

# **OROVILLE DAM CITIZENS ADVISORY COMMISSION**

**Meeting 18  
December 6, 2024**

**Hosted by the California Natural Resources Agency**



**CALIFORNIA  
NATURAL  
RESOURCES  
AGENCY**

# ITEM 1

## WELCOME AND COMMISSION UPDATES

# ROLL CALL

- Commissioner Bateman
- Supervisor Connelly
- Supervisor Conant
- Secretary Crowfoot
- Senator Dahle
- Sergeant Evans
- Supervisor Fuhrer
- Assemblyman Gallagher
- Director Ward
- Supervisor Kimmelshue
- Deputy Licon
- OES Manager Marin
- Supervisor Micheli
- Director Nemeth
- Mayor Pittman
- Vice Mayor Smith
- Director Quintero
- Lieutenant Spear
- Lieutenant Commander Stokes

# ACTION ITEM TRACKER

# OPENING REMARKS CONTINUED

## **ITEM 2**

# **WINTER OUTLOOK & OPERATIONS**

# Forecasting the Water Year

- Fall (October/November)
  - Precipitation Onset
  - Temperature: Anomalous, Extreme or Record-Setting
  - Soil Moisture State with Snowpack Initiation
- Winter (December/January/February)
  - Wet/Dry
  - Notable Anomalies
- Spring (March/April/May)
  - Late-Season Bailout or Early Shutoff?
  - Peak Snowpack Timing and Magnitude
- Summer (June/July/August/September)
  - Drying Timing, Pace and Scale
  - Extreme Heat Events
  - Tropical Activity
- Multi-Year Prediction – What about next year?

Climate Change: How much different will the next decade be?



## **ITEM 3**

# **OROVILLE EMERGENCY RESPONSE EXERCISE**



# SWP Emergency Preparedness Program and the 2024 Oroville Dam Exercises

Oroville Dam Citizens Advisory Commission



**EMERGENCY *PREPAREDNESS* PROGRAM**

# Introduction

## SWP EPP Program Vision

Building a resilient SWP through a culture of preparedness that supports and maintains a State of Readiness.

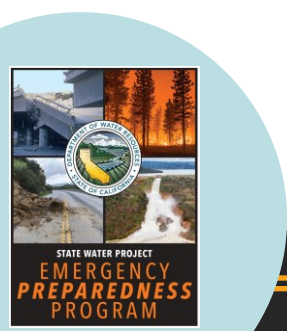
### Guiding Principles

**Consistency.** Program activities foster a shared understanding of emergency preparedness supported through standardization and integration of effort.

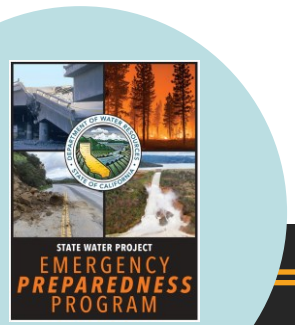
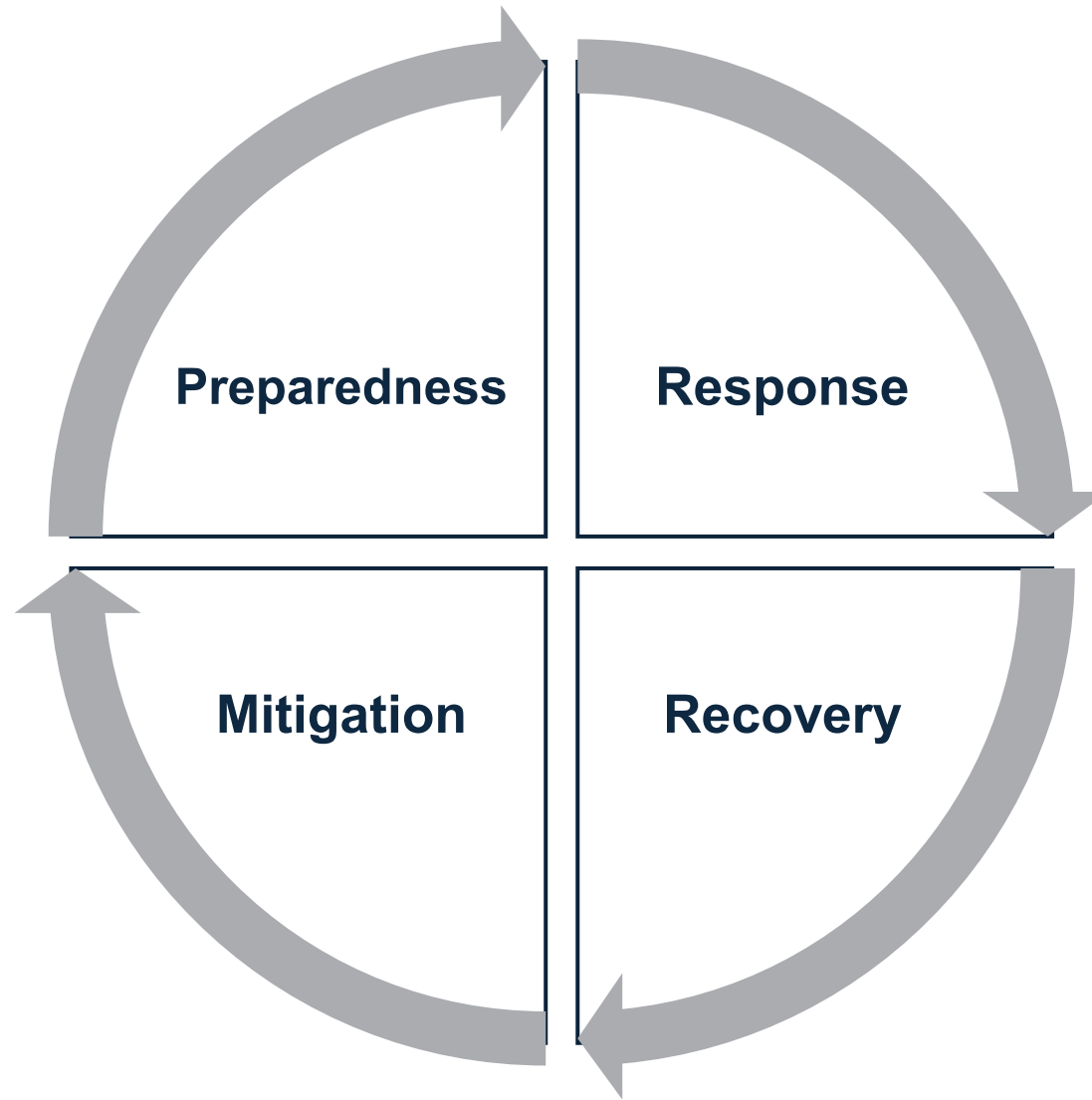
**Sustainability.** Program activities are memorialized through policy and are prioritized through dedication of organizational, human, and financial resources both now and in the future.

**Proactivity.** Program activities are driven by a risk-informed strategy that aligns with DWR priorities and is adaptive to change.

**Coordination.** Program activities are aligned internally and externally to maximize the potential of shared resources and partnerships.



# Phases of Emergency Management





# Overview of Trainings and Exercises

## Levels of exercises/training:

Seminar



Workshop



Tabletop Exercise  
(TTX)



Functional Exercise  
(FX)



Full-Scale Exercise

## Oroville Dam Exercises:

Tabletop  
Exercise

August 7 ,2024

Functional  
Exercise

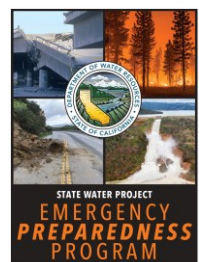
August 28 ,2024



# Oroville Dam Functional Exercise Overview

## Goals of the Exercise:

- Strengthen relationships
  - Within DWR
  - With External Agencies
- Identify opportunities for shared action.
- Identify improvements.



# Oroville Dam Functional Exercise Participants

**129**  
Total FX  
Attendees

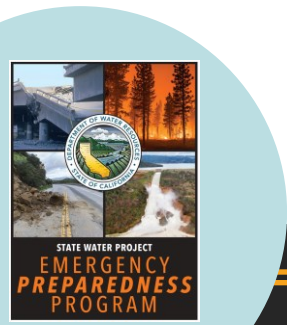
## Internal to DWR:

- OFD ICT
- SWP EOC
- DOC
- FOC
- DSOD

## External Agencies:

| FEDERAL / INTERNATIONAL  | LOCAL  |
|--|--|
| <ul style="list-style-type: none"><li>• Department of Homeland Security</li><li>• Federal Energy Regulatory Commission</li><li>• National Weather Service</li><li>• National Oceanic and Atmospheric Administration</li><li>• United States Army Corps of Engineers</li><li>• Ministry for the Ecological Transition and the Demographic Challenge (International)</li></ul> | <ul style="list-style-type: none"><li>• <b>Butte County</b></li><li>• City of Gridley</li><li>• <b>City of Oroville</b></li><li>• PG&amp;E</li><li>• South Feather Water and Power</li><li>• <b>Sutter County</b></li><li>• Yuba City</li><li>• <b>Yuba County</b></li><li>• Yuba Water</li><li>• California Water Service</li></ul> |
| STATE  |  |
| <ul style="list-style-type: none"><li>• California Department of Fish and Wildlife</li><li>• <b>California Governor's Office of Emergency Services</b></li><li>• <b>California Department of Parks and Recreation</b></li><li>• California Department of Transportation</li><li>• <b>California Highway Patrol</b></li></ul>   |  |

**Blue Text =**  
OCAC Member





# Key Take Aways

- Continue internal trainings with inclusion of external partners
- Increase frequency of exercises
- Improve Cooperator Meetings





STATE WATER PROJECT

**EMERGENCY  
PREPAREDNESS  
PROGRAM**

# Questions and Comments?



## **ITEM 4**

# **WATER CONTROL MANUAL UPDATE**

# NEW BULLARDS BAR DAM - OROVILLE DAM WCM UPDATES

Jenny Fromm, P.E.  
Chief, Water Management  
Sacramento District

Oroville Citizens Advisory Committee Meeting

Date: 06 DEC 2024



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of Engineers®





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# AGENDA

- Water Control Manual Overview
- FIRO Pilot Study
- Simplified WCM Update Process
- Next Steps
- Questions



# **01 Water Control Manual Overview**

# USACE WATER MANAGEMENT

## **Basic objectives of water control management**

- Operate to authorized purposes and laws
- Maintain structural and operational integrity
- Avoid risk to public health and safety, life, and property

## **USACE is responsible for water control management at USACE-owned projects**

## **USACE is also responsible for prescribing flood control and navigation regulations and guidance at non-USACE projects**

- Dams owned and operated in non-flood space by other entity
- Special acts of Congress
- FERC conditions
- Other agreements



## OROVILLE DAM AND RESERVOIR

Feather River, California

### REPORT ON RESERVOIR REGULATION FOR FLOOD CONTROL

AUGUST 1970

**DEPARTMENT OF THE ARMY**

SACRAMENTO DISTRICT, CORPS OF ENGINEERS  
SACRAMENTO, CALIFORNIA

# WCM TERMINOLOGY

A water control manual includes

- Description and history of the project
- Information about the watershed
- Water control plan (operations plan)

The water control plan describes how the project is to be operated to meet its authorized purposes

- Graphical representation of WCP is the water control diagram
- The water control diagram shows the flood control space and release requirements, based on the time of year and state of the watershed





**NEW BULLARDS BAR RESERVOIR**  
North Yuba River, California

**RESERVOIR REGULATION  
FOR FLOOD CONTROL**

APPENDIX V  
To  
Master Manual of Reservoir Regulation  
Sacramento River Basin, California

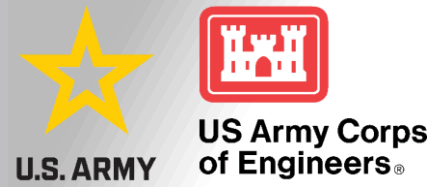
JUNE 1972

**DEPARTMENT OF THE ARMY**  
SACRAMENTO DISTRICT, CORPS OF ENGINEERS  
SACRAMENTO, CALIFORNIA

## WCM UPDATE JUSTIFICATION

Water control manual should be reviewed regularly and updated when information is outdated

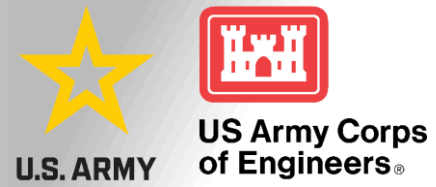
- Administrative
  - Points of contact
  - Activity/developments in watershed
  - Hydrologic data to add to period-of-record analyses
  - Updates to USACE standards
- Comprehensive
  - Revisions to water control plan



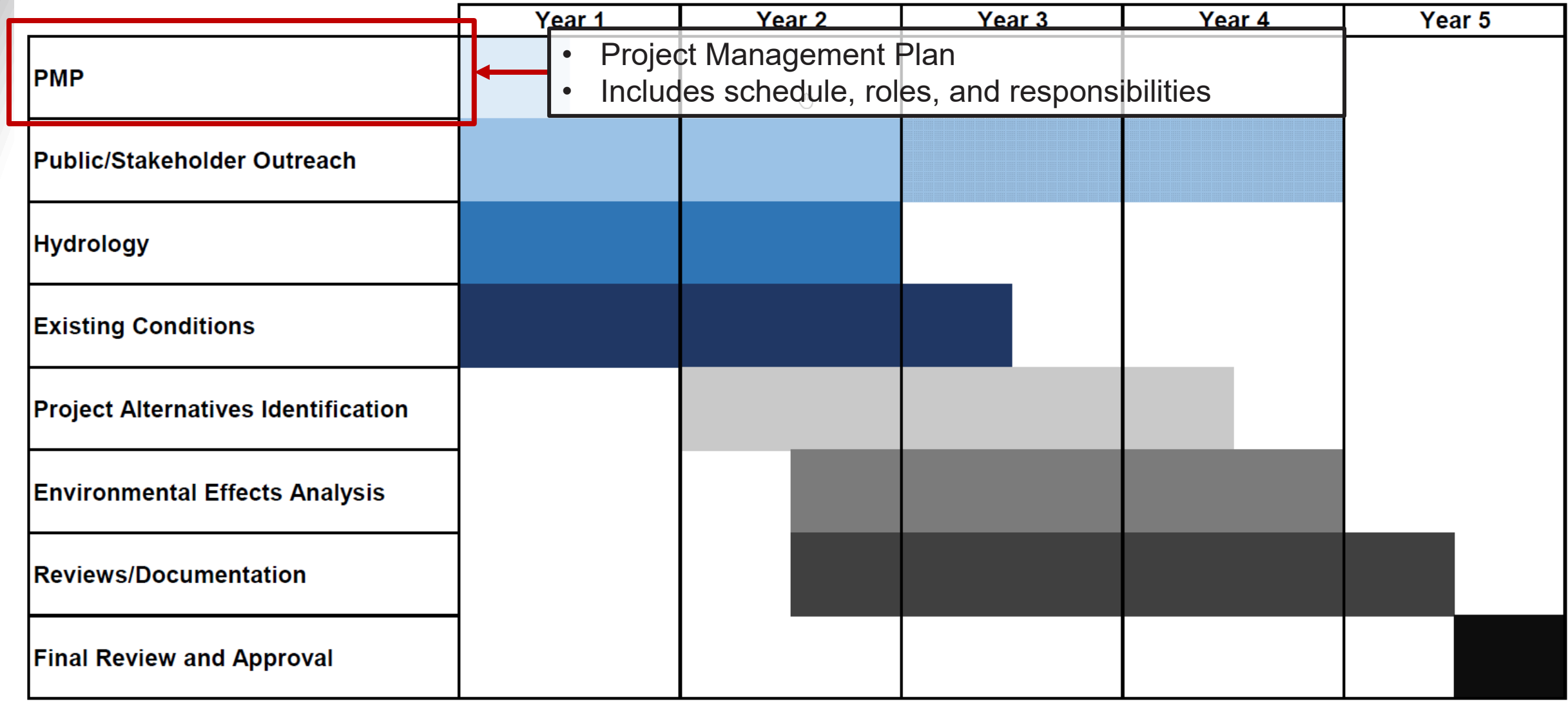
# SIMPLIFIED WCM UPDATE PROCESS

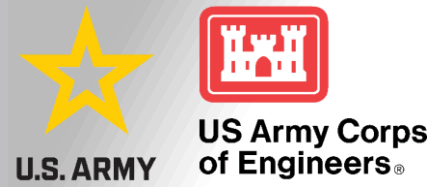
|                                     | Year 1     | Year 2     | Year 3     | Year 4     | Year 5    |
|-------------------------------------|------------|------------|------------|------------|-----------|
| PMP                                 | Light Blue | Hand icon  |            |            |           |
| Public/Stakeholder Outreach         | Light Blue | Light Blue | Light Blue | Light Blue |           |
| Hydrology                           | Dark Blue  | Dark Blue  |            |            |           |
| Existing Conditions                 | Dark Blue  | Dark Blue  | Dark Blue  |            |           |
| Project Alternatives Identification |            | Light Gray | Light Gray | Light Gray |           |
| Environmental Effects Analysis      |            | Dark Gray  | Dark Gray  | Dark Gray  |           |
| Reviews/Documentation               |            | Dark Gray  | Dark Gray  | Dark Gray  | Dark Gray |
| Final Review and Approval           |            |            |            |            | Black     |





# SIMPLIFIED WCM UPDATE PROCESS



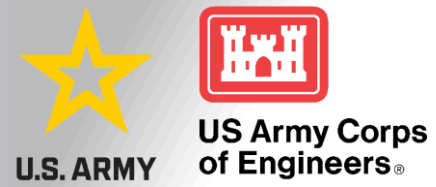


# SIMPLIFIED WCM UPDATE PROCESS

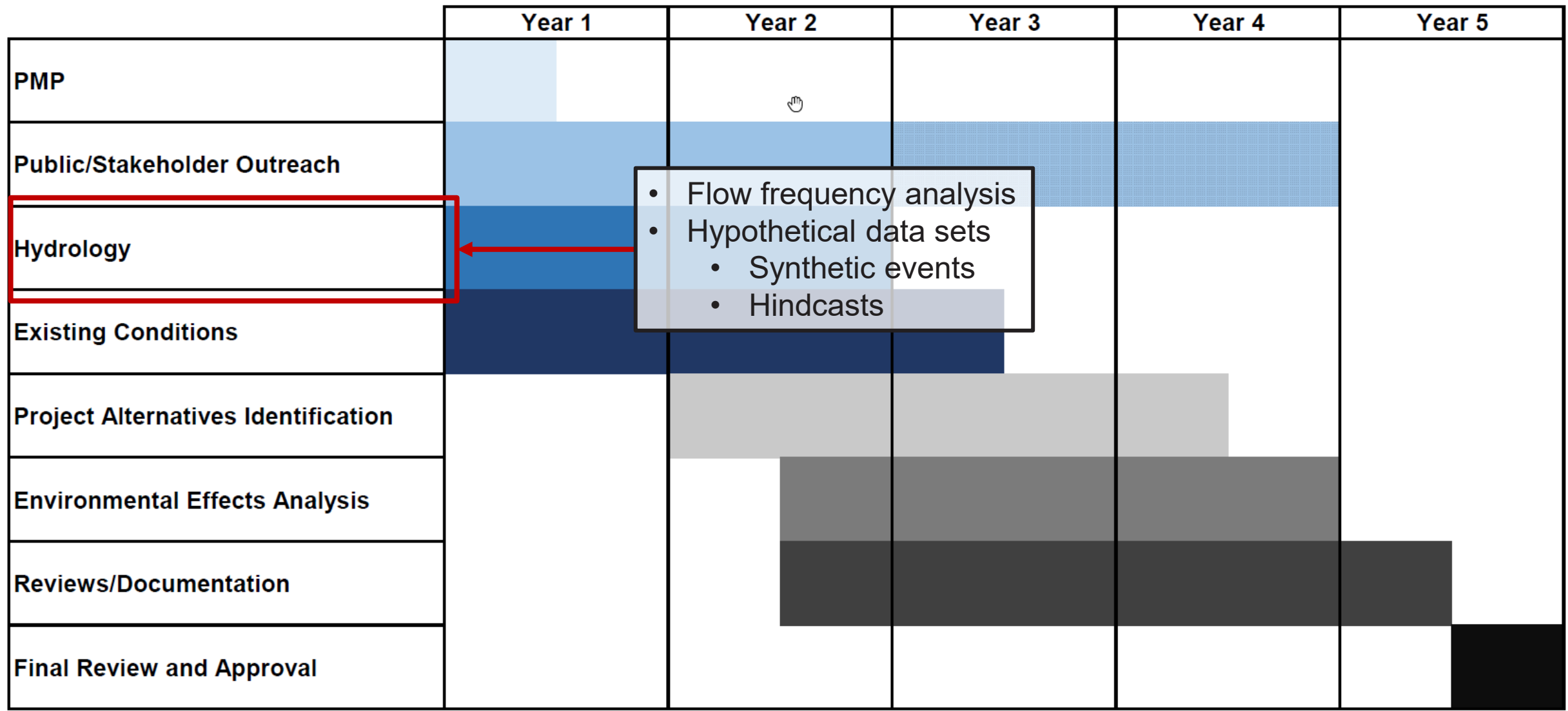
|                                     | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|-------------------------------------|--------|--------|--------|--------|--------|
| PMP                                 |        |        |        |        |        |
| Public/Stakeholder Outreach         |        |        |        |        |        |
| Hydrology                           |        |        |        |        |        |
| Existing Conditions                 |        |        |        |        |        |
| Project Alternatives Identification |        |        |        |        |        |
| Environmental Effects Analysis      |        |        |        |        |        |
| Reviews/Documentation               |        |        |        |        |        |
| Final Review and Approval           |        |        |        |        |        |

- Stakeholder workshops
- Stakeholder assessment report

Public/Stakeholder Outreach

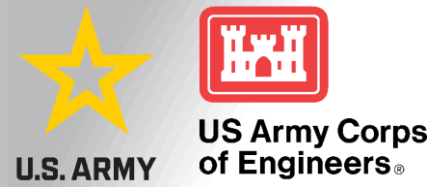


# SIMPLIFIED WCM UPDATE PROCESS



- Flow frequency analysis
- Hypothetical data sets
  - Synthetic events
  - Hindcasts





# SIMPLIFIED WCM UPDATE PROCESS

|                                     | Year 1     | Year 2   | Year 3     | Year 4     | Year 5    |
|-------------------------------------|------------|--|------------|------------|-----------|
| PMP                                 | Light Blue |  |            |            |           |
| Public/Stakeholder Outreach         | Light Blue | Light Blue   | Light Blue | Light Blue |           |
| Hydrology                           | Dark Blue  | Dark Blue  |            |            |           |
| Existing Conditions                 | Dark Blue  | <ul style="list-style-type: none"> <li>Modeling of baseline/historical reservoir ops</li> <li>Establish baseline environmental conditions</li> </ul> |            |            |           |
| Project Alternatives Identification |            | Light Gray   | Light Gray | Light Gray |           |
| Environmental Effects Analysis      |            | Dark Gray  | Dark Gray  | Dark Gray  |           |
| Reviews/Documentation               |            | Dark Gray  | Dark Gray  | Dark Gray  | Dark Gray |
| Final Review and Approval           |            |  |            |            | Black     |

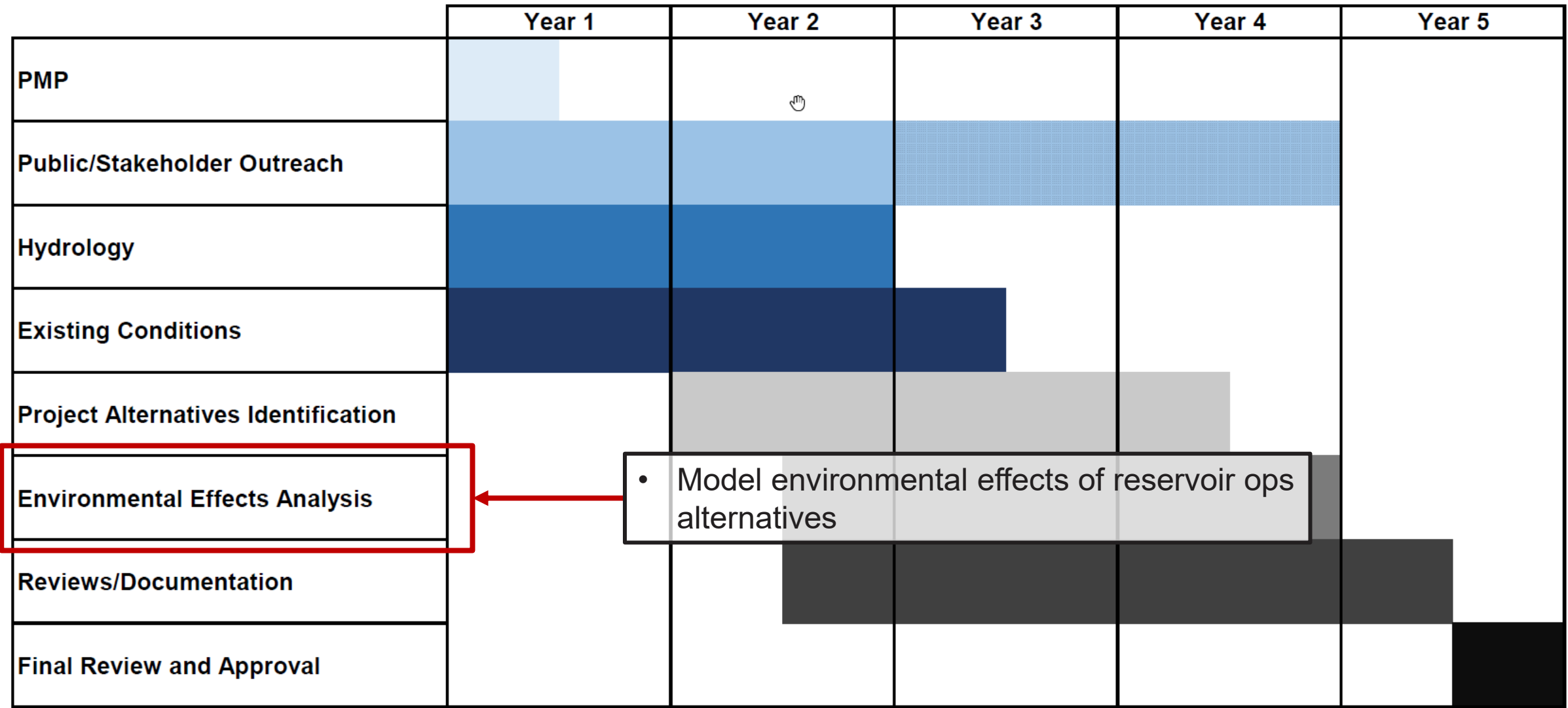
# SIMPLIFIED WCM UPDATE PROCESS

|                                     | Year 1     | Year 2     | Year 3     | Year 4     | Year 5    |
|-------------------------------------|------------|------------|------------|------------|-----------|
| PMP                                 | Light Blue |            |            |            |           |
| Public/Stakeholder Outreach         | Light Blue | Light Blue | Light Blue | Light Blue |           |
| Hydrology                           | Dark Blue  | Dark Blue  |            |            |           |
| Existing Conditions                 | Dark Blue  | Dark Blue  | Dark Blue  |            |           |
| Project Alternatives Identification |            |            |            |            |           |
| Environmental Effects Analysis      |            | Grey       | Grey       | Grey       |           |
| Reviews/Documentation               |            | Dark Grey  | Dark Grey  | Dark Grey  | Dark Grey |
| Final Review and Approval           |            |            |            |            | Black     |

- Model various reservoir ops alternatives
- Evaluate reservoir and downstream results

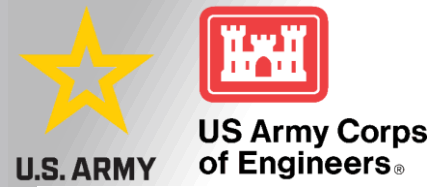


# SIMPLIFIED WCM UPDATE PROCESS

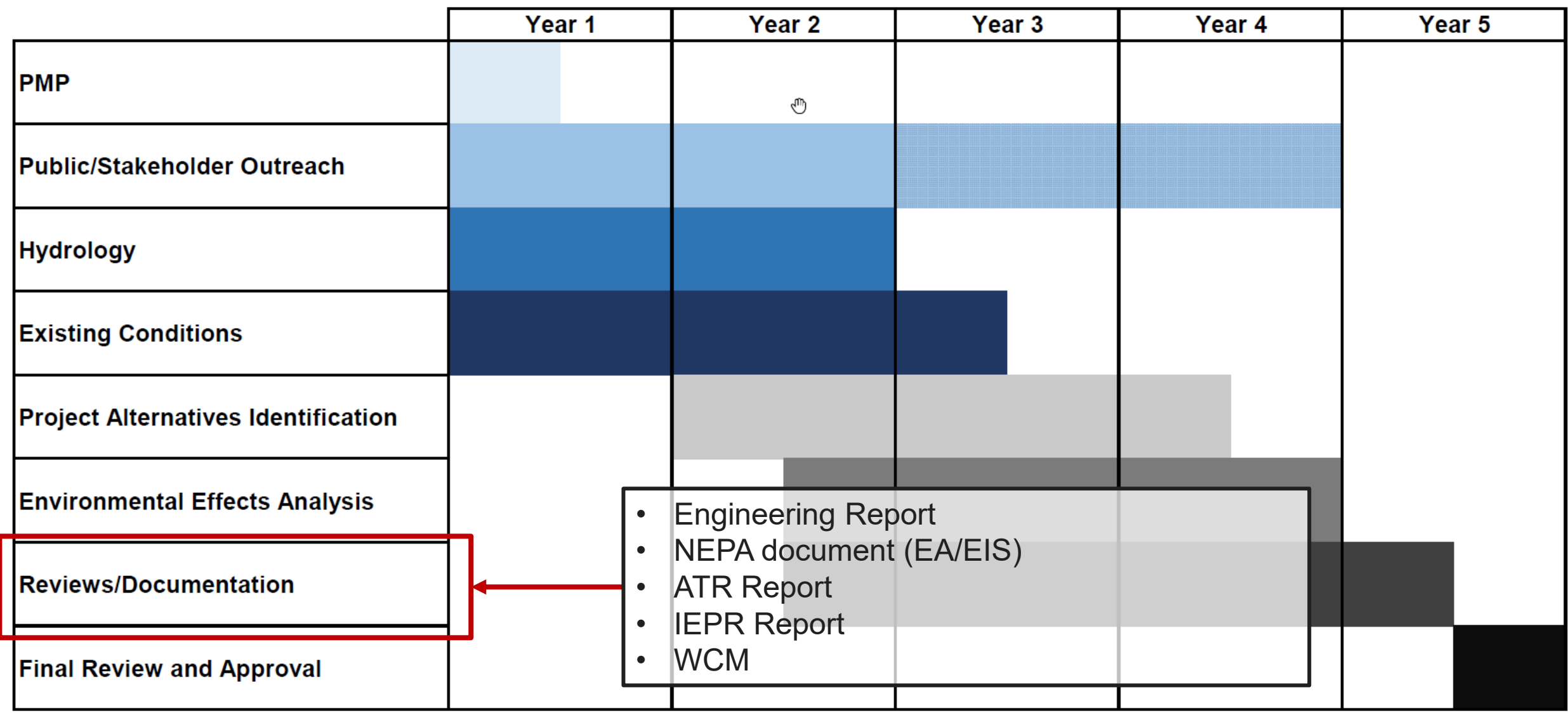


- Model environmental effects of reservoir ops alternatives



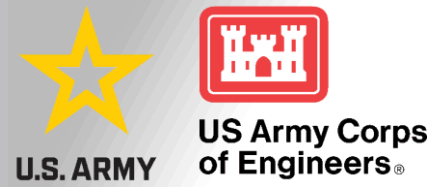


# SIMPLIFIED WCM UPDATE PROCESS

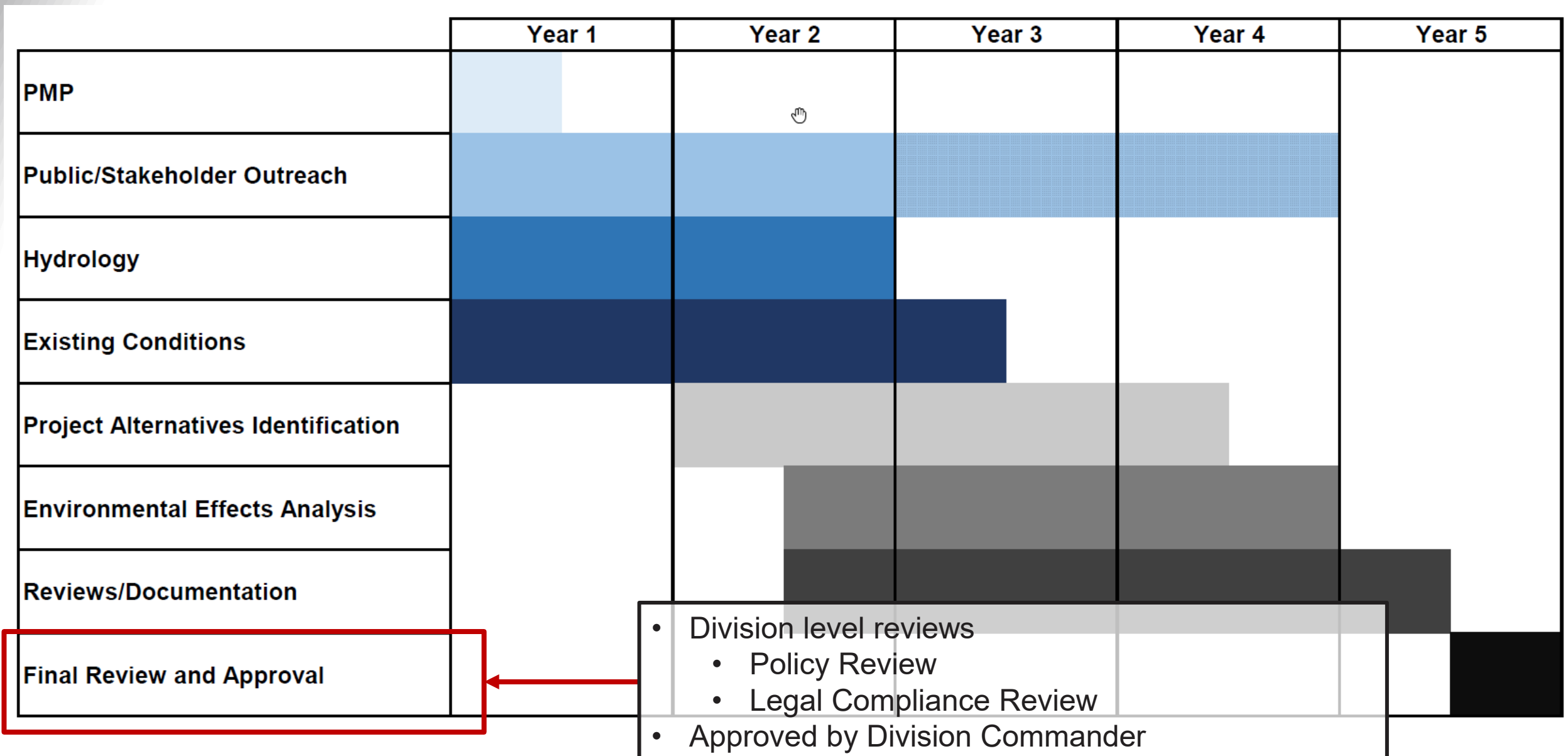


- Engineering Report
- NEPA document (EA/EIS)
- ATR Report
- IEPR Report
- WCM





# SIMPLIFIED WCM UPDATE PROCESS





# 02 FIRO Pilot Study



US Army Corps  
of Engineers®

# FORECAST INFORMED RESERVOIR OPERATIONS (FIRO)

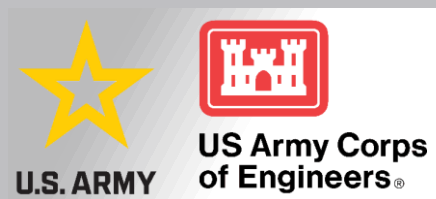
## FIRO Definition:

*A reservoir operations strategy that better informs decisions to retain or release water by integrating **additional flexibility** in operation policies and rules with enhanced monitoring and improved weather and hydrological forecasts*

With FIRO, forecast information can be used to compute:

1. The amount of space to keep empty to prepare for future inflows, and
2. The magnitude of releases that are needed (or not needed) when encroached in this space.

Goals of FIRO are to **improve flood risk management and increase water conservation**



# YUBA-FEATHER FIRO PILOT PROGRAM

Yuba Water Agency and DWR are working with the U.C. San Diego, Scripps Institution of Oceanography, Center for Western Water and Weather Extremes (CW3E) to evaluate the viability of FIRO in the Yuba-Feather System.

This parallel research effort is being coordinated with the Oroville and New Bullards Bar WCM Updates. More information is available on the CW3E website:  
[https://cw3e.ucsd.edu/firo\\_yuba\\_feather](https://cw3e.ucsd.edu/firo_yuba_feather)

# **02 Simplified WCM Update Process**



# STATUS OF ENVIRONMENTAL TASKS FOR WCM UPDATES

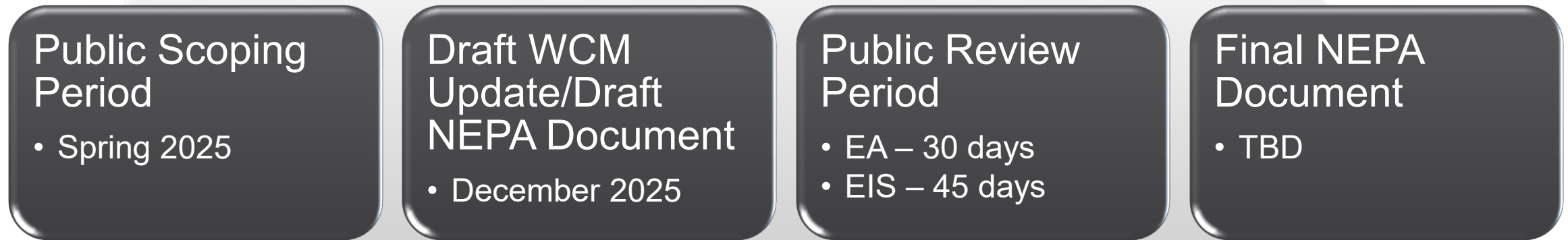
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|  |  |
|--|--|
| 1. Environmental Compliance Management Plan                                      |  |
| 2. Environmental Modeling Plan   |  |
| 3. Develop No-Action and Future without Project base condition                   |  |
| 4. Modeling to support initial environmental analyses and alternatives screening |  |
| 5. NEPA Scoping and Initial Stakeholder Coordination                             |  |
| 6. Draft WCM Document  |  |
| 7. Draft NEPA Document   |  |
| 8. Public Draft Review   |  |
| 9. Final NEPA Document and WCM Update  |  |
| 10. USACE Approval and Record of Decision  |  |

Completed
 In Progress
 Not Started

# 03 Next Steps

# NEXT STEPS: NEPA PROCESS AND TIMELINE



- **NEPA Lead Agency:** *USACE, Sacramento District*
- **Cooperating Agencies:** *TBD*
- **CEQA:** *Not expected*



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of Engineers®

## FOR ADDITIONAL INFORMATION

For additional information on the New Bullards Bar and Oroville Dams Water Control Manual Updates, visit the project web page by using this QR code.



Email us questions or comments at  
[NBB-Oroville-WCMupdates@usace.army.mil](mailto:NBB-Oroville-WCMupdates@usace.army.mil)



## **ITEM 5**

**HOW THE WATER CONTROL MANUAL  
RELATES TO PUBLIC SAFETY DOWNSTREAM**

**Commissioner-led presentation on how the Water Control Manual relates to public safety, including perspectives on public safety-focused objectives for the update**

**Robert Bateman, Commissioner  
Oroville Dam Citizens Advisory Commission**

**Matt Mentink, Member  
Oroville Dam Comprehensive Needs Assessment  
Ad Hoc Group**

Presented on behalf of the Feather River Recovery Alliance

# WHY DOWNSTREAM SAFETY MUST BE REPRESENTED IN WCM REVISION PROCESS

- Water has long been a divisive issue in the Central Valley
- Regulation must reflect balance between safety and water delivery
- Water Control Manual (WCM) has failed us in the past partly because it was designed primarily for water delivery
- The state water contractors have power and influence.
- Public safety must be strongly represented by united community interests
- Water delivery is important but safety must be priority

Presented on behalf of the Feather River Recovery Alliance

# WHO ARE WE AND HOW HAVE WE BEEN REPRESENTING DOWNSTREAM SAFETY

- Butte County affiliated Feather River Recovery Alliance  
[www.notjustaspillway.com](http://www.notjustaspillway.com)
- 2017 petition to FERC to 'hold the DWR accountable' signed by 6,500
- Allies and advisors include:
  - CNA Ad Hoc Group members
  - City of Oroville, Oroville Recreation Committee, Feather River Recreation and Park District, and other Oroville agencies
  - OCAC commissioners
  - UC Berkeley Center of Catastrophic Risk Management
  - Local state elected representatives

Presented on behalf of the Feather River Recovery Alliance

# WHO ARE WE AND HOW HAVE WE BEEN REPRESENTING DOWNSTREAM SAFETY

- Working with the US Army Corps of Engineers on WCM
  - Questions submitted November 2023 answered in February
  - Concerns and recommendations submitted in August
- Meetings with DWR under the auspices of the OCAC
- Lessons learned from 1997 Flood
  - Understanding FIRO
  - Appreciation of DWR's WCM objectives

Presented on behalf of the Feather River Recovery Alliance

# WHO ARE WE AND HOW HAVE WE BEEN REPRESENTING DOWNSTREAM SAFETY continued

- Working with the US Army Corps of Engineers on WCM
  - Questions submitted November 2023 answered in February
  - Concerns and recommendations submitted in August
- Meetings with DWR under the auspices of the OCAC
- Lessons learned from 1997 Flood
  - Understanding FIRO
  - Appreciation of DWR's WCM objectives

Presented on behalf of the Feather River Recovery Alliance

## WCM PARTICIPATION AND PRIORITY OBJECTIVES

- Public participation in WCM development
  - ER 1110-2-240 5.2
  - Early public participation in meetings and access to reports
- Yuba Feather FIRO priority objectives
  - Standard project flood (500 year) protection
  - Downstream flow constraints and levee failure

Presented on behalf of the Feather River Recovery Alliance



## MAIN CONCERNS

- Flood pool capacity
  - Loss of Marysville reservoir 260,000-acre feet
  - Soil wetness index
  - Starting elevation of EFO alternative flood pool
- Infrastructure certification
  - Emergency spillway surcharge
  - FCO – gate bulkhead usage
  - Levee certification – flow volume, duration, downramping

# MAIN CONCERNS

## continued

- Flood safety vs water delivery
  - Economic value of increased water storage
  - Economic cost of downstream evacuations and flooding
  - Competing interfaces within WCM development
- Flood safety vs water delivery
  - Economic value of increased water storage
  - Economic cost of downstream evacuations and flooding
  - Competing interfaces within WCM development

# CONCLUSIONS

- WCM can be designed to provide more water and lower safety risk
- The information to date suggests that safety/water interfaces still have to be resolved, for instance:
  - FIRO forecasts integration with wetness index/flood pool
  - Margins of error in forecasts
  - Levee certification
- Public safety must be strongly represented in the US Army Corps of Engineers WCM process

Please help us fulfill this requirement

# CONCLUSIONS

## continued

- Collaboration with DWR in WCM could lead to: 'joint voice advocating safety'
- Benefit of increased water deliveries should be shared between State Water Contractors and maintenance/renovation projects proposed in the CNA conclusions so that future FERC inspections do not result in unaddressed issues.

# Thank You

Presented on behalf of the Feather River Recovery Alliance

# MEETING 19 AGENDA

## PROPOSED TOPICS

## FEEDBACK DUE DATES

- CNRA will circulate proposed Action Item Tracker updates and proposed Meeting 19 Agenda by December 20
  - Commissioner feedback **January 10**

# **ITEM 6 PUBLIC COMMENT**

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

**We appreciate your input.**

# **ITEM 7 ADJOURN**

**Commission Meeting #19  
Winter 2025**