

Santa Clara Valley Water District



Sector	Critical lifeline utility, local government
Coverage	Santa Clara Valley, CA
Facilities	Earthen/rock fill dams, water treatment plants
Fragilities	Factor of safety metrics based on fragility curves
Usage	Earthen dam post-earthquake inspection prioritization
Status	Operational
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The Santa Clara Valley Water District ([SCVWD](#)) manages water resources for approximately two million people across Silicon Valley and Santa Clara County. In addition to providing flood protection and maintaining healthy wildlife habitats along more than 800 miles of streams, SCVWD is responsible for ensuring the continued structural integrity of earthen/rock fill dams. The reservoirs supported by these dams represent a significant flooding hazard in the event of an earthquake, as they contain 25% of the water supply for the County.

With a large potential earthquake hazard to mitigate, as facilities such as the Coyote Dam reach across the active Calaveras Fault, the SCVWD relies on factor of safety metrics for reservoir dams. This metric is a variable quantity, based on factors such as current construction, applied load due to fill levels, and ShakeCast fragility curves. Combining these factors allows the SCVWD to distinguish between two dams with the same fragility curves and assign unique factors of safety for each.

Implementation of specific features within the SCVWD ShakeCast system has been facilitating through communication with the State of California Division of Safety of Dams, a regulator to the SCVWD that had previously implemented ShakeCast fragility curves to SCVWD facilities within its own database. Further ShakeCast assistance has come from other local agencies and regulators, including [EBMUD](#) with regards to the inclusion of pipelines into a facility database. This level of outreach by SCVWD has allowed for increased efficiencies in the form of saved taxpayer funds as well as increased factors of safety for all facilities.



Coyote Dam and Reservoir, currently the second largest by volume operated by SCVWD, is located on the Calaveras Fault.

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