Folsom Dam Improvements

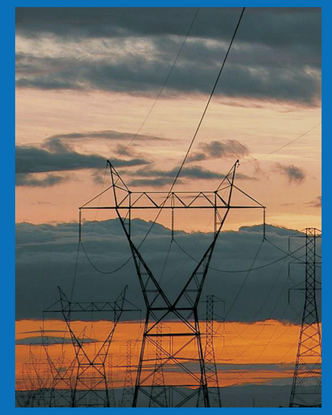
Promoting Public Safety for the Sacramento Region

Folsom Dam and Reservoir are a component of the Central Valley Project, owned and operated by the Bureau of Reclamation, Mid-Pacific Region, Central California Area Office

Construction of Folsom Dam by the Corps began in October 1948 and was completed in May 1956. Folsom Dam was then transferred to Reclamation for operation.

Folsom Dam is a concrete gravity dam 340 feet high and 1,400 feet long flanked by left and right earthfill wing dams. "The Folsom Facility" also includes Morman Island Auxiliary Dam and eight earthfill dikes. The storage capacity for the reservoir is 977,000 acre-feet at an elevation of 466 feet.

Water was first stored in February 1955. The Folsom Facility provides water for municipal and industrial use and agriculture; generates about 10 percent of local hydropower needs; maintains flows and water temperatures to support fish and wildlife; provides flows for Sacramento-San Joaquin Bay-Delta water quality; and offers recreation for 2 million visitors annually.



Folsom Dam Powerplant capacity is 207 MW. A megawatt (MW) is 1,000 Kilowatts.

Since 1955, Reclamation and the Corps have been working together to ensure the safe maintenance and operation of Folsom Dam. This collaboration has provided more than 50 years of protection for people and businesses downstream as well as power and a reliable water supply.

What is Dam Safety and Flood Protection?

The Bureau of Reclamation and the U.S. Army Corps of Engineers (Corps) have obligations and interests in relation to the Folsom Facility, but they differ with respect to Congressional objectives, mandates, authorities, funding, and timelines. Joint agency objectives met by facility modifications include:

Dam Safety
Under the Safety of Dams Program, Reclamation identified the need for expedited action to reduce hydrologic (flood), seismic (earthquake), and static (seepage) risks. These events have a low probability of occurrence in a given year; however, due to the large population downstream and adjacent to Folsom Dam, modifying the facility is prudent and required to improve public safety.

Flood Damage Reduction
The Corps, in partnership with the Central Valley Flood Protection Board (formerly the State Reclamation Board) and the Sacramento Area Flood Control Agency (SAFCA), identified the need to reduce the risk of flooding in the Sacramento area, one of the most at-risk communities in the Nation.

Project Coordination
The auxiliary spillway, or Joint Federal Project (JFP), represents an unprecedented partnership among Reclamation, the Corps, the Central Valley Flood Protection Board, and SAFCA.

The JFP was developed to coordinate efforts of both Reclamation and the Corps at the Folsom Facility. Through their cooperation, Reclamation and the Corps seek to integrate related dam safety and flood-risk reduction improvements. Additionally, both agencies are planning other improvements separate from the JFP.

When completed in 2015, the JFP's new auxiliary spillway will look like this (artist's rendition). The JFP represents an unprecedented partnership among the Bureau of Reclamation, U.S. Army Corps of Engineers, the Central Valley Flood Protection Board, and the Sacramento Area Flood Control Agency.

U.S. Department of the Interior Bureau of Reclamation

US Army Corps of Engineers
Sacramento District

Central Valley Flood Protection Board

SAFCA
Sacramento Area Flood Control Agency

Folsom Dam Improvements

Promoting Public Safety for the Sacramento Region

Folsom Dam and Reservoir are a component of the Central Valley Project, owned and operated by the Bureau of Reclamation, Mid-Pacific Region, Central California Area Office

Hydrologic Risk & Flood Protection

The Bureau of Reclamation and the U.S. Army Corps of Engineers (Corps) will jointly construct a new spillway to prevent overtopping of any of Folsom Dam's earthen embankments leading to an uncontrolled breach during the largest foreseeable flood events. The spillway will also provide improved flood protection to the Lower American River watershed in conjunction with downstream levee improvements.

Phase I construction includes initial spillway excavation, construction of a haul road, and modifications to the Right and Left Wing Dams starting in late 2007 with completion by 2009. Additional phases of construction will follow with expected completion by 2015.

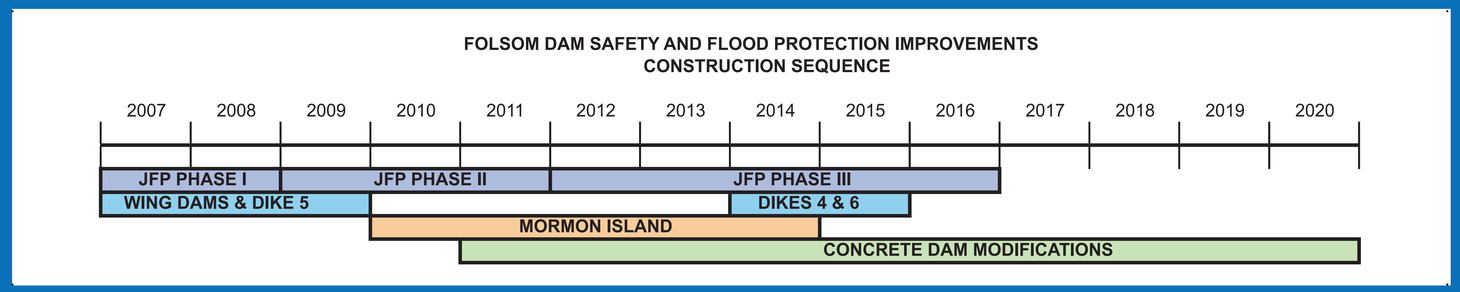
JFP's Auxiliary Spillway

The Joint Federal Project (JFP) auxiliary spillway will have six submerged tainter gates. The spillway will include a concrete control structure that will regulate releases through submerged tainter gates into a concrete-lined spillway chute and stilling basin, discharging directly into the American River downstream of the main Folsom Dam.

The JFP auxiliary spillway will be located southwest of the existing main concrete dam. Principle features of the new auxiliary spillway include:

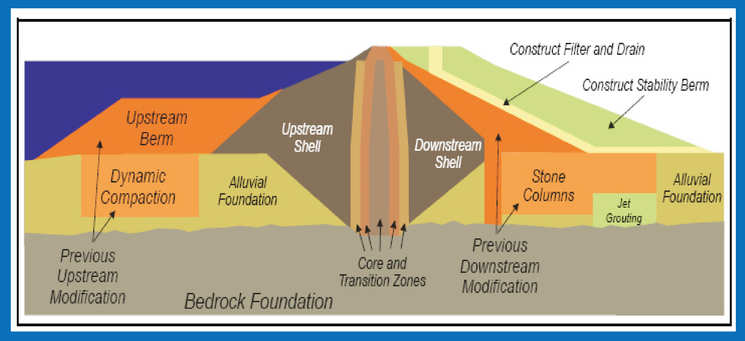
- an approximately 1,000-foot-long approach channel beginning in Folsom Reservoir
- a concrete control structure, including six submerged tainter gates
- a spillway chute approximately 3,000-feet long
- a stilling basin which acts as an energy dissipation structure as discharges enter the American River below the main concrete dam.

The control structure will operate in conjunction with existing spillway gates on Folsom Dam to better manage flood flows from Folsom Reservoir.

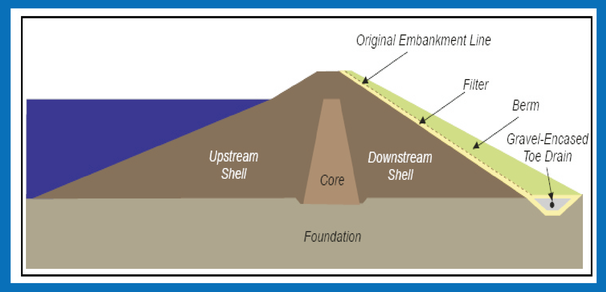


Static Risk

Reclamation will construct modifications to prevent a breach of any of Folsom Dam's earthen embankments caused by water seepage through an embankment.



Proposed modifications to Morman Island Auxiliary Dam



Profile of proposed modifications to Dikes 4, 5, & 6

Additional Dam Safety Improvements

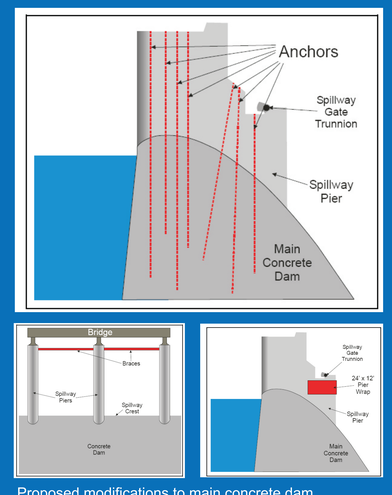
In addition to the JFP, Reclamation will complete additional dam safety work on the Left and Right Wing Dams; Dikes 4, 5, and 6; the main concrete Folsom Dam; and Mormon Island Auxiliary Dam to address seismic and static risks.

Liquefaction

Liquefaction is a phenomenon in which soil strength is reduced by earthquake shaking. Liquefaction can trigger landslides and cause the collapse of dams. Modifications will be made to Mormon Island Auxiliary Dam to reduce this risk.

Seismic Risk

Reclamation will modify the main concrete dam to prevent a breach that could be caused by a large earthquake. Additionally, Reclamation will further stabilize the foundation of and construct a berm at Morman Island Auxiliary Dam to prevent liquefaction.



Proposed modifications to main concrete dam

U.S. Department of the Interior, Bureau of Reclamation

US Army Corps of Engineers
Sacramento District

Central Valley Flood Protection Board, State of California

SAFCA
Sacramento Area Flood Control Agency