



HETCH HETCHY  
WATER SYSTEM  
IMPROVEMENT  
PROGRAM

## Calaveras Dam Replacement Project

# Media Fact Sheet



Hetch Hetchy  
Regional  
Water  
System

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[www.sfwater.org/sunolvalley](http://www.sfwater.org/sunolvalley)

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### Calaveras Dam Replacement Project Spillway Completion

Work has been underway to build a new dam to replace the existing Calaveras Dam in the East Bay since 2011. Undertaken by the San Francisco Public Utilities Commission (SFPUC), the Calaveras Dam Replacement Project is over 70% Complete. The existing earthen dam is over 90 years old and is seismically unreliable. The reservoir the dam impounds – Calaveras Reservoir – stores approximately 50% of our Hetch Hetchy Regional Water System’s San Francisco Bay Area water storage when it is full. Currently the reservoir is below 30% capacity. This supply is crucial during emergencies and times of drought.

Completing the new Calaveras Dam is extremely important for the long term reliability of the Hetch Hetchy Regional Water System and the 2.6 million Bay Area residents that rely on it. The San Francisco Public Utilities Commission moved one giant step closer to that goal with the completion of the spillway for the new dam. Now that the spillway is complete, final preparations for the construction of the dam itself can begin. Construction of the dam will begin in summer 2016, and the entire project is expected to be complete in mid-2019.

#### *What’s the Spillway for?*

The spillway is an important safety feature for the dam that impounds water behind it to prevent the dam from overtopping or suffering damage during a flood. If reservoir levels were to reach a high level, the structure is used to control the release of flows from the Calaveras Dam into the downstream area of Calaveras Creek, without causing damage to the dam.

#### *About the Calaveras Dam Spillway*

Because of its crucial function in dam safety, it’s important to make sure that the spillway structure stays intact during an earthquake on the nearby Calaveras Fault. Construction crews drilled 1,825 anchors approximately 25 feet into the rock around the spillway to provide support and prevent damage to the structure during a 7.25 maximum credible earthquake on the Calaveras fault.

After reinforcing the hillside around the spillway, crews began to pour the concrete to form individual panel sections, or slabs. The spillway contains a total of 170 slabs. The slabs were strengthened with reinforcing steel bars and the entire structure is anchored to the bedrock to resist movement during an earthquake.

**Project Construction Began:** August 2011  
**Construction Completion:** Mid 2019  
**Project Cost:** \$810M  
**Construction Management:** Black & Veatch  
**Designer:** AECOM / URS  
**Construction Contractor:** Joint Venture of Dragados USA, Flatiron West Inc. and Sukut Construction

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**NEXT PAGE (OVER)**

### Cool Concrete

A total of 50,000 cubic yards of concrete, equivalent to one football field filled six feet-deep, was used to build the spillway. All of the concrete was supplied from an on-site concrete batch plant. The quality of the concrete used in the structure was crucial. It had to be kept at a cool temperature while it cured in order to prevent cracking. Sunol Valley in summer is anything but cool. That means crews often began cement pours at 2:00 a.m. in the morning, the coolest time of the day.

### Not Simply a Straight Shot Down

The Calaveras Dam Spillway is not simply a straight line down to Calaveras Creek below. The energy of spilling water must be dissipated at the stilling basin in order to protect the flora and fauna located downstream.

The spillway consists of three major sections; the **upper spillway** where flood water from the reservoir is collected before entering the **spillway chute**, a 30% downgrade, and emptying into a large **stilling basin**. The stilling basin slows the water flow before discharging into Calaveras Creek.

Because the new spillway is 40 feet deep, it prevents workers from accessing the new future dam. Therefore, crews constructed a bridge across the spillway to be used when the new dam is completed.

### Calaveras Dam Spillway by the Numbers

- Construction on the new earth and rock-fill Calaveras Dam began in August 2011
- Construction of the concrete spillway began in March 2014 and was completed in April 2016
- The new spillway is:
  - 1,550 feet long
  - Varies between 60 feet to 80 feet wide, the width of a six to eight lane freeway
  - The spillway walls are 40 feet tall
- The new spillway has the capacity for three times of the flow of the old spillway
- The spillway was built using over 50,000 cubic yards of concrete, equivalent to a football field filled six feet deep
- 1,825 anchors of solid steel rods were drilled about 25 feet into the rock around the spillway to provide support and prevent damage to the structure during seismic activity
- A total of 100,000 working hours went into the construction of the new spillway

### Water System Improvement Program

Construction to build a new earth and rock-fill dam next to the existing Calaveras Dam began in 2011. Construction of the \$810 million project is expected to be complete in mid-2019. 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. The San Francisco Public Utilities Commission, together with our 26 wholesale customers, launched the WSIP in 2002. The WSIP is more than 90% complete, and is one of the largest water infrastructure projects in the country.



For project information  
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