Memorandum

Serious drought.
Help Save Water!

To: STRUCTURE POLICY BOARD
Deputy Division Chiefs
Division of Engineering Services

Date: June 24, 2016

File:

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Subject: **UPDATE TO *MEMO TO DESIGNERS* 20-4 SEISMIC RETROFIT GUIDELINES FOR BRIDGES IN CALIFORNIA**

This memo was updated to provide the latest information on bridge retrofits. Caltrans bridge inventory was recently rescreened to identify bridges at risk due to high ground shaking, fault offsets, and liquefaction. Caltrans retrofit strategy for Ordinary Bridges is to do no more than is necessary to prevent collapse. The last update to the memo (in 2010) removed some information on the 'No Collapse' performance criteria. Also progress has been made on designing more effective retrofits for a variety of seismic hazards. The removed information was restored and procedures on designing for the additional hazards was provided.

The updated memo emphasizes that a retrofit must not be done unless it can be demonstrated that the bridge will collapse for the Design Earthquake. It also discusses how to address a variety of seismic hazards on existing bridges. Information on the capacity of existing bridge members was reinstated. Changes to Caltrans seismic practice for restrainers, pipe seat extenders, and liquefaction, lateral spreading, and scour were explained. The role played by Caltrans Office of Earthquake Engineering during retrofit projects and the procedure for getting a retrofit design exception was described.

This memo is for future retrofit projects. Project changes after type selection/strategy meetings and especially during construction are too costly to justify the modest savings provided by this memo.

For questions on application to a specific project, consultants/local Agencies should contact the Structure Liaison Engineer. Caltrans staff may contact Fadel Alameddine at (916) 227-8512.

c: Chief – Division of Design
Chief – Division of Local Assistance
Chief – Structure Maintenance and Investigation
Chief – Division of Engineering Services
Manual Editor—Structure Policy and Innovation