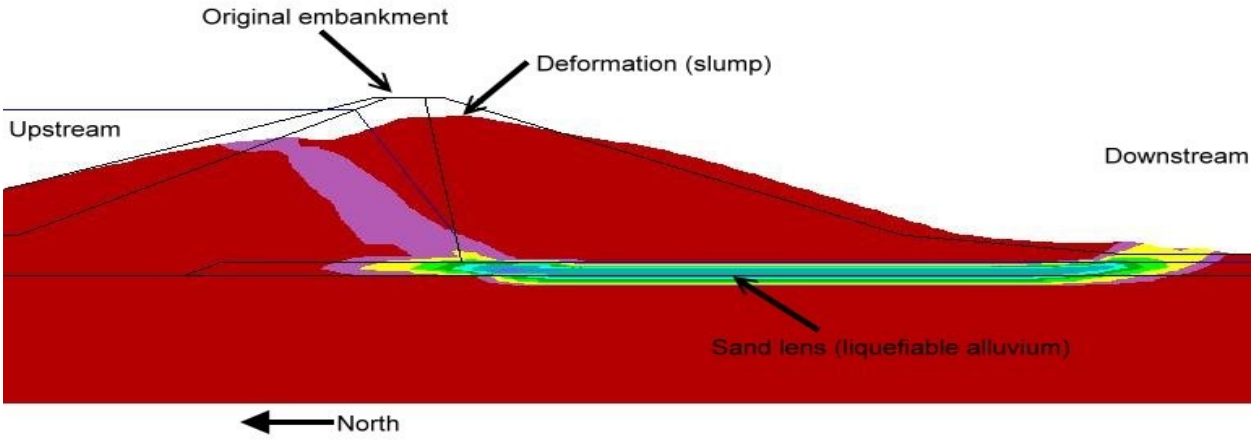
BUREAU OF RECLAMATION

Boca Dam and Reservoir Background

Engineering Analyses for Safety Modifications

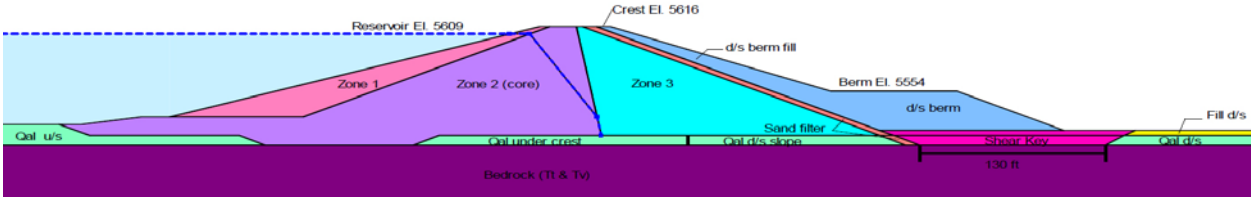
Boca Dam and Reservoir are components of the Truckee Storage Project, completed in 1937 by Reclamation and since operated and maintained by the Washoe County Water Conservation District.

Based upon extensive engineering analysis, Reclamation had found that Boca Dam and Dike was at risk from structural failure during an earthquake due to the presence of sand and gravel within the dam's foundation. During an earthquake, the dam had the potential to slump or crack (seismic-induced liquefaction) leading to overtopping or a breach, as illustrated in the below figure.



Profile of dam deformation during an earthquake

The Safety of Dams Act requires Reclamation to reduce the risk of Boca Dam structural failure within acceptable levels. The modification to Boca included removing a sand-and-gravel lens on the dam's downstream side; a downstream stability berm was also constructed to buttress the dam in the event of an earthquake, as illustrated below.



Profile of modified dam

The spillway was seismically retrofitted as of October 2019. The 2020 work widened the dam crest by 25 feet and reinforced the concrete road surface.

The earthen material for the stability berm was located across from Stampede Meadows Road; these materials were hauled to the dam.

In accordance with the National Environmental Policy Act and the California Environmental Quality Act, Reclamation has coordinated with the Lahontan Water Board and developed an Environmental Assessment/Initial Study to describe the project and impacts. The document is available at: https://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=27372.

Aerial view of in-reservoir borrow area