OROVILLE DAM CITIZENS ADVISORY COMMISSION

Hosted by the California Natural Resource Agency
ITEM 1: WELCOME AND ROLL CALL
ITEM 2: ADOPT COMMISSION CHARTER
ITEM 3: WINTER OPERATIONS AND SAFETY DISCUSSION
Overview of Feather River Flood Management

Oroville Dam Citizens Advisory Commission Meeting

November 20, 2019

Gary Lippner, Deputy Director
Today’s Presentation

• Yuba-Feather Flood Management System
  – History, Roles & Responsibilities
• Recent Flood Risk Reduction Projects & Maintenance
• Flood Preparedness
• Looking to the Future
Local Maintaining Agencies and State Maintenance Areas

State Water Project

Flood Management Responsibilities
Evolution of Flood Risk Management

• Pre-Statehood: Recurring “Inland Sea”
• 1849-1910: Levee & Bypass Plan Developed
• 1910 to 1940s: Levee & Bypass System
• 1940s to 1960s: Multi-Purpose Reservoirs
• 1960s to Present: Changing Societal Values; System Deficiencies; Enhanced Forecasting
• Residual Risk Cannot be Eliminated
Yuba-Feather Flood Management Roles and Responsibilities

In California, flood management is a shared responsibility among Federal, State, and local agencies.

<table>
<thead>
<tr>
<th>Federal</th>
<th>State</th>
<th>Local Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>USACE</td>
<td>DWR</td>
<td>LD1</td>
</tr>
<tr>
<td>USBR</td>
<td>Cal OES</td>
<td>LD9</td>
</tr>
<tr>
<td>NWS</td>
<td>CVFPB</td>
<td>RD10</td>
</tr>
<tr>
<td>FEMA</td>
<td></td>
<td>RD784</td>
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</tbody>
</table>

|               |           | RD817          |
|               |           | RD1001         |
|               |           | RD2103         |
|               |           | MLC            |
|               |           | SBFCA          |
|               |           | TRLIA          |
|               |           | YCWA           |
## Yuba-Feather Recent Flood Improvement Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Project Implementer</th>
<th>Project Cost (millions)</th>
<th>Miles of Levee</th>
<th>Miles Repaired/Improved</th>
<th>Miles Remaining</th>
<th>People w/ Increased Protection</th>
<th>Assets w/ Increased Protection (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sutter Basin</td>
<td>Sutter-Butte Flood Control Agency</td>
<td>$ 442</td>
<td>40</td>
<td>35</td>
<td>5</td>
<td>95,000</td>
<td>$6,900</td>
</tr>
<tr>
<td>Yuba Basin</td>
<td>Three Rivers Levee Improvement Authority</td>
<td>$ 316</td>
<td>29</td>
<td>25</td>
<td>4</td>
<td>40,000</td>
<td>$1,400</td>
</tr>
<tr>
<td>Marysville Ring Levee Reconstruction</td>
<td>Marysville Levee Commission</td>
<td>$ 158</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>12,000</td>
<td>$100</td>
</tr>
</tbody>
</table>
Recent Flood Improvement Projects
The Feather River has over 225 miles of levees – 160 miles of these are SPFC (remaining are local non-project levees).

DWR maintains 10% & LMAs 90% of the levee system.

Channel Work
- Debris Removal
- Mowing
- Leveling

Levee Work
- Mowing
- Dragging
- Encroachment Removal
- Restoration
- Vegetation Spraying
- Burning
- Rodent Control
- Grading
- Patrolling
Flood Preparedness

Flood Safety Plan

Sutter Butte
Flood Control
Agency

Last updated April 2015
Forecast-Coordinated Operations

- Enhanced coordination
- Improved real-time data collection
- Improved runoff forecasting
- Decision Support System (DSS)
- Annual training and exercises
Looking to the Future

• DWR will continue its cooperation with partner agencies in
  – Sharing essential data
  – Securing funds for improvements & maintenance of the flood management system
  – Enhancing both natural & human environment

• DWR will continue to provide updates of Feather River flood management activities including site visits and briefings.
Final Thoughts

• The 1997 Flood was only a “100-year” flood. The risk of a larger flood will always exist and management of floods will continue to be a challenging task for all of us.

• Need to continue our partnership to improve and maintain the flood management system and its operations.

• Need to enhance our flood emergency preparedness and response to be better prepared; and continue to educate the public about the flood risk in the region.

• Need to have better land management policies and ensure existing people at risk are properly insured.
Follow us on social media

CADWR
CA_DWR
calwater
cadepartmentofwaterresources
Overview

• Reservoir Flood Control Basics
  – USACE Flood Control Diagram
• Interim Flood Control Planning
  – Enhanced Flood Pool
• Forecast Informed Reservoir Operations
• Looking to the Future
Flood Flow Reduction
United States Army Corps of Engineers
Flood Control Requirements
Lake Oroville Storage
October 1, 2018 to September 30, 2019

When the actual storage (blue line) is greater than the flood regulation rules storage (red line), Lake Oroville is temporarily "encroached" and is providing intended flood protection by buffering the effects of heavy runoff from the Feather River basin. During encroachment, Oroville releases are governed by U.S. Army Corps of Engineers rules (WCM 1970).

Updated through 9/30/2019
USACE Standard Project Flood

Graph showing inflow over time for different events:
- SPF
- 1997 event
- 2017 event

Inflow (1,000 cfs) vs. Time (hours)
Yuba-Feather System

Yuba City
[180K cfs]

Feather-Yuba confluence
[300K cfs]

Nicolaus
(Feather-Bear confluence)
[320K cfs]

Marysville
[180K cfs]
Yuba-Feather Forecast-Informed Water Operations (Y-F FIRO)

• **Leads**
  Department of Water Resources
  Yuba Water Agency
  UCSD / Scripps Institute / Center for Western Weather and Water Extremes

• **Members**
  State Climatologist
  USACE / Engineering Research and Development
  USACE / Water Operations
  NOAA / National Weather Service
  NOAA / National Marine Fishery Service
  DWR State Water Project Operations
  Sonoma Water Agency
Next Steps…

• Interim Flood Control Operations Planning
• Comprehensive Needs Assessment for Dam Safety
• Forecast Informed Reservoir Operations Initiative

Updated Water Control Manual
DWR Communications in Oroville

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530-534-2317

Questions or comments?
oroville@water.ca.gov

General information line:
800-248-7026
ITEM 4: REVIEW OF TOPICS FOR FUTURE MEETINGS
ITEM 5: PUBLIC COMMENT

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

We appreciate your input.
ITEM 6: ADJOURN

Thank you for attending.