

Water Storage Investment Program Concept Paper Form

Please complete the questions below and return your completed concept paper by email to cwc@water.ca.gov by 5:00 p.m. on March 31, 2016. Completed concept papers should not exceed four pages.

Contact Information

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Agency/Organization Name: Alameda County Water District and Zone 7 Water Agency (and potential partner: Santa Clara Valley Water District – all three collectively referred to as the South Bay Aqueduct Contractors)
Agency Type (select one): <input checked="" type="checkbox"/> Public Agency <input type="checkbox"/> Nonprofit Organization <input type="checkbox"/> Public Utility <input type="checkbox"/> Tribe <input type="checkbox"/> Mutual Water Company <input type="checkbox"/> Local Joint Powers Authority <input type="checkbox"/> Other:

Project Information

Project Name: Lake Del Valle Reservoir Water Supply Storage Expansion
Project Type: <input type="checkbox"/> CALFED Surface Storage <input type="checkbox"/> Groundwater Storage <input type="checkbox"/> Groundwater Contamination Prevention or Remediation <input type="checkbox"/> Conjunctive Use <input checked="" type="checkbox"/> Reservoir Reoperation <input type="checkbox"/> Local Surface Storage <input checked="" type="checkbox"/> Regional Surface Storage <input type="checkbox"/> Other:
Estimated Project Cost: \$150M
Estimated WSIP Funding Request: \$75M
Please describe your project, including location, water source, facilities, and operations: <u>Background:</u> Alameda County Water District (ACWD), Santa Clara Valley Water District (SCVWD), and the Alameda County Water Conservation District, Zone 7 Water Agency (Zone 7) are jointly known as the South Bay Aqueduct (SBA) Contractors. Together, these three agencies have a maximum annual SBA water entitlement of 222,619 acre-feet, and provide drinking water and manage water resources for 2,500,000 people in the San Francisco Bay Area. The SBA was the first delivery system completed under the State Water Project (SWP), and has been conveying water from the California Aqueduct to Alameda County and Santa Clara County since 1965. Lake Del Valle Reservoir (Reservoir) was created in 1968 as an off-stream storage facility for the SBA by constructing the 235-foot-high Del Valle Dam, impounding a maximum storage capacity of 77,100 acre-feet which includes a flood storage reservation ranging from 25,000 to 40,000 acre-feet. The Reservoir is also home to the 5,200-acre Del Valle Regional Park, operated by the East Bay Regional Park District (EBRPD).

Project Description:

The proposed Lake Del Valle Reservoir Water Supply Storage Expansion Project (Project) will consider modernizing the flood management rules such that a greater portion of the existing reservoir capacity can be used to capture additional local supply available under existing water rights and to store additional emergency water supply while maintaining necessary flood protection. A Forecast Informed Reservoir Operation (FIRO) would be implemented and would use modeling, forecasting tools and improved information to improve flood-control and water supply operations.

FIRO would require the relocation and enhancement of existing EBRPD facilities to higher elevations or floatable structures in order to accommodate the water storage goals with an aim of improving recreational opportunities. Otherwise, the Del Valle Dam can remain unaltered due to an excess amount of flood protection currently being provided by the dam. Additional storage and Reservoir reoperations could help meet the following objectives while maintaining acceptable levels of flood protection benefits:

- Improve regional water supply reliability for all SBA Contractors
- Improve SBA Contractors treatment plant source water quality
- Improve regional conjunctive use for all SBA Contractors
- Increase emergency water supplies for all SBA Contractors
- Enhance ecosystem benefits to the Sacramento-San Joaquin Delta
- Create new recreational opportunities
- Improve resilience to climate change and Delta pumping restrictions

Per Water Code section 79753, the Commission may only fund the public benefits of water storage projects. Further, ecosystem improvements must make up 50% of the funded public benefits (Water Code section 79756(b)). What public benefits does your project provide? (select all that apply):

- Ecosystem Improvements Water Quality Improvements Flood Control
 Emergency Response Recreation

Please describe the magnitude of the public benefits and how the project will be operated to provide the public benefits:

The Project will provide the public benefits described below with an estimated magnitude of public benefits of \$75M. This project builds on a previous \$19M Proposition 84 Integrated Regional Water Management grant awarded to the San Francisco Bay Region for Atmospheric Quantitative Precipitation Information (AQPI) systems that explore large-scale, long-range precipitation predictions that help inform reservoir operation and flood risk estimation. The Project facilities will be operated with an adaptive management approach to maintain public benefits in the midst of ever-changing conditions such as climate, regulatory environment, Delta water supply availability, and ecosystem requirements.

Ecosystem Benefits: The Project would increase the operational flexibility of the SWP to manage pumping from the south Delta to minimize entrainment and to meet water quality and flow objectives. Extra water that can be sent to the Reservoir when it is safe to pump from the south Delta, typically during high flow and precipitation events, will translate into less pumping needs during times when sensitive fish are near the pumps. The increased Reservoir storage and related pumping flexibility improves both fishery conditions as well as water supply reliability. FIRO will also allow for a greater amount of local run-off to be captured and held, further reducing pumping from Delta needed to fill the Reservoir. The Project will allow the Department of Water Resources (DWR) to minimize pumping during environmentally sensitive time periods and, instead, draw from storage.

Emergency Supplies: The Project has the potential to more than double emergency storage from a current maximum of 30,000 AF to as much as 67,000AF. This storage would be available for emergencies including earthquakes, Delta levee failures, and droughts. This is especially critical for SBA Contractors as Lake Del Valle is the only storage available along the SBA leg of the State Water Project.

Water Quality: By maintaining an overall higher water level, additional Reservoir storage would help combat the existence of harmful algal blooms that occur when Reservoir water levels are low. This additional water will also help the SBA Contractors with the treatability of source water from the Delta, by allowing increased blending of Delta and local supplies in the SBA to help manage regulated disinfection byproducts. This improvement in water quality would reduce treatment efforts required by SBA Contractors for consumption as well as improve water quality for recreational purposes.

Recreation: The Lake Del Valle Watershed includes public recreational facilities that provide opportunities for boating, fishing, camping, hiking, and education on 5,200 acres of managed land. The Project would create new recreational opportunities, providing increased boating and fishing areas. Enhanced new facilities would be constructed above the proposed new water elevation to replace those currently located near the water's edge (i.e. marina, boat ramps, campgrounds, etc.). Better water quality should also translate into a reduction in lake closures and use restrictions due to harmful algae blooms.

Flood Control: A FIRO management strategy will allow the Reservoir and its antiquated flood management rules, developed in the 1960s, to adapt to changing weather patterns anticipated to occur as a result of climate change. By relocating recreational facilities, Lake Del Valle will be better equipped to handle changed rainfall run-off patterns and maintain flood protection without reducing local emergency water storage.

Water Code section 79752 requires that funded projects provide measurable improvements to the Delta ecosystem or to the tributaries of the Delta. Please describe how your project provides ecosystem improvements in the Delta or tributaries to the Delta:

The Project would increase the operational flexibility of the SWP to manage pumping from the south Delta to minimize entrainment and meet water quality and flow objectives. The additional water able to be stored in Lake Del Valle will result in less pumping during times when sensitive fish are near the pumps because pumping will typically only need to occur from the south Delta during high flow and precipitation events. This FIRO management strategy improves both fishery conditions as well as water supply reliability. The ability to capture and hold a greater amount of local run-off will similarly reduce the need for Delta pumping to fill the reservoir during spring months when the lake is being prepared for summer recreation activities. In short, the extra water in storage in the Reservoir will allow DWR to minimize pumping during environmentally sensitive time periods and instead draw from storage.

Water Code sections 79755 and 79757 require the Commission to make a finding that a project will advance the long-term objectives of restoring ecological health and improving water management for beneficial uses in the Delta prior to allocating funding for a project. Please describe how your project could help advance the long-term objectives of restoring ecological health and improving water management for beneficial uses in the Delta:

The Project would increase the operational flexibility of the SWP to manage pumping from the south Delta to minimize entrainment and meet water quality and flow objectives. The additional water able to be stored in Lake Del Valle could result in less pumping during times when sensitive fish species are near the pumps, as additional water storage reserves in Lake Del Valle could offset pumping from Banks pumping plant. The additional storage resulting from this project improves both fishery conditions as well as water supply reliability and is in line with the long-term objective of restoring health and improving water management for beneficial uses in the Delta.

Please describe any other benefits provided by your project, such as water supply reliability benefits, and the potential beneficiaries:

Improved Regional Water Supply Reliability: By increasing the operational flexibility of the SWP and increasing opportunities to store water south of the Delta when it is safe to pump from the south Delta, there will be measurable improvements to key regions of the San Francisco Bay Area, including the 2,500,000 people and major industries served by the SBA. The increased storage would increase supplies to the SBA Contractors during dry periods using water stored during wetter periods. Facilities and operations would be adaptively managed in response to local climatic and Delta conditions to minimize impacts to fisheries while ensuring a more reliable and cleaner supply of water to the people of the San Francisco Bay Area.

As learned during the 2014 drought, SWP contractors in the Bay Area are underserved with emergency storage. The Project has the potential to more than double emergency storage in Lake Del Valle, thereby preparing the Bay Area for a disruption in the Delta such as an earthquake or flood.

Improved Regional Conjunctive Use: Each of the SBA Contractors rely on groundwater to meet a portion of their demands. Coordinating the Project operations with their respective groundwater operations and other independent recharge projects would lead to improved conjunctive use throughout the region and improvements in regional groundwater management.

Improved Operation of the State Water System: The Project would increase SBA's operational flexibility and, therefore, could improve the ability of the SWP to meet demands and regulatory requirements.

Potential Beneficiaries: SBA Contractors (Alameda County Water District, Santa Clara Valley Water District, and Zone 7 Water Agency), East Bay Regional Parks District, DWR.