasting. Today it is possible to forecast events several days ahead of time, which was not possible in 1997.

The Forecast-Coordinated Operations Program, or F-CO began after the 1997 event as an identified need. F-CO developed relationships and procedures to coordinate reservoir operations during high water events. The goal is to reduce downstream stages. They do an annual exercise with participating agencies and use scenarios (such as the 1997 event) as a training exercise. F-CO meets quarterly even during droughts. Key partners include the Yuba Water Agency, State Water Project, the National Weather Service, the California-Nevada River Forecast Center and the USACE.

The USACE is involved in DWR's coordinated releases and when the Flood Pool is encroached. The Water Control Manual (WCM) and USACE dictates DWR releases once encroached. In 1997, DWR did make flood releases at Oroville prior to being encroached. Forecast Informed Reservoir Operations (FIRO) studies will help inform the WCM update. Public safety is always the top priority when DWR evaluates situations.

Operation and Maintenance (O&M) Manuals for levee segments codify when levee patrols are needed. These patrols monitor levees when rivers reach a certain level. The patrols look for issues, contact local authorities about issues, and contact the FOC for needed assistance (including technical assistance from flood flight specialists). The FOC will disseminate downstream issues to the F-CO partners to ensure they are aware and potentially adjust operations if needed.

### **Review of Questions Shared by Downstream Community Members**

Mr. Mentink explained that they raised reverse engineering because they think the process could show the points of human intervention that may have contributed to prior flood events in 1986 and 1997.

Since these events, DWR has made significant improvements in data collection, forecasting, and coordinated operations, through the development and implementation of the F-CO program. These improvements allow DWR to better understand downstream concerns and operate in a manner that prioritizes public safety.

Mr. Mentink asked about the tests done to satisfy FIRO operations and saturation. He said a one in a 175-year flood would have sustained maximum flows for 132 hours. He noted

that the FIRO workplan said that there should be testing on levee erosion for release rates and that alternatives should consider dam surcharge.

- DWR explained that the USACE is in the process of modernizing a 1913 memo to address this.

Mr. Mentink asked if DWR puts flood safety first, why would the agency take a manual (WCM) that does not consider the strength of downstream levees. He asked if levees needed to be reconstructed to meet FIRO.

- DWR said that the USACE is including downstream channel capacities and levee integrity information through the Update to the WCM. DWR will have a chance to provide comments to the USACE WCM Update during the National Environmental Protection Act (NEPA) process. The WCM operates the dam in consideration of downstream communities. Interested parties should contact the USACE with these types of questions during the NEPA process.

Mr. Mentink asked for the FIRO PVA Appendix.

- DWR will talk with the FIRO team to find out if it is available.

Mr. Mentink said that the basin wetness index in 1986 and 1997 did not include snowmelt.

- DWR said that the wetness index does not include snowmelt, however the California-Nevada River Forecasting Center's reservoir inflow forecasts account for snowmelt.

Mr. Mentink asked how inflow forecasts were done in 2017.

- DWR said that the California-Nevada River Forecasting Center website contains the reservoir inflow forecasts, including both deterministic and probabilistic (ensembles) forecasts.

Mr. Mentink asked if the margin of error rate should be built into all early release forecasting.

- DWR said that the USACE does hindcasting in its analysis. The goal is to improve forecasting and watershed modeling, however there will always be some level of uncertainty.

Mr. Mentink asked how you can justify margins of errors and hindsight and if it is about combating political pressures from the State Water Contractors.

- DWR said that DWR maintains the sole discretion to operate with public safety as the top priority without political pressures.

Mr. Mentink asked about snowmelt and the wetness index.

- DWR said that they now lead the Aerial Remote Sensing of Snow Program, which was not in place in 2017. This includes the use of Airborne Snow Observatories data to do more accurate data collection and runoff modeling of the watershed's

snowpack. The snowpack influences runoff and is incorporated in the reservoir inflow forecasts. The wetness index influences the Flood Control Pool curve.

Mr. Bateman asked about meeting with USACE and how they (members of downstream communities) should coordinate with DWR in this process.

- DWR said that DWR will participate as an interested party in the USACE's WCM update meetings. Downstream community members should engage directly with the USACE.
- DWR will most likely comment on the alternatives to the WCM.

## **Conclusion**

Mr. Gordon stressed that many of the questions and the discussion today are connected to previous and potential future presentations to the Oroville Dam Citizens Advisory Commission. He said that he appreciates that this group representing interested parties, raised important questions that DWR will clarify and communicate to the public. DWR is waiting for information from the USACE to comment on the WCM Update.

Mr. Mentink expressed appreciation for the subject matter experts who participated in the meeting. He said that he has seen a culture shift at DWR over the years.

Supervisor Connelly thanked DWR for the meeting and noted that in his 19 years in office, he has seen a culture change.