Agenda

- Background on CVP, CVO and Kristin White
- 2022 CVP Water
- 2022 CVP Hydropower
The Central Valley Project (CVP)

- 20 dams & reservoirs
- 500 miles of canals
- 11 powerplants
- 10 pumping plants
- Average annual production
  - About 5 million acre-feet ag delivery (approx. 3 mil acres of farm land)
  - About 600,000 acre-feet M&I supply (about 2 million people)
  - About 4,500 gigawatt hours hydroelectric energy (approximately a quarter is first delivered to Project Use Energy loads)
- Central Valley Operations Office
  - Line authority for directing and integrating CVP water and power operations.
  - 3 Operational divisions: Power, Water and Industrial controls
Overview of CVP/SWP

- Multiple rivers
- Multiple watersheds
- Multiple reservoirs
- Multiple purposes
- Coordinated Delta operations
CVP WY22 Conditions Overview

- Navigating a third dry year with goals of public health and safety, and storage conservation
- On the heels of a dry 2020 and 2021
- Shasta storage currently around 1.8 MAF (47% of avg)
- WY22 meteorology and hydrology whiplash
- Bracing for unprecedented summer/fall Shasta operations
Northern Sierra 8-Station

Precipitation Index for Water Year 2022 – Updated on May 13, 2022 08:35 AM

Note: Monthly totals may not add up to seasonal total because of rounding.

Water Year Monthly totals are calculated based on Daily precipitation data from 12am to 12am PST.

Average

WY 2022

Water Year

Precipitation (inches)

OCT 12.7
NOV 3.1
DEC 14.4
JAN 1.3
FEB 5.3
MAR 1.3
APR 2.8
MAY 4.3
JUN 1.1
JUL 0.5
AUG 0.1
SEP 0.2

Note: The chart shows the precipitation in inches for each month of the Water Year 2022. The bars indicate both the average precipitation and the actual precipitation for each month.
CURRENT RESERVOIR CONDITIONS

CALIFORNIA MAJOR WATER SUPPLY RESERVOIRS

CURRENT CONDITIONS

Midnight - May 12, 2022

LEGEND

- Capacity (TAF)
- Hist Avg
- Historical Average

% of Capacity | % of Hist Avg

- Shasta: 40% | 48%
- Oroville: 55% | 70%
- Folsom: 85% | 110%
- Trinity: 31% | 39%
- Camanche: 52% | 78%
- New Melones: 38% | 61%
- Don Pedro: 64% | 83%
- Cachuma: 45% | 58%
- Castaic: 50% | 58%
- Diamond Valley: 68% | 90%
- Millerton: 71% | 96%
- Pine Flat: 55% | 86%

Updated 05/13/2022 08:18 AM
WY22 Drought Actions

• **Delta:**
  - Requested and received relaxations for delta requirements April 1 – June 30 to limit how much stored water needs to be released for delta needs
  - Backfill West False River Drought Barrier notch to help with summer salinity

• **Upstream Operations**
  - Shasta Temperature Management plan and reduced releases
  - Trinity storage conservation (reduced imports) and temperature management
  - Rely heavily on Folsom and Oroville to maintain delta operations in the summer

• **Allocations:**
  - SWP: Reduced from 15% to 5%, which is primarily meeting public health and safety
  - CVP: 0% agricultural and all M&I reduced to only public health and safety

• **Settlement Contractors:**
  - Feather River: 50% reduction to deliveries
  - Sacramento River: 18% based on availability from Shasta
  - No north-to-south SRSC transfers expected this water year
  - San Joaquin River Exchange Contractors: 75% based primarily on availability from the upper San Joaquin
WY22 Shasta Temperature Mgmt Plan

- Keswick releases set through Interim Operation Plan process
  - Max monthly average releases May through August = 4,500 cfs
- Strategy:
  - Shape available cold water to achieve maximum benefit given shutter capabilities
  - Conserve coldwater for the fall to ensure operations of Livingston Stone National Fish Hatchery
- Process:
  - Plan Approval received in early May
  - Adjust and revise if necessary once Shasta Reservoir stratifies
- Areas of Uncertainty Unique to 2022
  - Flow range below historical lowest summer flows
  - Temperature models not calibrated for this low flow range
  - Downstream public health and safety demands that can not be met from other sources
  - Infrastructure limitations
  - Trinity River imports and Trinity River Temperature Management
Hydropower Operations Update

• Total Generation Average
  • 4,500 GWh: Average over the last 20 years

• Generation (Base Resource)
  • 3,438 GWh: Average over last 20 years
  • 1,211 GWh: 90% Forecast for next 12 months (April report)

• FY 22 Generation Totals To Date
  • 1,064 GWh: Total Day Ahead Scheduled Generation
    • $69.1M: Value of Total Day Ahead Generation as Scheduled
    • $64.95/MWh
  • 356 GWh: Total Day Ahead Scheduled Base Resource
    • $26.6M: Value of Day Ahead Base Resource as Scheduled
    • $74.71/MWh

Reference: Avg. FY 22 LMP $58.12/MWh
Avg. FY 21 LMP $46.48/MWh
Hydropower Operations Update cont.

- Minimum Power Pool & Low Reservoir Operations
  - None of the CVP’s reservoirs are forecasted to reach minimum powerpool; however, some operations may approach it closer than previously experienced.
  - Reclamation therefore will be monitoring low reservoir turbine operations for roughness to avoid or mitigate potentially harmful cavitation damage.
  - NCAO has prepared to inject air into the Trinity turbine to smooth operations at low elevations.

- Outages minimized for summer operations
  - Lengthy outages are being minimized and coordinated with WAPA.
  - Trinity Unit 2 is the only CVP unit out for the summer due to the turbine runner in progress of being replaced.
Hydropower Operations Update cont.

### Capacity Based on Estimated Gross Head (All values in MW)

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</tbody>
</table>

* *Trinity - 2 units available starting in November, due to runner replacement, and contingent on contractor schedule.*

* *Spring Creek - Only 1 unit available starting in October, due to runner replacement, and contingent on contractor schedule.*
Updating Aging Infrastructure

• CVP powerplants
  • Constructed 1940s through 1979

• Life extension and capital improvements
  • Turbine runner replacements
  • Generator rewinds
  • Transformer replacements
  • Excitation replacements
  • Breaker replacements

• SMUD and preference customers have been instrumental towards Reclamation’s progress through advanced customer funding and through committee discussions on Reclamation’s planning of major projects.
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