



CASTAIC DAM MODERNIZATION PROGRAM

CASTAIC DAM AND LAKE are located 45 miles northwest of Los Angeles and provide water for the greater LA area. The dam was built between 1965 and 1974 as part of the California Department of Water Resources (DWR) State Water Project (SWP).

DWR is modernizing its SWP portfolio across the state. This includes identifying and proactively addressing any issues that could impact the delivery of water or the safety of surrounding communities. As part of these efforts, in 2018 DWR launched the Castaic Dam Modernization Program (CADMP), which is primarily focused on evaluating, assessing, and improving the likely performance of the dam and associated appurtenances during a major earthquake or extreme weather event, including the condition of the spillway, which has never been used in the nearly 50-year history of the dam.

SPILLWAY CONDITION AND EXTREME WEATHER ASSESSMENTS

To date, the spillway at Castaic Dam has never been activated – which would occur when water from the reservoir overflows the ungated weir and flows down the service spillway. Regardless, dam safety engineers have identified that some of the concrete



invert panels and wall sections in the spillway have shifted or lifted since original construction, which could lead to increased potential of erosion if the spillway were used to release water.

As a proactive interim risk reduction measure, DWR has lowered water levels in the rainy season since 2018 to attenuate against larger rain events, should they occur, without activating the spillway. In 2020, DWR performed an extensive investigation into the geologic characterization of the site to determine the causes and potential impacts due to expansive material under the slabs that are causing the concrete to shift. The results of this investigation will provide detailed information to evaluate the expansive material and develop potential rehabilitation alternatives to ensure the spillway will function effectively if it is ever needed in an extreme weather event.

EARTHQUAKE RESILIENCY ASSESSMENTS

A stability analysis conducted in 2018 determined that the earthen embankment dam at Castaic will remain stable in the event of a major earthquake. However, there are appurtenances of the dam that could be damaged, such as the outlet structures

CASTAIC DAM

Location: Los Angeles County

Construction Completion: 1974

Type of Dam: Earth embankment

Height: 425 feet

Length: 4,900 feet

Operating Storage Capacity: 323,700 acre feet

Outlet Works: A low and a high concrete free-standing intake structure with a single outlet tunnel

Spillway Type: Uncontrolled (ungated) overflow

Function of Storage:

- Normal Operation water deliveries
- Emergency Storage
- Multiple recreation opportunities
- State Water Project: Terminus of the West Branch of the State Water Project

State Water Contractor Water Deliveries:

- Metropolitan Water District of Southern California
- Santa Clarita Valley Water Agency
- Ventura County Watershed Protection District



that are used to release water from the reservoir. This type of damage may impact DWR's ability to release water to downstream customers. DWR is evaluating seismic retrofits to address the potential operational issues that could result following a major earthquake.

INTERIM RISK REDUCTION MEASURES DURING MODERNIZATION EFFORTS

Modernization efforts will continue for several years due to the complex design and implementation requirements of large retrofit modifications or rehabilitation work to the facilities. DWR has already embarked upon, and completed, several interim risk reduction measures as an integral part of the modernization effort under the CADMP.

These measures include:

- Seismic retrofits to the high intake tower bridge to increase the operational and safety of personnel using the bridge in the event of a major earthquake type event. These retrofits were completed in February 2022.
- Seasonally lowering the water level of Castaic Lake during the winter months will provide more capacity in the reservoir to buffer winter run-off, reducing the likelihood that the spillway would need to be activated. These lower water levels will not impact water supply or recreation activities.
- As construction equipment will be operated in all phases of the modernization program, increased noise and activity at the site may be expected.

HOW TO CONTACT US

For more information on the Castaic Dam Modernization Program, contact:

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