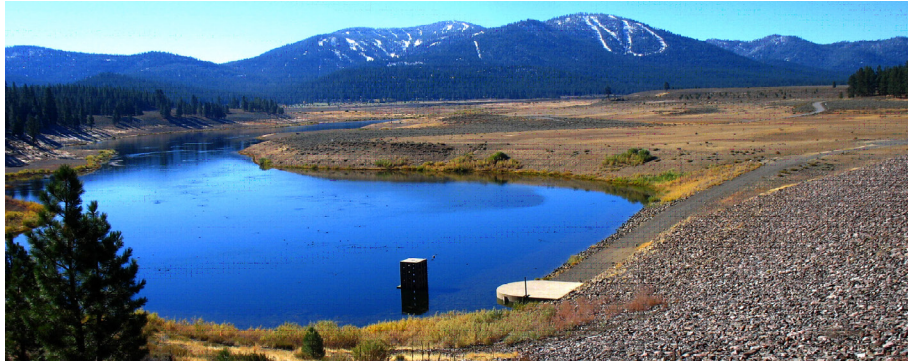


# Martis Creek Dam

Martis Creek Dam, located on the Truckee River three miles east of Truckee, California, is owned and operated by the U.S. Army Corps of Engineers (USACE) as a flood control and water storage facility. Completed in 1972, the 113-foot-high embankment dam has a capacity of 20,400 acre-feet.

## PROJECT RESULTS

*Working under a compressed schedule due to the high risk of dam failure, Kleinfelder utilized a risk-informed approach that is the basis of the most forefront dam safety guidelines being developed by USACE. Kleinfelder has been able to help guide and shape the project as it moves towards remedial measures.*



## INSUFFICIENT PASS RATES

During the dam's first test fill, significant seepage was observed along the left abutment of the dam. Subsequently, remedial work was performed at the dam, but seepage levels remained significant. A 2002 study completed concluded that the existing spillway could pass 47% of the probable maximum flood (PMF), and that a full PMF would overtop the dam by 1.1 feet. Kleinfelder's challenge was to improve those figures.

## INVESTIGATION, IDENTIFICATION, AND EVALUATION

Through subsurface investigations, dam safety analyses, identification of interim risk reduction measures, dam breach analysis, inundation mapping studies, and paleoseismic trenching, Kleinfelder discovered a previously unrecognized fault. Kleinfelder conducted fault investigations to characterize the fault's activity, then performed seven dam failure scenarios (and subsequent flood routing). Potential failure modes related to seepage, liquefaction, and slope stability were evaluated for six subsurface domains and identified based on site geology and engineering characteristics of the dam.

### Location:

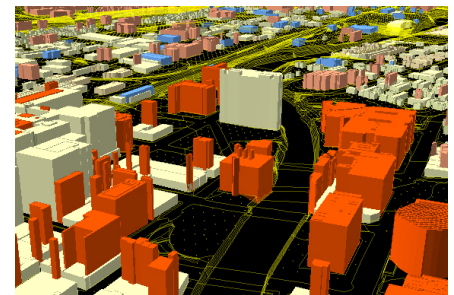
Truckee, California

### Owner:

U.S. Army Corps of Engineers



Subsurface investigations



Dam break inundation study using GIS

