

# System Reoperation Study

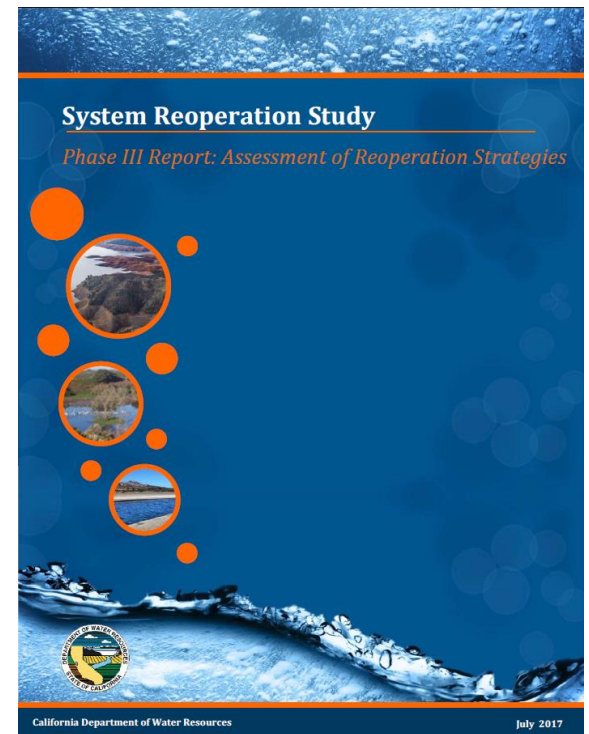
## Phase III Report: Assessment of Reoperation Strategies

The Department of Water Resources (DWR) has released the System Reoperation Study Phase III Report, *Assessment of Reoperation Strategies* (Phase III Report). For Phase III, DWR evaluated reoperation strategies in greater detail for Lakes Shasta, Oroville and McClure with their associated groundwater basins to concurrently improve water supply reliability and flood protection and provide for ecosystem protection and restoration. Reoperation strategies included groundwater conjunctive management, supplemental ecosystem flows, and forecast based operations. The Phase III Report also describes the potential benefits of operating the State Water Project and Central Valley Project as a single project with storage sharing and joint point of diversion.

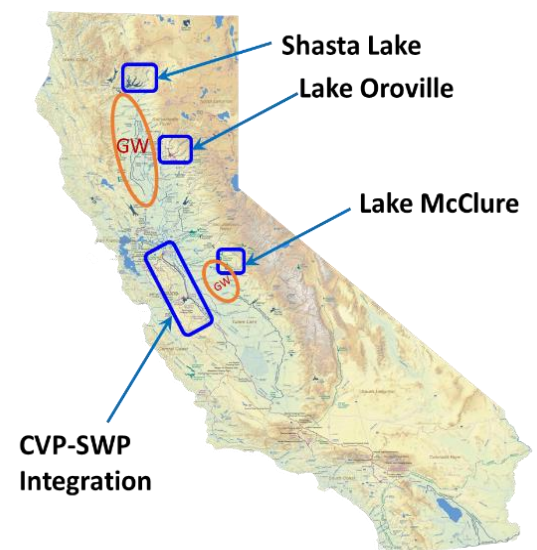
Legislation in 2008 authorized and directed DWR to conduct studies to identify potential options for the reoperation of the state's flood protection and water supply systems that optimize the use of existing facilities and groundwater storage capacity to achieve the objectives of increasing water supply reliability and flood protection, improving water quality, and providing for ecosystem protection and restoration.

For this study, DWR developed an analytical framework with tools/models to guide the formulation and evaluation of various combinations of reoperation strategies. Water agencies and system owners/operators can apply this reoperation framework/tools to formulate their own range of reservoir and system reoperation scenarios to evaluate features like:

- Public benefits associated with proposed reservoir reoperation projects for the Proposition 1 Water Storage Investment Program
- Surface water available for groundwater replenishment to help meet requirements of the Sustainable Groundwater Management Act
- Additional flow releases from existing reservoirs to improve ecological conditions in the Delta and upstream watersheds to inform the Bay-Delta Water Quality Control Plan Update and Voluntary Settlement Agreements



### Phase III Reoperation Strategies



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## Key Findings

1. Benefits are limited from reoperating Lake Oroville, Shasta Lake, and Lake McClure individually, and with combined reoperation of Lake Oroville and Shasta Lake, relative to the three reoperation objectives – water supply reliability, flood protection, and ecosystem protection and restoration.
2. Central Valley reservoirs are already fairly optimized to meet existing flood and regulatory requirements, and contractual commitments. Study benefits may be overstated because operators occasionally apply these reoperation strategies.
3. Operating the State Water Project and Central Valley Project as a single project provides incremental water supply reliability and ecosystem restoration benefits, and combined average annual water deliveries could increase by 100-150 thousand acre-feet per year.
4. Reoperation benefits were similar with existing or new Delta conveyance and under current and projected future climate conditions.

## Shasta and Oroville Reoperation Results

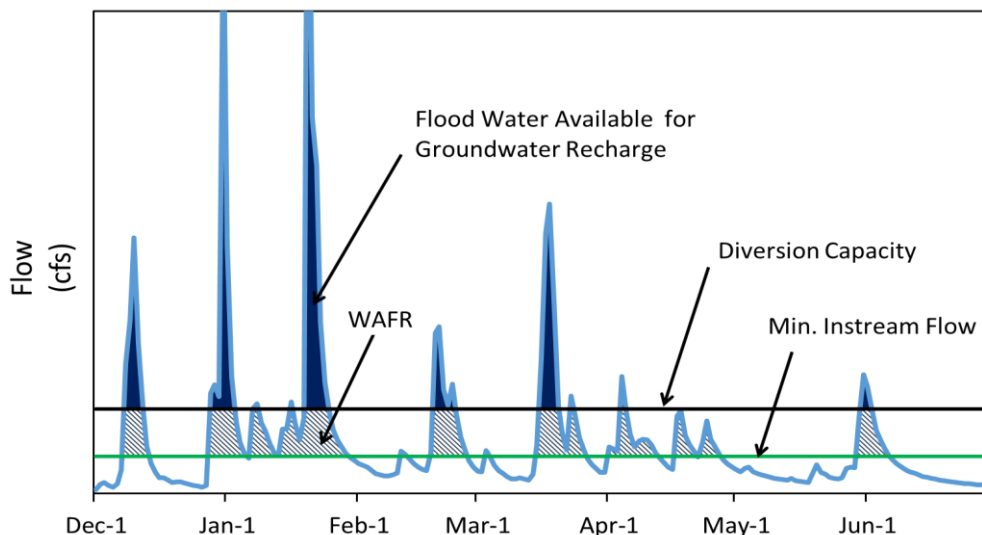
Reoperation Components	Reoperation	Benefit	Measure
Conjunctive Management		Water Supply	37 TAF/yr
Supplemental Ecosystem Flow		Ecosystem Flow	80 TAF/yr
Forecast Based Operations		Flood Stage Reduction	0.1 Feet

## CVP – SWP Integrated Operations Results

Reoperation Components	Reoperation	Benefit	Measure
Storage Sharing		Water Supply	100 – 150 TAF/yr
Joint Point of Diversion			

## Recommendations for Next Phase

1. Evaluate potential for using flood water for managed groundwater recharge on farmland and working landscapes for flood protection, drought preparedness, aquifer remediation, and ecosystem restoration.
2. Evaluate existing flood operating rules of the reservoirs under changing hydrology.
3. Assess feasibility of existing reservoir spillways and outlets to pass floodwater safely with changing hydrology.
4. Identify system reoperation implementation challenges and opportunities.



Typical Hydrograph