

# Anderson Dam Seismic Retrofit Project Frequently Asked Questions

## What is going on at Anderson Dam?

The Santa Clara Valley Water District has begun a major project to retrofit and strengthen Anderson Dam so it can withstand any probable earthquake. The effort is known as the Anderson Dam Seismic Retrofit Project.

Closer look at Anderson Dam



SPILLWAY    OUTLET PIPE    DAM EMBANKMENT    CREST OF DAM

## Why are we doing this project?

The water district conducts periodic seismic (earthquake) safety evaluations of all its dams. In 2011, the water district received results from a study that concluded that Anderson Dam might not withstand a major earthquake. These studies considered what would happen if a very large earthquake (magnitude 7.25) occurred on the Calaveras Fault with an epicenter located just over a mile away. This is not a likely event, but it is not impossible.

The study indicated that a major earthquake could seriously weaken the foundation of the dam. If the foundation were weakened, the top of the dam could theoretically slump down. If the reservoir were full at the time, there could be an uncontrolled release of water. The water district is keeping the water level in the reservoir at less than 68 percent of its capacity to prevent uncontrolled release of water in such an event while the project is being implemented.

## What are the risks of dam failure in the meantime?

The water district has sharply reduced the amount of water that can be stored in the reservoir. This reduces the likelihood of water overtopping the dam during a large earthquake while the retrofit project to strengthen the dam is implemented. A storage restriction of over 25 feet below the spillway has been put in place to protect the public.

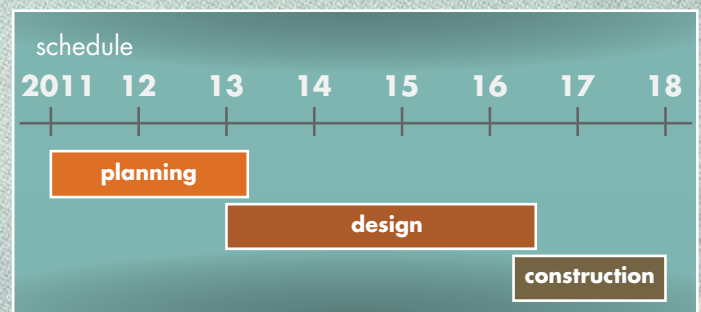
The dam's two regulatory agencies, the Federal Energy Regulatory Commission and the California Division of Safety of Dams (DSOD) have approved the restriction. The restriction will allow the reservoir to fill up to 68 percent of its full storage capacity. Water district staff and the regulatory agencies believe that this would prevent the uncontrolled release of water in case of a failure after a major earthquake.



Field visit with California Division of Safety of Dams and Federal Energy Regulatory Commission.

## When is the proposed schedule?

This is a major effort consisting of planning, design and construction. Construction will not begin until early 2016 and will take approximately two years to complete. Here's the overall schedule:





## Can I use the reservoir during construction?

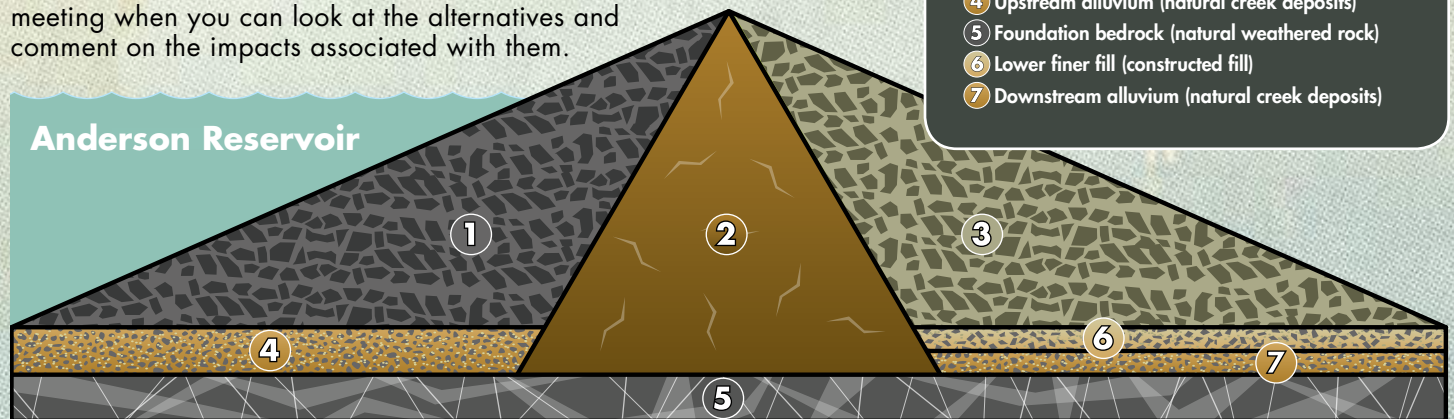
It is expected that the reservoir will be available for recreational use until spring of 2015. It is anticipated that the water district will begin to lower the reservoir in support of construction that is expected to start in early 2016. We are working hard during the planning and design phases of the project to identify how the construction work will be done and what impact it will have on the level of the reservoir. Construction will not start until 2016 and there will be many discussions and public input opportunities before that time. We'll also work with Santa Clara County Parks and Recreation to minimize impacts.

## What impacts are expected during work activity?

Inevitably, as there are on all major construction projects, there will be construction impacts such as noise, dust, road closures and recreational impacts. The water district will work with county parks and residents to come up with a program to minimize these impacts as much as possible.

## How can I get more information?

You are invited to attend a community open house at Jackson School on Thursday, Sept. 27, 2012, from 4 p.m. to 8 p.m. This is a drop-in event. You can come any time during the announced hours and talk with our technical staff and consultants about the topics that interest you. You will also have the opportunity to make comments to our staff. In November 2012, there will be another meeting when you can look at the alternatives and comment on the impacts associated with them.



### LEGEND

- 1 Upstream rockfill (constructed fill)
- 2 Upstream/downstream clay core (constructed fill)
- 3 Downstream rockfill (constructed fill)
- 4 Upstream alluvium (natural creek deposits)
- 5 Foundation bedrock (natural weathered rock)
- 6 Lower finer fill (constructed fill)
- 7 Downstream alluvium (natural creek deposits)

## Can you tell me more about the project?

A major contributor to the change in the predicted seismic performance of the dam is the discovery of a relatively loose layer of alluvium in the foundation on both the upstream and downstream sides of the dam and a layer of poorly compacted (loose) liquefiable material in the lower rock fill shell on the downstream side. These 5 to 10 feet thick layers of weak material (located beneath 15 to 70 feet of rock fill shells on both the upstream and downstream sides of the dam) are susceptible to a significant reduction in strength when subjected to severe shaking.

In addition to the nearby active Calaveras Fault, there are two other earthquake faults (the Coyote Creek Fault and the Range Front Fault) that run directly under the dam. These faults were first identified in 1949 but they were believed to be inactive. Our understanding of potential earthquakes has improved since 1950, when Anderson Dam was built, and newer studies have suggested that these faults could be active.

These faults could have a serious impact on the outlet pipe beneath the dam where it crosses the fault traces. Since the existing outlet was not originally designed to withstand the displacements that are possible from these faults, the outlet must now be replaced.

## Access Valley Water

For more information, please call **Ed Morales** at **(408) 630-2880**. You may also visit our website at **www.valleywater.org**, and use our Access Valley Water customer request and information system. With three easy steps, you can use this service to submit questions, complaints and compliments directly to a staff person.

