

# CA Awards \$274M Contract for Dam Repairs

Wednesday, April 19, 2017

Repairs to the damaged Oroville Dam in California will cost more than \$275 million, according to the contract awarded to a major American infrastructure contractor.

Kiewit Corp., based in Omaha, submitted the low bid of \$275.4 million for the reconstruction of the dam's main spillway, where major concrete erosion triggered emergency measures in February in the midst of heavy rains. The bid shattered state officials' estimates, which had put the job at about \$220 million. The state [announced Monday](#) (April 17) that it had awarded the contract to Kiewit.



*Images: Kelly M. Grow / California Department of Water Resources*

The \$275 million contract includes repairs to both the main spillway—which revealed a crater nearly as long as a football field in early February and was shut down—and the auxiliary spillway.

Higher bids came from Barnard Construction Co., (\$277 million) and a Teichert Construction-Granite Construction joint venture (\$344.1 million), [according to the Sacramento Bee](#).

The contract includes repairs to both the main spillway—which [revealed a crater nearly as long as a football field](#) in early February and was shut down—and the auxiliary spillway, which was employed for the first time, and [sustained erosion](#) that threatened the stability of a concrete weir.

Officials ordered the evacuation of about 188,000 people for nearly two days in mid-February amid concerns that the weir could give way, sending a wall of water rushing downstream.

### **Work Schedule**

The California Department of Water Resources, which oversees the dam and awarded the repair contract, says “no regrets work,” including road construction and slope stabilization, has already begun, and Kiewit has been given a notice to begin work. Work will take place in multiple phases, the DWR says, and details will not be disclosed to the public for security reasons.

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The use of the auxiliary spillway, which had never been put into service before, caused erosion on the hillside extending down from the lake.

The goal is to have the work complete by Nov. 1, ahead of California's rainy season.

Water has flowed on and off down the main spillway since the original shutdown. Most recently, it was put back into action April 14 with limited flows to relieve the rain-swollen Lake Oroville.

The DWR says as of April 17, 1.6 million cubic yards of debris had been removed from the debris pile at the bottom of the main spillway.

### New Failure Analysis

On Tuesday (April 18), the *Los Angeles Times* reported on [a new independent failure analysis](#) asserting that flaws in the original design of the dam left it vulnerable to structural problems. The review, issued by University of California Berkeley's civil engineering professor emeritus Robert Bea, says that the concrete floor of the spillway was not made thick enough, and did not call for continuous steel reinforcement.



UC Berkeley professor emeritus Robert Bea says the failure occurred at the spillway's "weakest point."

According to the *Times*, Bea says the spillway failed "at its weakest point," an area over a clay drain pipe where the concrete floor is just 4-6 inches thick. Bea says the drain pipe itself was likely clogged by tree roots, causing an uplifting force exerted on the concrete above it.

Bea recommends taking a hard look at similar dams throughout the state and beyond to assess whether unforeseen issues like those at Oroville could be looming.

"This is not an Oroville problem," he told the *Times*. "It is a state problem and a national problem."