

State Water Project Lake Oroville Yuba-Feather Watershed



John Leahigh

FIRO | August 2019 Workshop

SWP Water Operations Executive Manager

Challenges to SWP Deliveries



- Variable and Decreasing Supply



- Increasing Demand



Sacramento – San Joaquin Delta

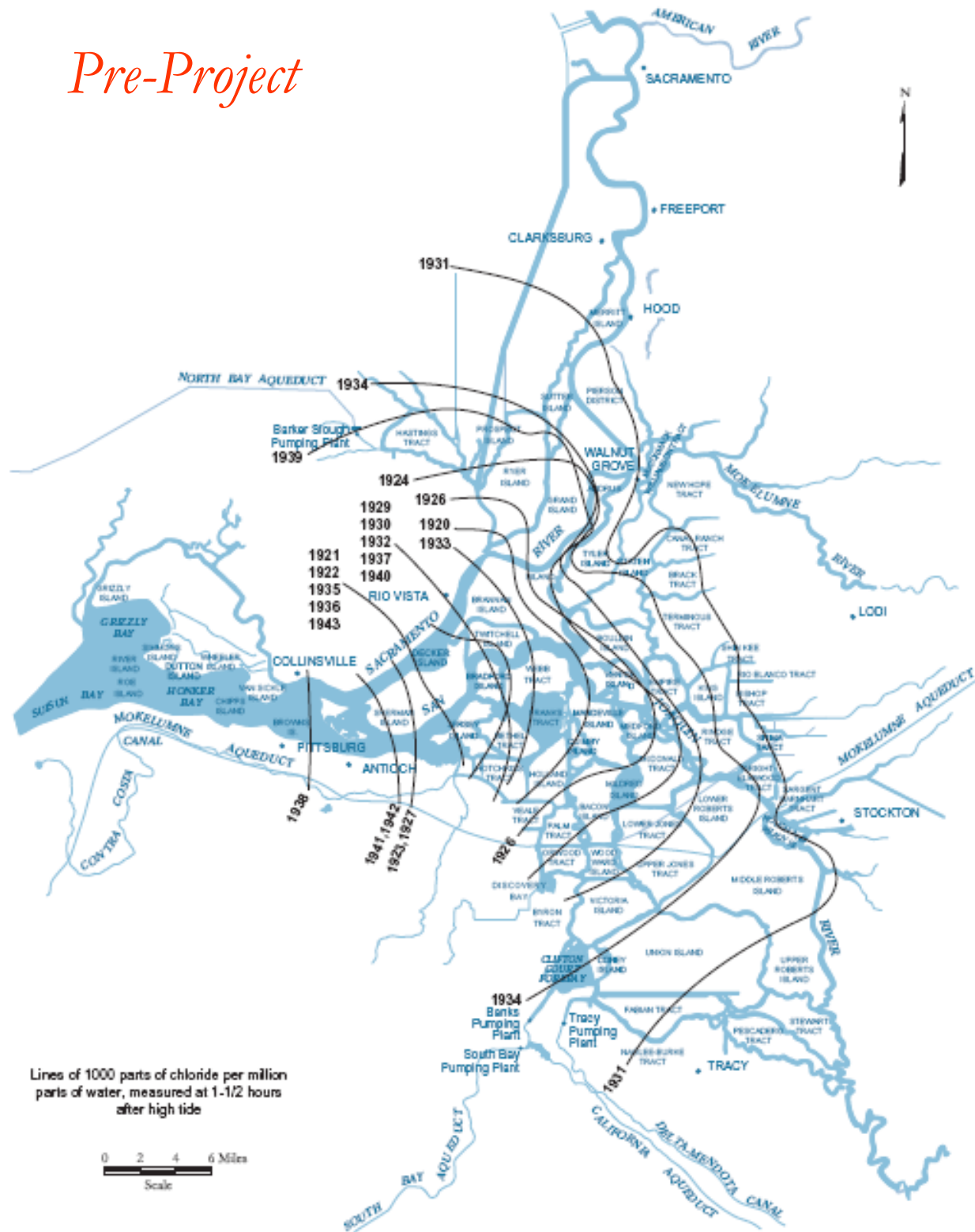


Bay-Delta detail image from CALFED

Projects Control the Saltwater Intrusion

Figure 4-26 Maximum Salinity Intrusion, 1921-1943

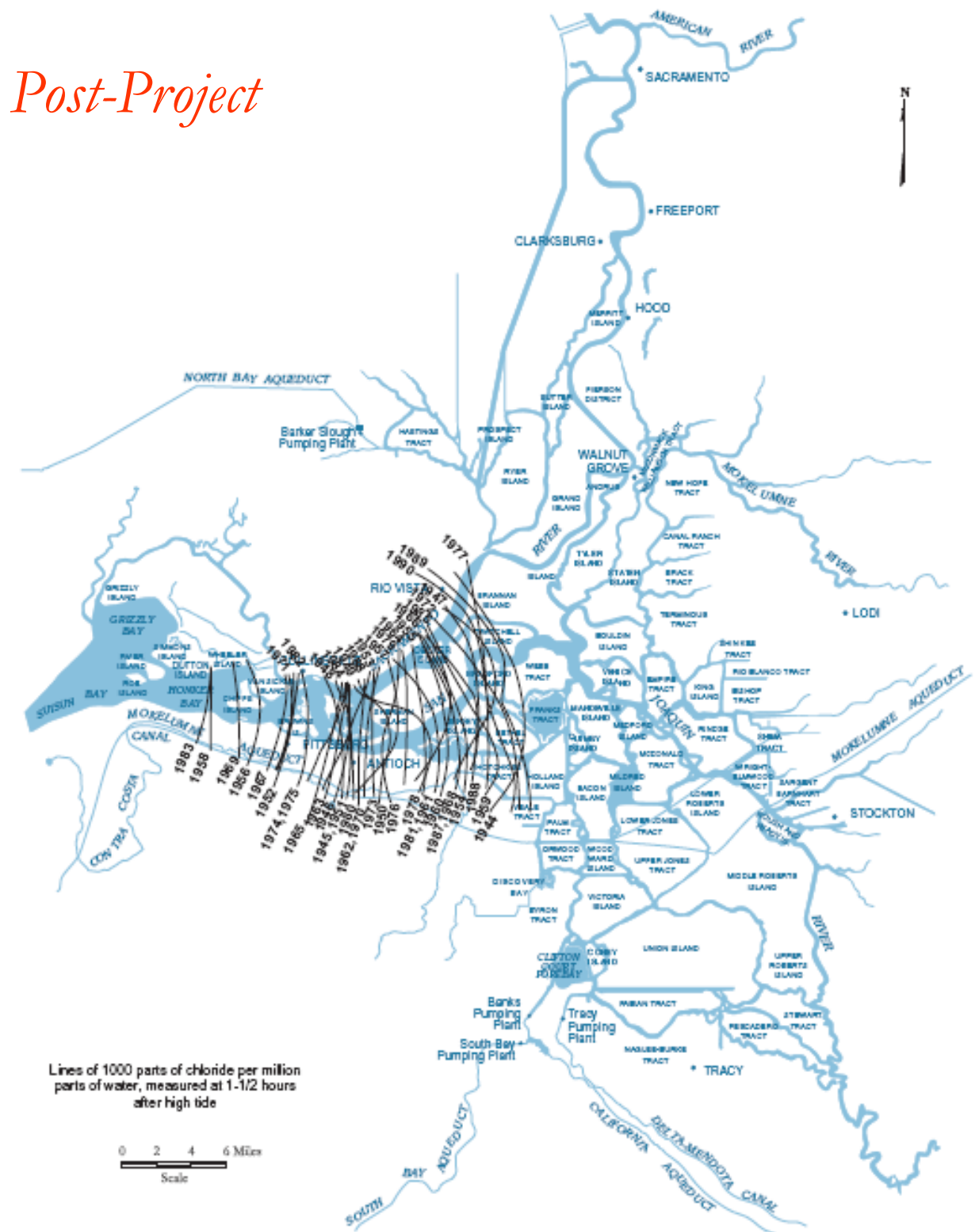
Pre-Project



Source: Department of Water Resources, Sacramento - San Joaquin Delta Atlas, 1993

Figure 4-27 Maximum Salinity Intrusion, 1944-1990

Post-Project

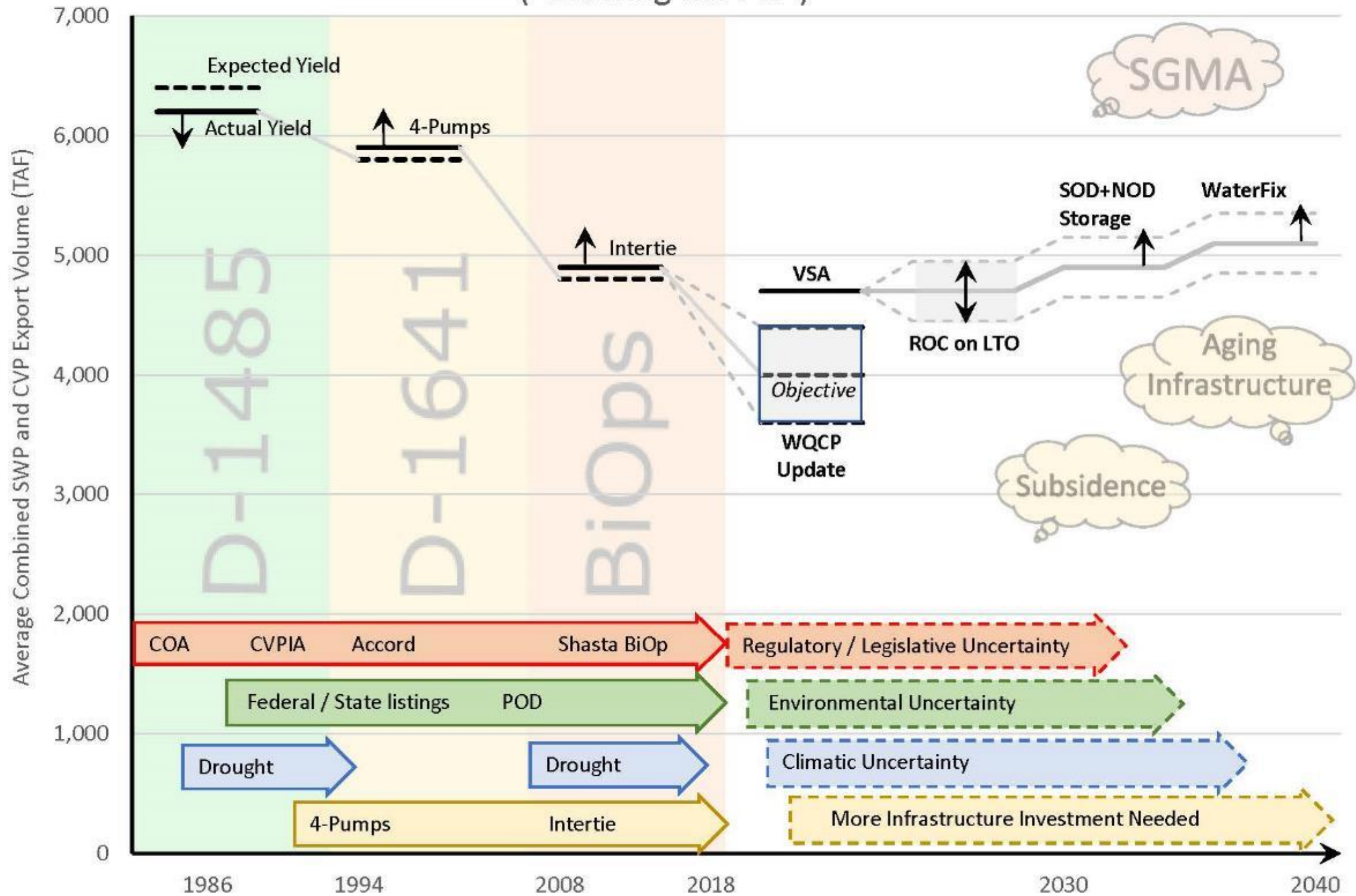


Source: Department of Water Resources, Sacramento - San Joaquin Delta Atlas, 1993

Delta Regulations

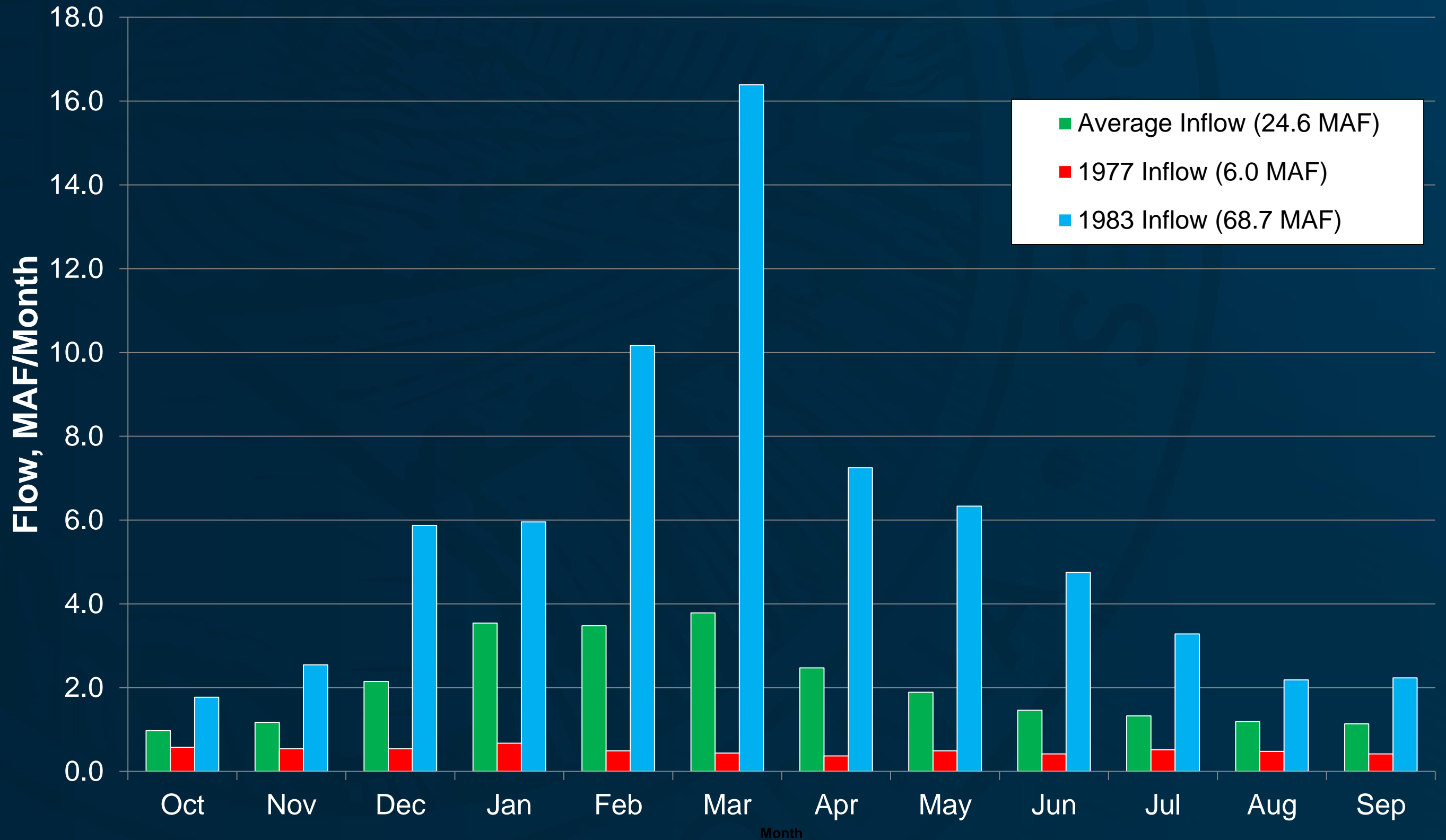
- State Board Salinity and Flow Objectives
 - Municipal and Industrial
 - Agricultural
 - Fish and Wildlife
- Federal Environmental Protections
 - Protections for endangered fish species:
 - Ecological Triggers
 - Range of Flow Targets (Real-Time Observations)

Mitigating Reductions to Collective SWP/CVP Water Supply ("Growing the Pie")

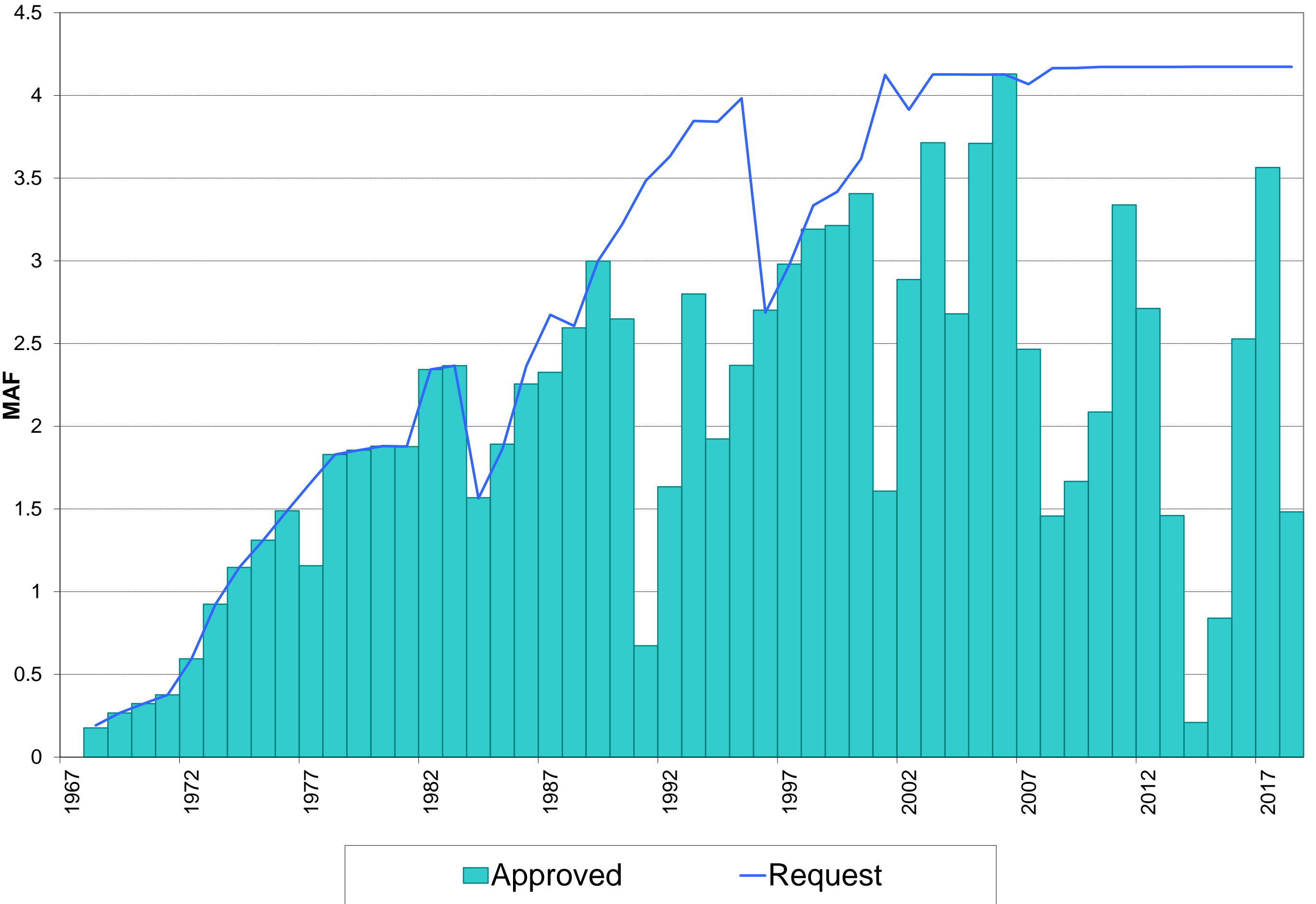


Variability of Runoff

Delta Inflow (WY 1970-2011)



SWP Water Deliveries



Lake Oroville

- Built in the 1960s
- Capacity: 3.5 million acre-ft
- Tallest Dam in US: 770 ft
- Releases to Feather River
 - Water supply
 - Flood control
 - Temperature
 - Instream requirements
 - Bay-Delta flow and water quality



Lake Oroville Outlets

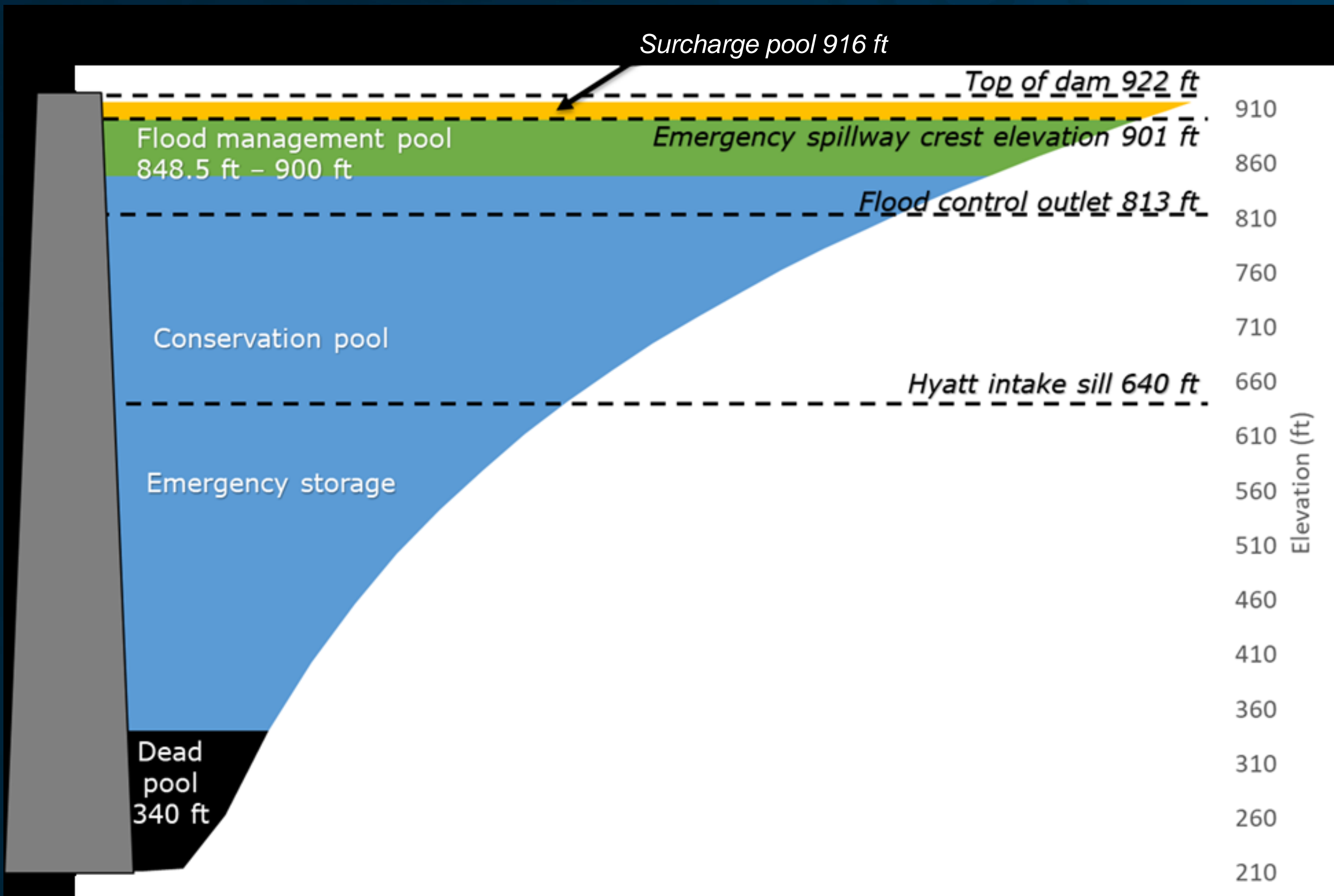


Emergency spillway

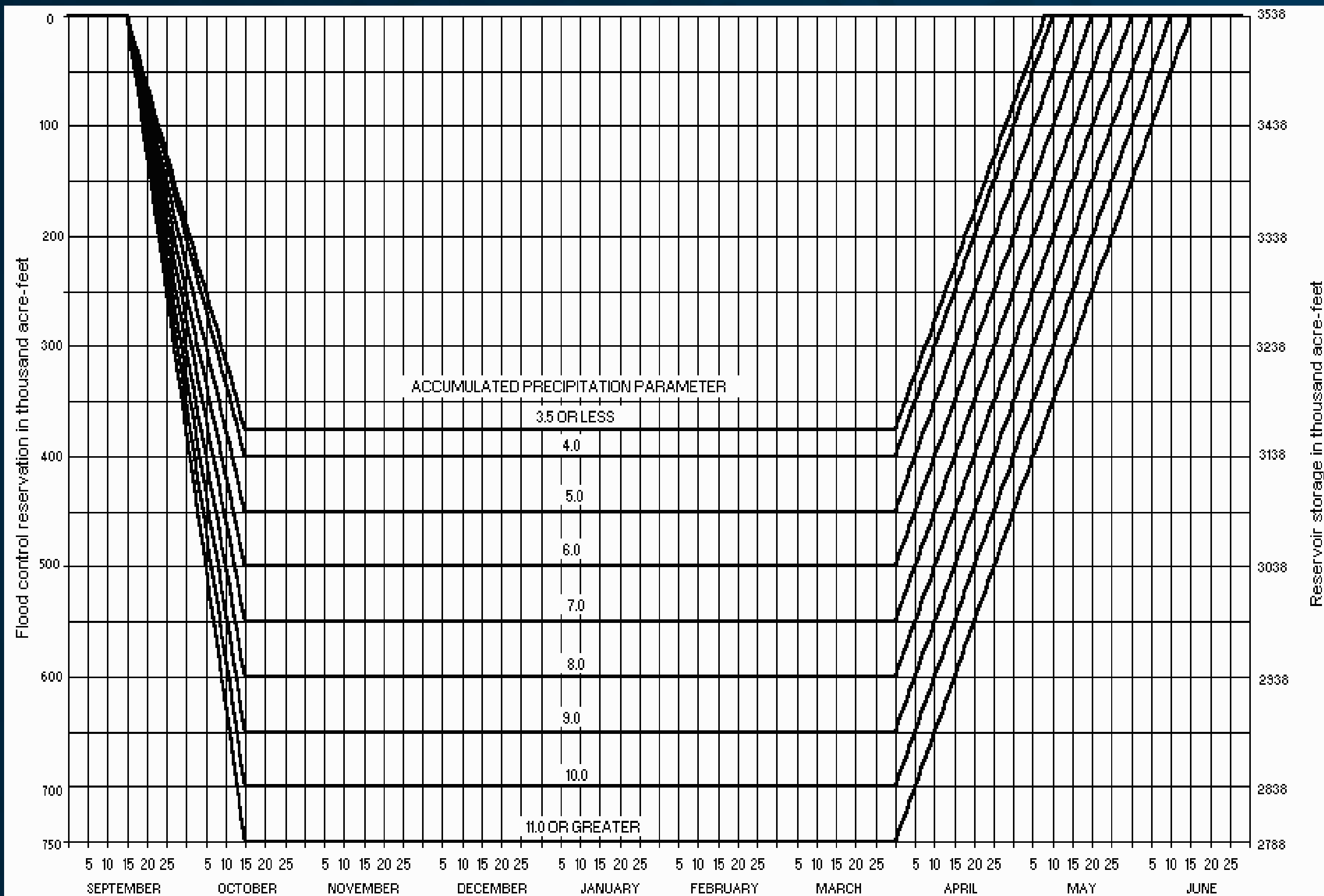
Flood control outlet (FCO)

Hyatt
powerhouse

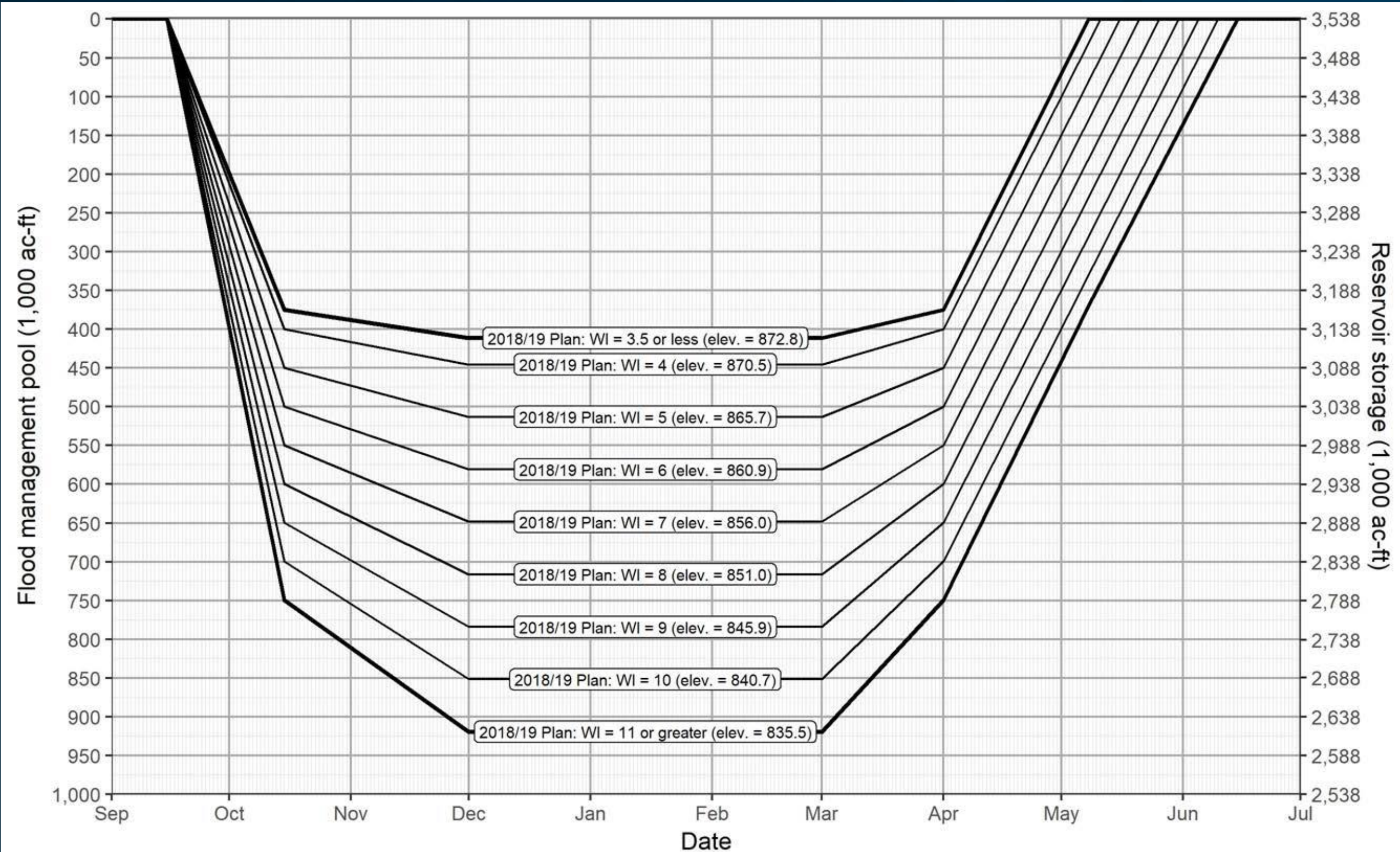
Key Elevations



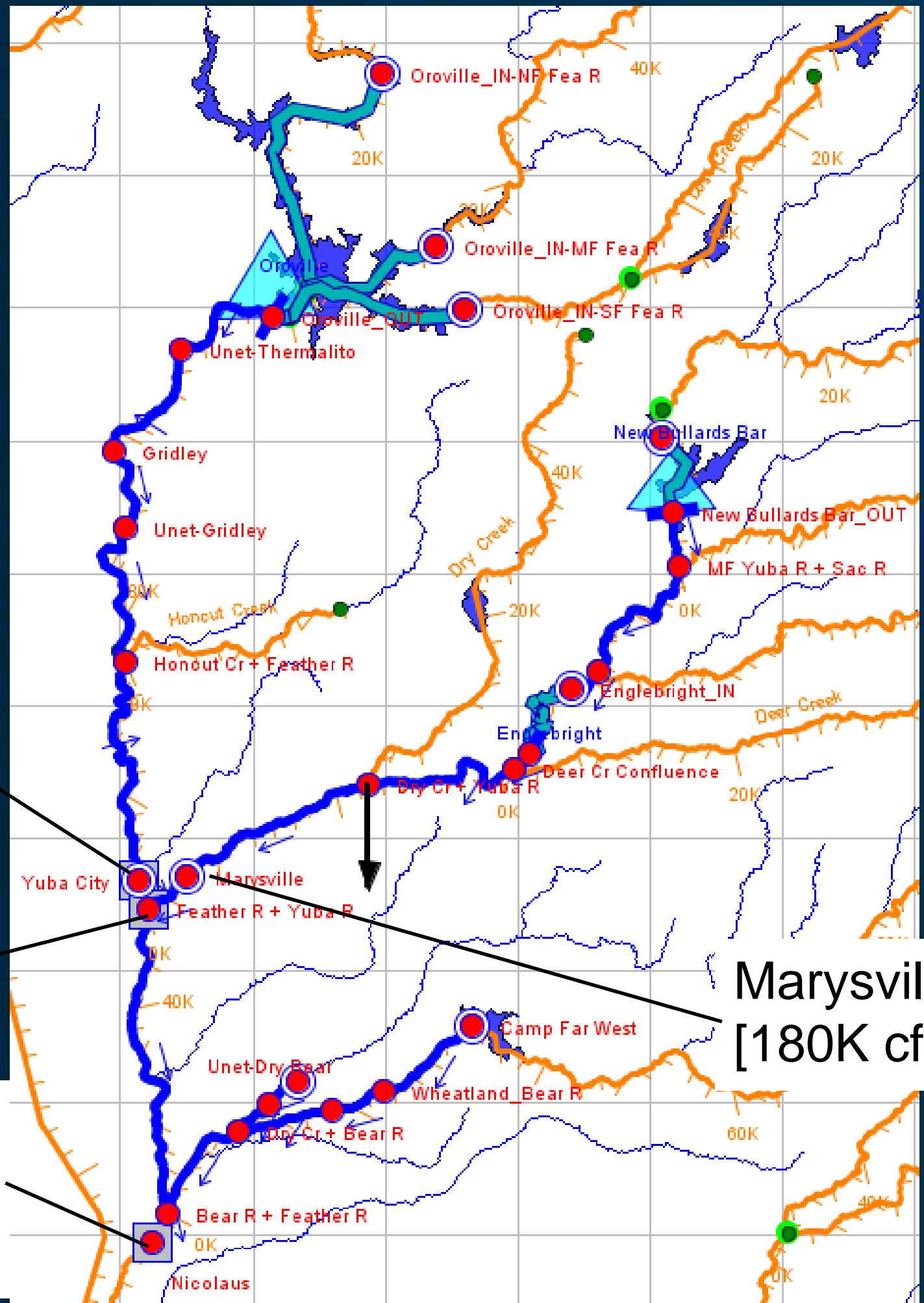
USACE 1970 Flood Control Diagram



2018-2019 Enhanced Flood Pool



Yuba-Feather System



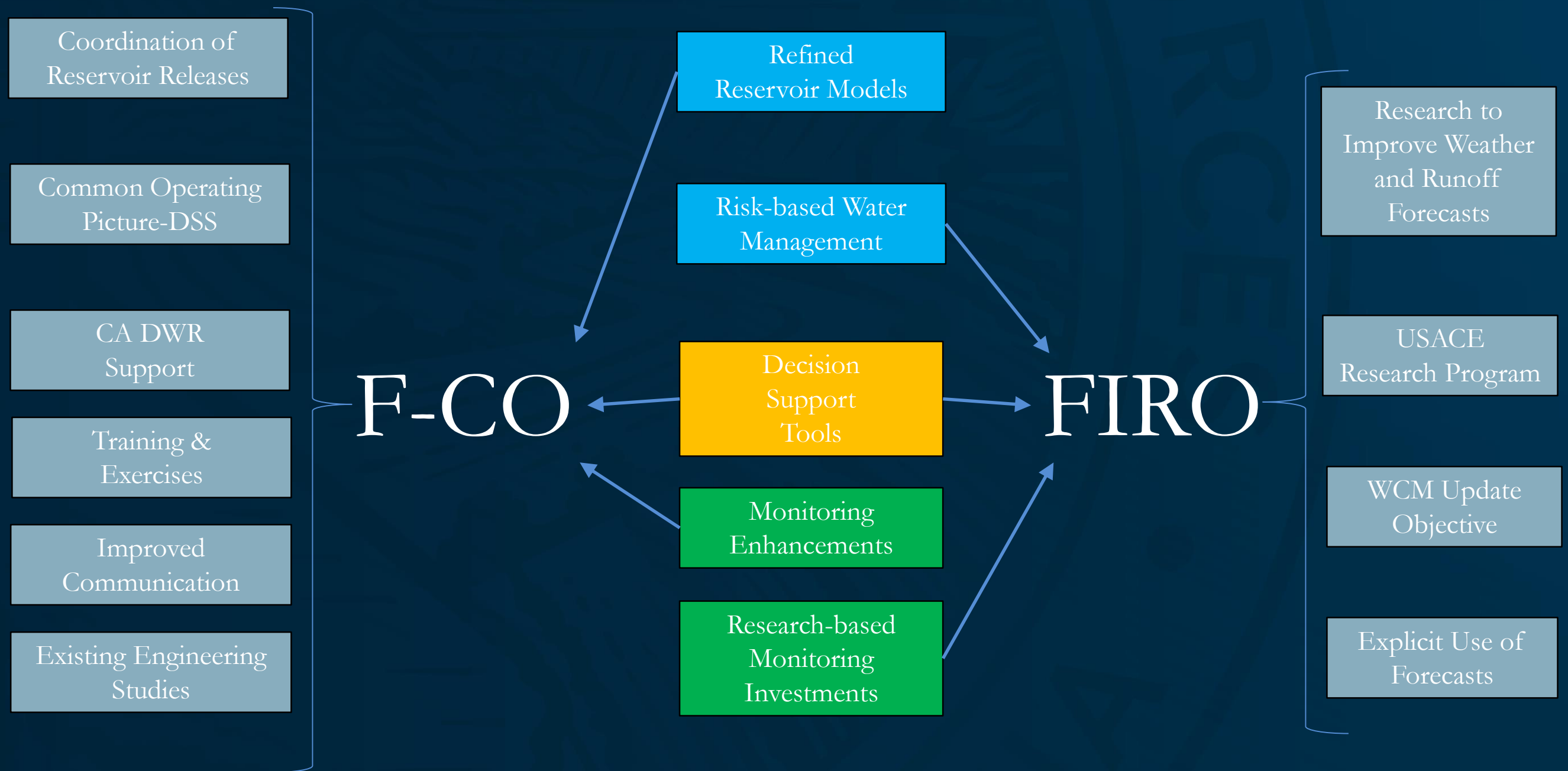
Yuba City
[180K cfs]

Feather-Yuba confluence
[300K cfs]

Marysville
[180K cfs]

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

Integrating Yuba-Feather FCO with FIRO

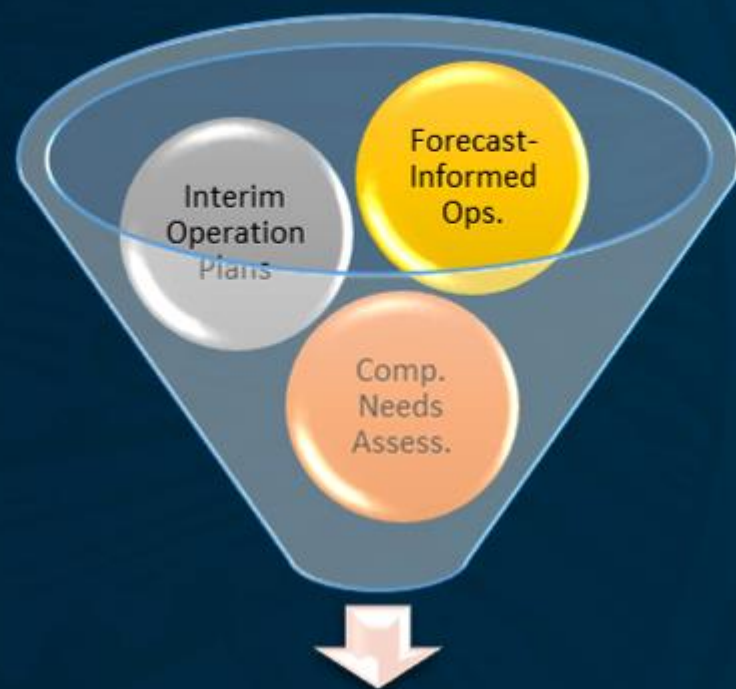


Comprehensive Dam Safety Needs Assessment

- Identification of priorities and appropriate solutions to bolster integrity and resiliency of Oroville Dam to ensure public safety
- Overview by an Independent Review Board of dam safety experts
- Engagement with community stakeholders appointed by local elected officials
- Final report to FERC and DSOD

Next Steps...

- Interim Flood Control Operations Planning
- Completion of the CNA Process – 2020
- Forecast Informed Reservoir Operations Initiative



Updated Water Control Manual