

Lake Mathews: A major seismic hazard reduction project is underway at Lake Mathews reservoir, about 5 miles south of the city of Riverside. The purpose is to reduce the seismic vulnerability of Lake Mathews outlet facilities and to ensure a reliable supply of water following a major earthquake. The project cost is estimated at about \$100 million, with a completion date of May 2004 (Metropolitan Water District, 2000).

3.6.6 Mitigation Alternatives-Storage Restrictions

Reservoir storage restrictions can provide effective, rapid ways to increase dam safety, but can prove troublesome in the long term. Temporary storage restrictions have improved the safety of 21 dams in California (Babbitt, 1993). These operating restrictions are placed soon after analyses identify stability problems. The engineers who do the stability analyses usually recommend the restriction depth. The restrictions allow time to design and finance repairs, find alternate water supplies and to conduct environmental studies. Reducing the allowable reservoir storage directly reduces the damage potential should an earthquake rupture the dam. It also reduces seepage pressures in dams and foundations and eliminates liquefaction potential wherever problem soils are completely drained.

Permanent storage restrictions are being used on only 12 California dams (Babbitt, 1993). These restrictions can be difficult to maintain. Dam operators and regulators change and documents get lost. There is pressure to lift restrictions during periods of drought and other crises. If long-term restrictions are used, the conditions at the reservoirs must make the restrictions easy to maintain. Lowered or notched spillways are a more foolproof method of implementing storage restrictions.