



HETCH HETCHY
WATER SYSTEM
IMPROVEMENT
PROGRAM

Calaveras Dam Replacement Project

Fact Sheet



Hetch Hetchy
Regional
Water
System

Spring 2015

www.sfwater.org/sunolvalley

866-973-1476



Project Background

The San Francisco Public Utilities Commission (SFPUC), owner and operator of the Hetch Hetchy Regional Water System, is building a new dam to replace the existing Calaveras Dam. The Calaveras Reservoir, impounded by Calaveras Dam, is our system's largest drinking water reservoir in the local Bay Area. When full, it provides more than half of our Bay Area storage capacity for 2.6 million customers. The existing earth fill dam is 90 years old and is located within 1,500 feet of the active Calaveras Earthquake Fault. In 2001, the SFPUC lowered water levels in the reservoir to less than 40 percent of normal operating capacity in response to seismic concerns. The Calaveras Dam Replacement Project is the largest project of the \$4.8 billion Water System Improvement Program (WSIP) to repair, replace, and seismically upgrade key components of the Hetch Hetchy Regional Water System.

Project Update

Construction began in 2011 to build a new earth and rock fill dam adjacent to the existing dam. To date, the Contractor has moved over six million cubic yards of earth and rock materials and started to construct the new dam. Crews have constructed a new shaft and five adits (tunnels) which connect the outlet pipelines to the reservoir. We have completed grouting operations on the right abutment and started grouting work on the left abutment. Over 200,000 pounds of cement grout have already been injected into the left abutment. Major work on the new concrete spillway has begun. Over 32,000 cubic yards of concrete has already been placed in the new spillway structure. As of April 2015, the project is approximately 66% complete.

Construction Began: August 2011

Projected Completion: Late 2018

Project Cost: \$503M

Construction Management: Black & Veatch

Designer: URS/AECOM

Construction Contractor:

Joint Venture of Dragados USA, Flatiron West Inc.
and Sukut Construction



Rendering of replacement dam

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Geological Conditions

In June 2012, we discovered some unexpected geologic features during excavation of the left abutment area. These uncovered geologic features were not visible at the ground surface during the extensive geotechnical investigation work performed during the planning and design phases of the project. The findings resulted in over 3 million cubic yards of additional material that had to be moved in order to ensure the long-term stability of the slope during the performance life of the dam. More than 10 million total cubic yards of excavation and earthwork placement is required to construct the new dam.



View of Calaveras Dam Site
(from right side of valley)

Project Details

The project consists of building a new zoned earth and rock fill dam immediately downstream of the existing dam. This work will restore the Calaveras Reservoir to its historic capacity. The reservoir provides approximately half of the Hetch Hetchy Regional Water System's local Bay Area water storage. This storage is crucial to providing adequate water to our customers in times of drought and when Sierra Nevada resources are not available.

- The new dam will have a structural height of **220 feet**, a crest length of **1,210 feet**, and a width of **80 feet** at the crest and **1,180 feet** at the base
- More than **10 million cubic yards of excavation** is required to construct the new dam. This is equivalent to more than 1,550 football fields buried one yard deep. Approximately 3.5 million cubic yards will go into the construction of the new dam, including a buttress fill to stabilize an existing landslide
- The **new spillway will be 1,550 feet long** utilizing 40,000 cubic yards of concrete
- Upon completion, the Calaveras Reservoir will be restored to its historic nominal storage capacity of **96,850 acre feet (31 billion gallons)**
- The new dam will allow us to **release water into Alameda Creek** in a manner that controls water temperatures and flow rates depending upon the life cycle needs of the fish. We will also install fish screens and a fish ladder at the Alameda Creek Diversion Dam to **support the restoration of Steelhead Trout** to the Alameda Creek Watershed
- A **new intake/outlet shaft tower** will be constructed, consisting of a 20-foot diameter by 163 foot deep vertical shaft and three new adit tunnels. This inlet/outlet structure will convey water to and from the reservoir through a **72-inch diameter steel lined tunnel** and a **78 inch diameter pipeline** downstream

Although 90 percent of the materials for the new dam will come from on-site borrow areas, approximately 300,000 cubic yards of sands and gravels will need to be imported to the site for construction of the internal filters and drains within the zoned embankment dam.

Future Road Closure

The SFPUC has received permission from Alameda and Santa Clara Counties to temporarily close Calaveras Road south of Geary Road to the Alameda County line for an 18 month period starting sometime in mid-2016 at the earliest, on weekdays only. The closure is necessary to protect the safety of the public on the road, while large trucks haul sands and gravels to the site.

Visit our website at sfwater.org/sunolvalley to stay updated on road closure dates or email mle@sfwater.org to receive email notifications

For more information

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