



STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
**OROVILLE DAM SAFETY
COMPREHENSIVE NEEDS ASSESSMENT**



Operations Update

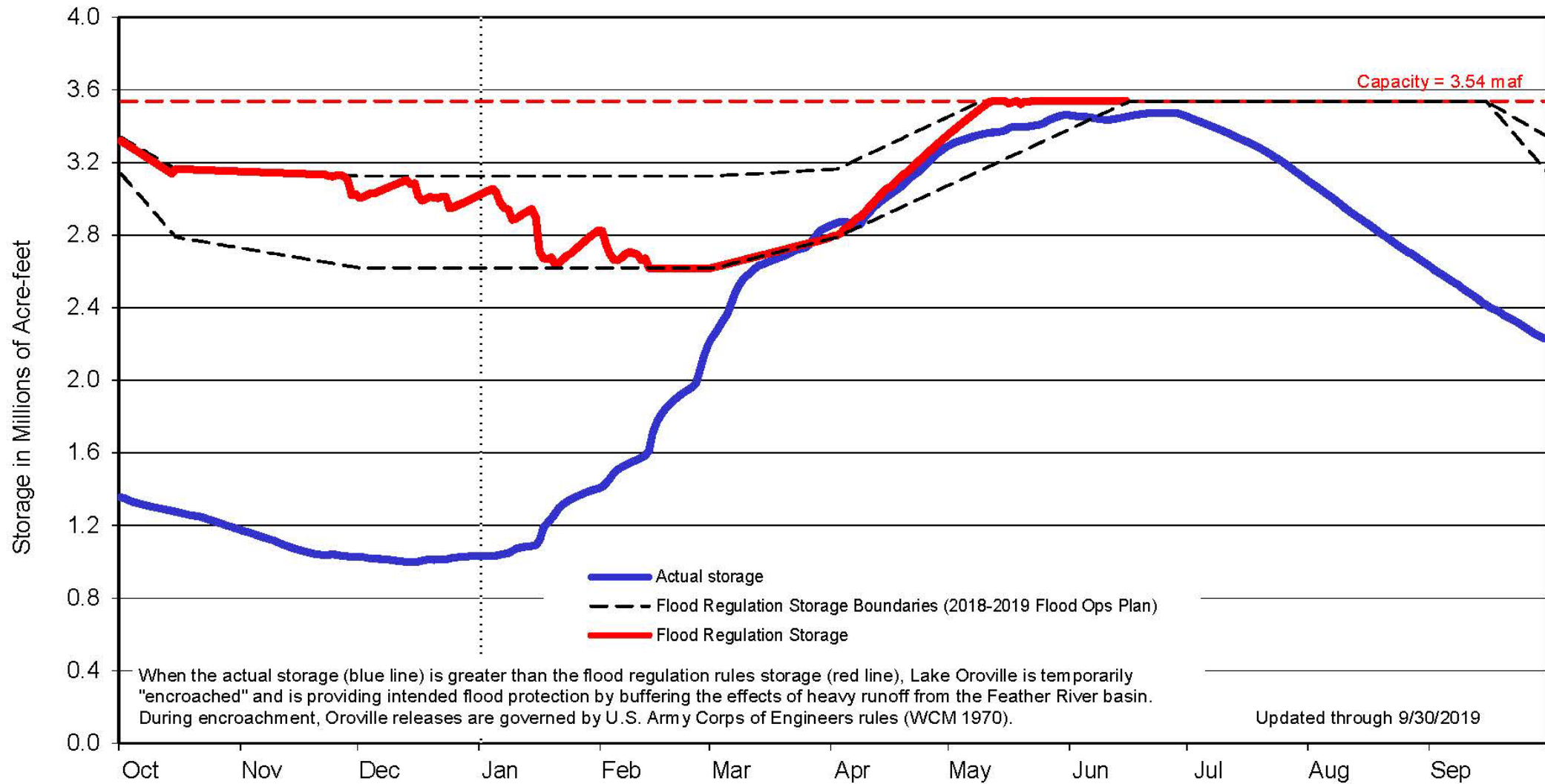
- 2019-20 Flood Ops
- FIRO Initiative

October 16, 2019

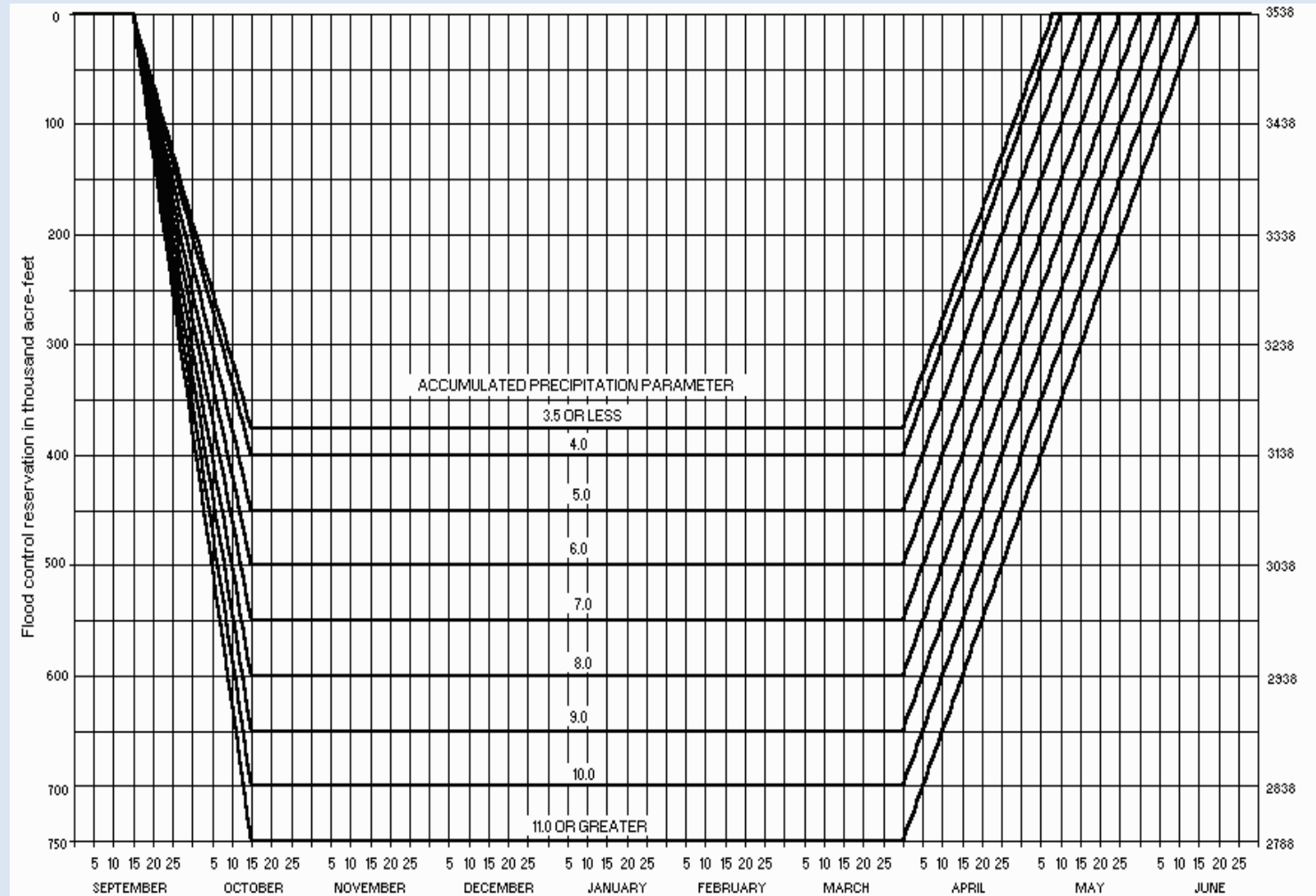


Lake Oroville Storage

October 1, 2018 to September 30, 2019



USACE Flood Space Requirements



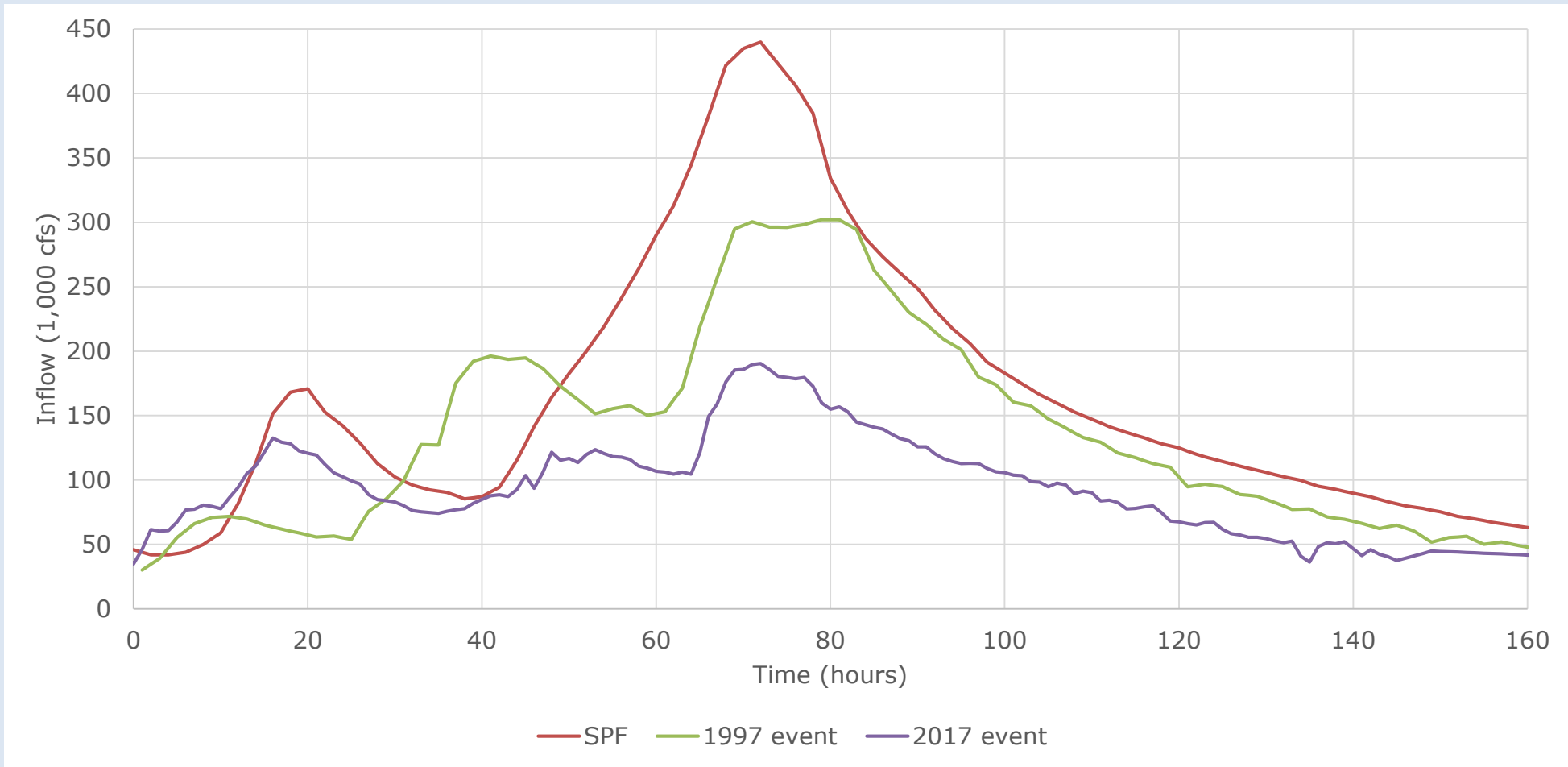
USACE Flood Release Requirements

Table 4-4. Planned release schedule

| Actual or Forecasted Inflow (cfs) | Enhanced Flood Control Space Used (TAF) | Planned Release |
|-----------------------------------|-----------------------------------------|-----------------------------------------|
| 0 – 15,000 | 0 – 5 | Power Demand |
| 0 – 15,000 | Greater than 5 | Inflow |
| 15,000 – 30,000 | 0 - 30 | Lesser of 15,000 cfs or maximum inflow |
| 0 – 30,000 | Greater than 30 | Maximum inflow for flood |
| 30,000 – 120,000 | — | Lesser of maximum inflow or 60,000 cfs |
| 120,000 – 175,000 | — | Lesser of maximum inflow or 100,000 cfs |
| Greater than 175,000 | — | Lesser of maximum inflow or 150,000 cfs |

Source: USACE 1970

USACE Standard Project Flood



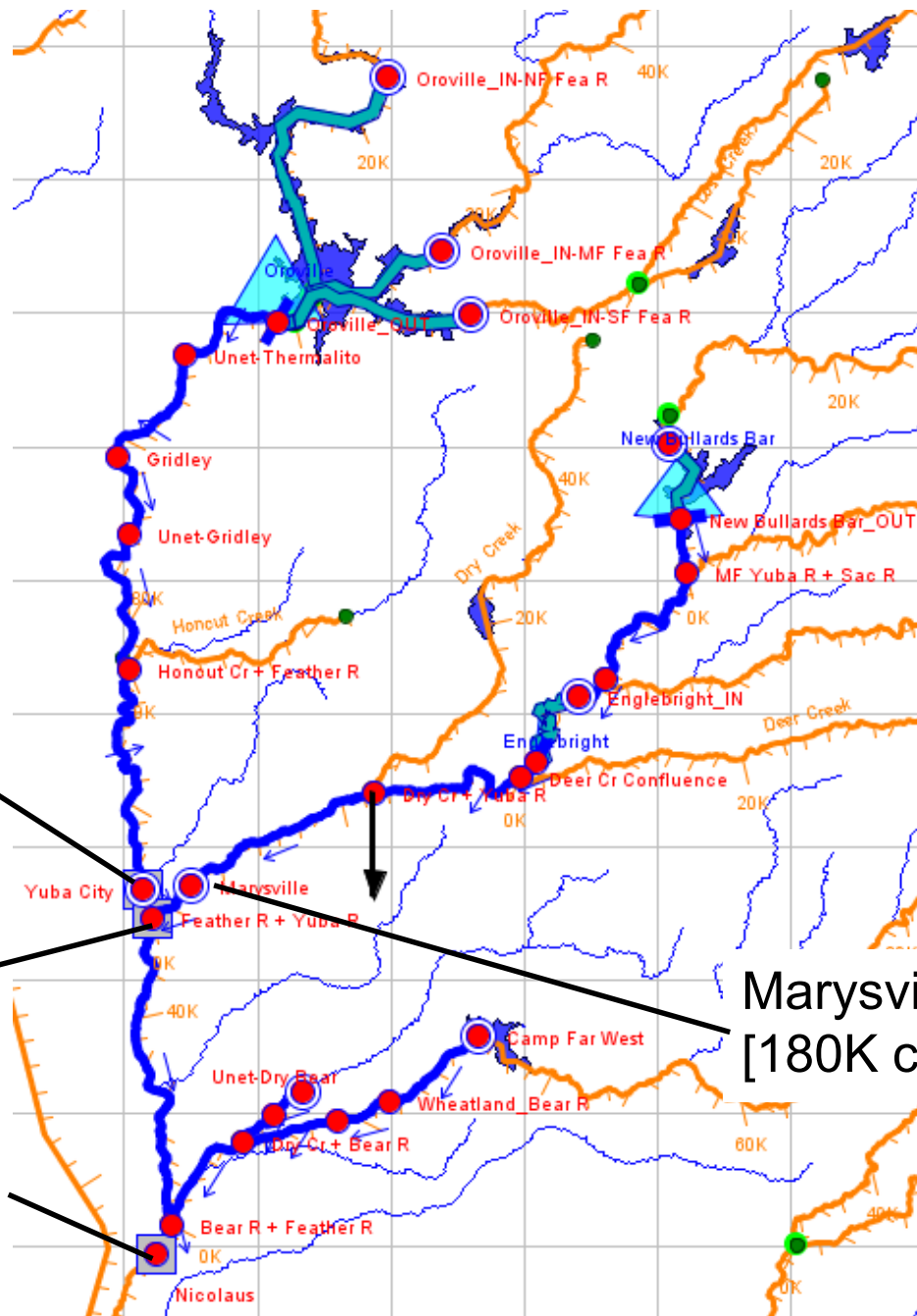
Yuba-Feather System

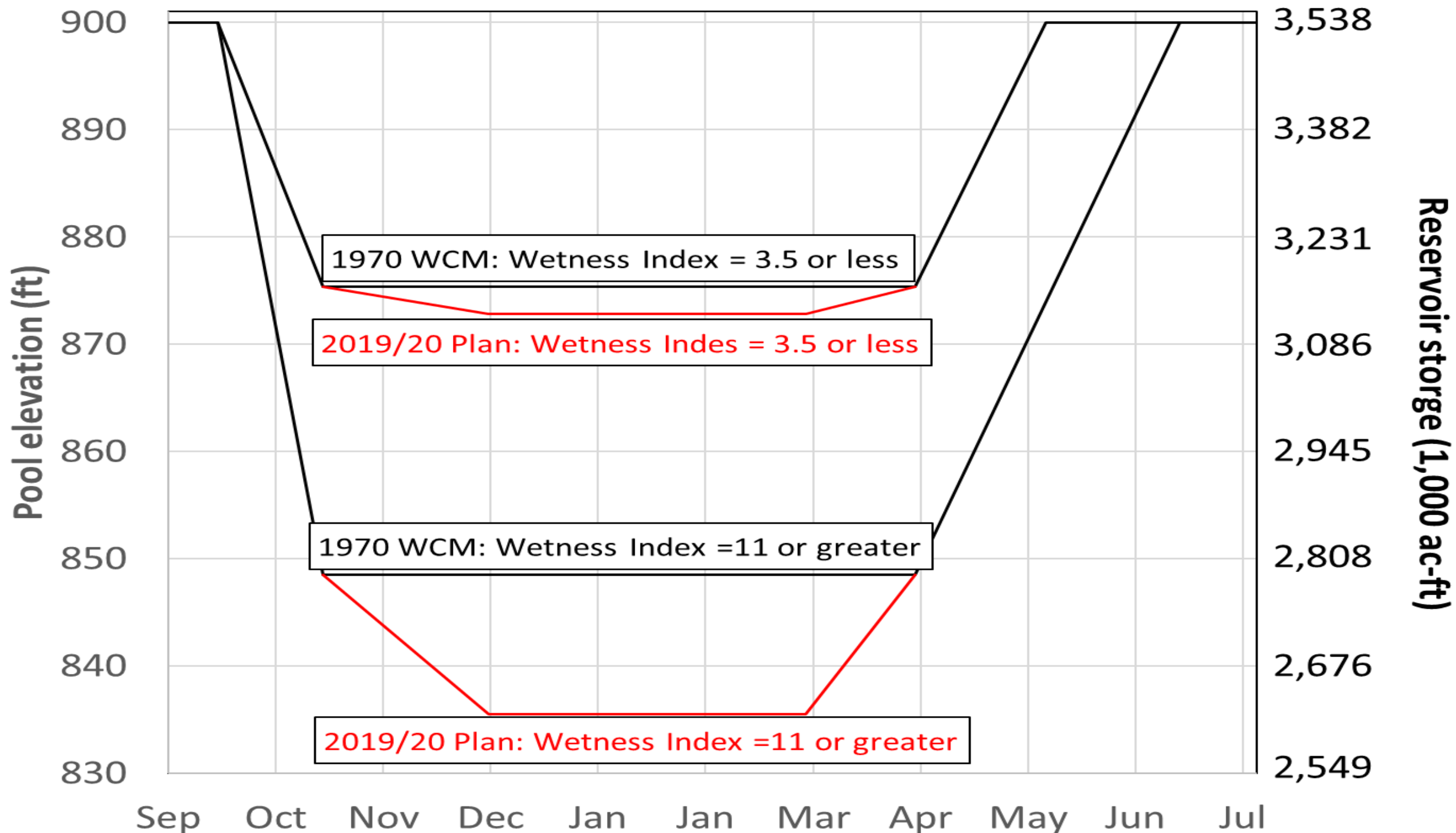
Yuba City [180K cfs]

Feather-Yuba confluence [300K cfs]

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

Marysville [180K cfs]





Yuba-Feather Forecast-Informed Reservoir Operation (Y-F FIRO) Initiative

1. Formal kick-off this year (steering committee with a support team)
2. Third official on-going FIRO program (Lake Mendocino, Prado Dam)
3. Builds upon existing Forecast Coordinated Operations Initiative
4. Initiate research investigations to improve forecasting
5. Develop and conduct viability assessments
6. Informing development of Water Control Manual update

Yuba - Feather FIRO Steering Committee

- **Co-Chairs**

Curt Aikens – Yuba Water Agency

F. Martin Ralph – UCSD / Scripps / CW3E

John Leahigh – DWR State Water Project

- **Members**

State Climatologist

Center for Western Water and Weather Extremes

USACE / ERDC

USACE / SPK

NOAA / NWS

NOAA / NMF

DWR State Water Project Operations

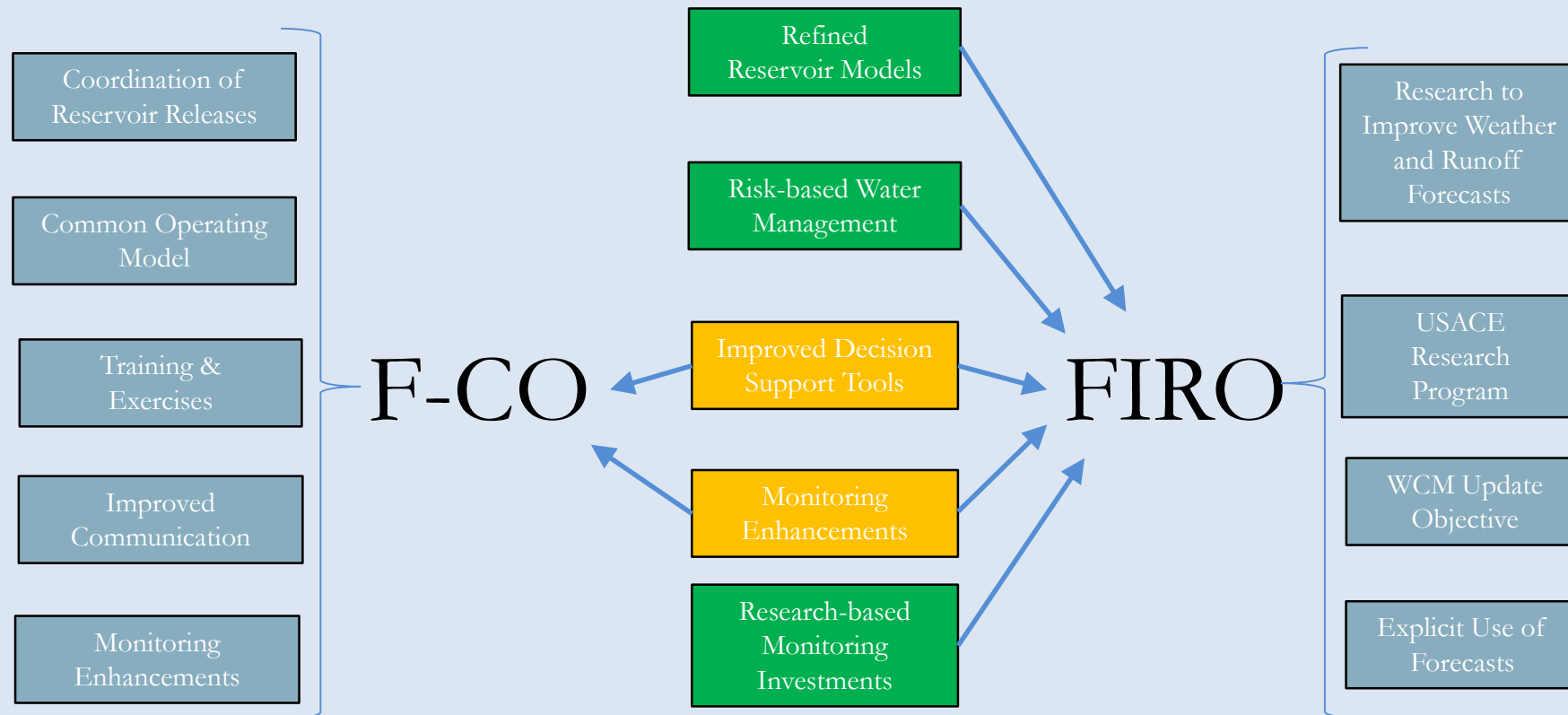
Yuba Water Agency Operations

Mendocino FIRO Steering Committee

Project Partners



Integrating Yuba-Feather Forecast-Coordinated Operations with FIRO



Immediate Atmospheric River Research Investments

- Ocean Reconnaissance
 - WC-130j Hurricane Hunter
 - Northeast Pacific Buoy Observations
- Land-Based Monitoring Installations
 - Atmospheric Observatories via Weather Balloon
 - Snow Level Vertically Pointing Radar
 - Surface Meteorology Stations
 - Soil Moisture Instrumentation

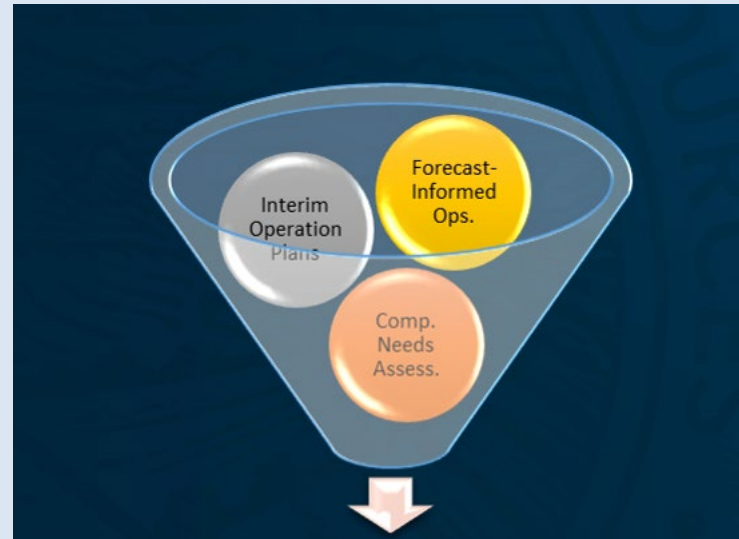


Y-F FIRO Schedule



Next Steps...

- Interim Flood Control Operations Plans
- Completion of the CNA Process
- Forecast Informed Reservoir Operations Initiative



Updated Water Control Manual