

Management Plan

Bay-Delta Operations and Forecasting Assumptions used for CVP-SWP Operations

Bay-Delta Conditions and Criteria for CVP-SWP Operations and Forecasting

Note: CVP-SWP operations and forecasting are heavily influenced by the interaction of upstream reservoir operations and regulatory objectives and natural flow conditions into the delta.

Sacramento-San Joaquin Delta

List of Operational Criteria for CVP-SWP consideration

- A) D-1485 Standards as modified by WR95-6 permit changes.
- B) 1995 Delta Water Quality Control Plan Standards.
- C) 1995 Delta Smelt Biological Opinion dated March 6, 1995.
- D) 1993 Winter-Run Biological Opinion as modified by letter of May 17, 1995.
- E) Flexibilities as described in WR95-6.

1995 Delta Water Quality Control Plan Standards, below is a listing of the "significant new" operational standard changes that are incorporated into CVP-SWP operations and forecasting considerations.

Net Delta Outflow Criteria (NDOI)

Minimum monthly average Net Delta Outflow Index (NDOI) (cfs)		
Time Period	Water Year Type (40-30-30)	Outflow (cfs)
Jan.	All	4,500-6,000
Feb.-June	All	X2 criteria
July	Wet, AN	8,000
July	BN	6,500
July	Dry	5,000
July	Critical	4,000

August	Wet, AN, BN	4,000
August	Dry	3,500
August	Critical	3,000
September	All	3,000
October	Wet, AN, BN, Dry	4,000
October	Critical	3,000
Nov. - Dec.	Wet, AN, BN, Dry	4,500
Nov. - Dec.	Critical	3,500

Export/Inflow Ratio Criteria

Month	Export/Inflow
Jan.	65%
Feb.	35% to 45%
Mar. - June	35%
July - Dec.	65%

Delta Cross Channel Gate Operations (DCC)

During the period November to January, the (DCC) will be closed a maximum of 45 days. From February 1 to May 21, the DCC will remain closed. From May 21 to June 15, the DCC may be closed four consecutive days each week, excluding weekends.

San Joaquin River Flows

Year Type (60-20-20)	Feb. - June flows (cfs)	April - May Pulse (cfs)
Wet	2,130 or 3,420	7,330 or 8,620
Above Normal	2,130 or 3,420	5,730 or 7,020
Below Normal	1,420 or 2,280	4,620 or 5,480
Dry	1,420 or 2,280	4,020 or 4,880
Critical	710 or 1,140	3,110 or 3,540

Note: Higher flows provided when the X2 standard requires the positioning west of Chipps Island.

Note: Combined export rate limits; In all yeartypes, during the April-May 30 day pulse period, the maximum combined export rate is 1,500 cfs or 100% of the 3-day running average of the San Joaquin River at Vernalis, whichever is greater.

Delta Smelt 1996 Biological Opinion (additional criteria to 1995 WQCP)

(1) Starting Gate - If the best estimate of the Eight River Index is more than 900 TAF in January, the daily average or 14-day running average EC at Collinsville shall attain 2.64 mmhos/cm or less between February 1 and February 14 for at least 1 day. If the Eight River Index is between 650 and 900 TAF in January, refer the issue to the Ops Group.

(2) San Joaquin River Pulse Flow - The operating criteria in the 1995 WQCP specifies that during the April and May 30-day pulse flow period, combined CVP and SWP exports may be the greater of 1,500 cfs or 100% of the Vernalis flow. Reclamation will pursue acquisition of additional flow (acquired flow) to provide San Joaquin flows at Vernalis during the April and May 30-day pulse in excess of those exported by the CVP and SWP. Any such acquired flows will be identified as being in excess of those attributable to CVP releases, unregulated accretions or unstorable flows. Through the CALFED process and other associated discussions, Reclamation and DWR will encourage measures that will minimize the diversions of acquired flows during the 30-day pulse flow period. An Operations Plan shall be submitted to the Service by April 1 of each year describing Reclamation's and DWR's Delta Operations and forecasted San Joaquin River flows during the April and May 30-day pulse flow. The objective of this Operations forecast is to provide a flow at Vernalis that exceeds CVP plus SWP export by an amount equal to 50 percent of the identified pulse flow associated with the recently available forecasted San Joaquin 60/20/20 Index (at 90 percent of exceedance). In an effort to accomplish this goal, Reclamation and DWR will also consider re-allocation within the Principles for Agreement or other means to provide Vernalis flows or Delta exports consistent with this objective.

Pumping Capacity Considerations for CVP-SWP facilities for operational purposes

A. Tracy Pumping Plant/DMC - The Tracy Pumping Plant and DMC facilities were designed to convey approximately 4,600 cfs for CVP purposes. Over the years the capacity of the DMC facilities, especially in the Tracy PP to O'Neil forebay section, has diminished to the point that to realize 4,600 cfs at Tracy Pumping Plant is rare. For CVP forecasting purposes, the capacity of the Tracy Pumping Plant/DMC facilities is assumed to be approximately 4,200 cfs in the traditional non-irrigation season and approximately 4,500 cfs in the traditional irrigation season.

B. Contra Costa Canal - CVP-SWP operations and forecasts include consideration of Contra Costa Canal demands and operations. In the near future with the addition of the Los Vaqueros facilities, CVP-SWP forecasts will coordinate with CCWD the new operational considerations.

C. North Bay Aquaduct - CVP-SWP operations and forecasts include consideration of North Bay Aquaduct demands and operations.

D. Banks Pumping Plant - CVP-SWP operations and forecasts include consideration of the capabilities of Banks Pumping Plant per the Corps October 13, 1981 criteria. The Corps criteria allows for increased pumping capacity at Banks pumping plant during the period of December 15

to March 15 when San Joaquin River flows are greater than 1000 cfs. The capacity of Banks pumping plant increases above the standard 6680 cfs limit by a ratio of one third of the San Joaquin River flow above 1000 cfs.

E. Flexibility under WR95-06 - The SWRCB has granted limited flexibility to CVP-SWP operations (through the Ops Group process) to utilize each parties delta facilities in order to accomplish two general objectives; 1) to help manage daily export operations to improve fish protections. 2) to help accomplish CVP-SWP reoperation in the delta for fish protection purposes, with the provision that such reoperation is accomplished with "no increase in annual exports in absence of the coordinated operations", and "the shift in exports does not adversely affect any legal user of water or cause significant environmental effects on fish and wildlife or water quality".

F. CVP-SWP operations and forecasts are influenced by actions and operational objectives that are not necessarily part of a regulatory framework. Examples can include, maintenance and outage of system facilities, ESA take operations and response, and short-term operations for unique or special considerations.