

FHWA's 2005 Seismic Retrofitting Manual - Part 1- Bridges

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In 2005, the Federal Highway Administration (FHWA) will issue its *Seismic Retrofitting Manual for Highway Structures, Part 1: Bridges*. This nationally applicable manual updates suggested practice for mitigating the seismic vulnerability of existing bridges. A research team at the Multidisciplinary Center for Earthquake Engineering Research (MCEER) expanded on the 1995 edition and added new methods of evaluation and retrofit based on FHWA funded experimentation as well as international earthquake experience.

The new document offers guidance on screening, prioritizing, evaluating, and retrofitting bridges defined by AASHTO as being regular. The paper gives an overview of the performance based philosophy presented in the manual and describes procedures for implementing it. It specifically assesses the impact of a lower and upper earthquake, given soil site conditions, bridge importance, and anticipated service life. It uses three performance levels, four retrofit categories, strategies for improving structural response, and a wide selection of specific structural retrofit measures. It also summarizes new guidance on hazardous sites and geotechnical and foundation issues such as potential for liquefaction and lateral spreading.

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