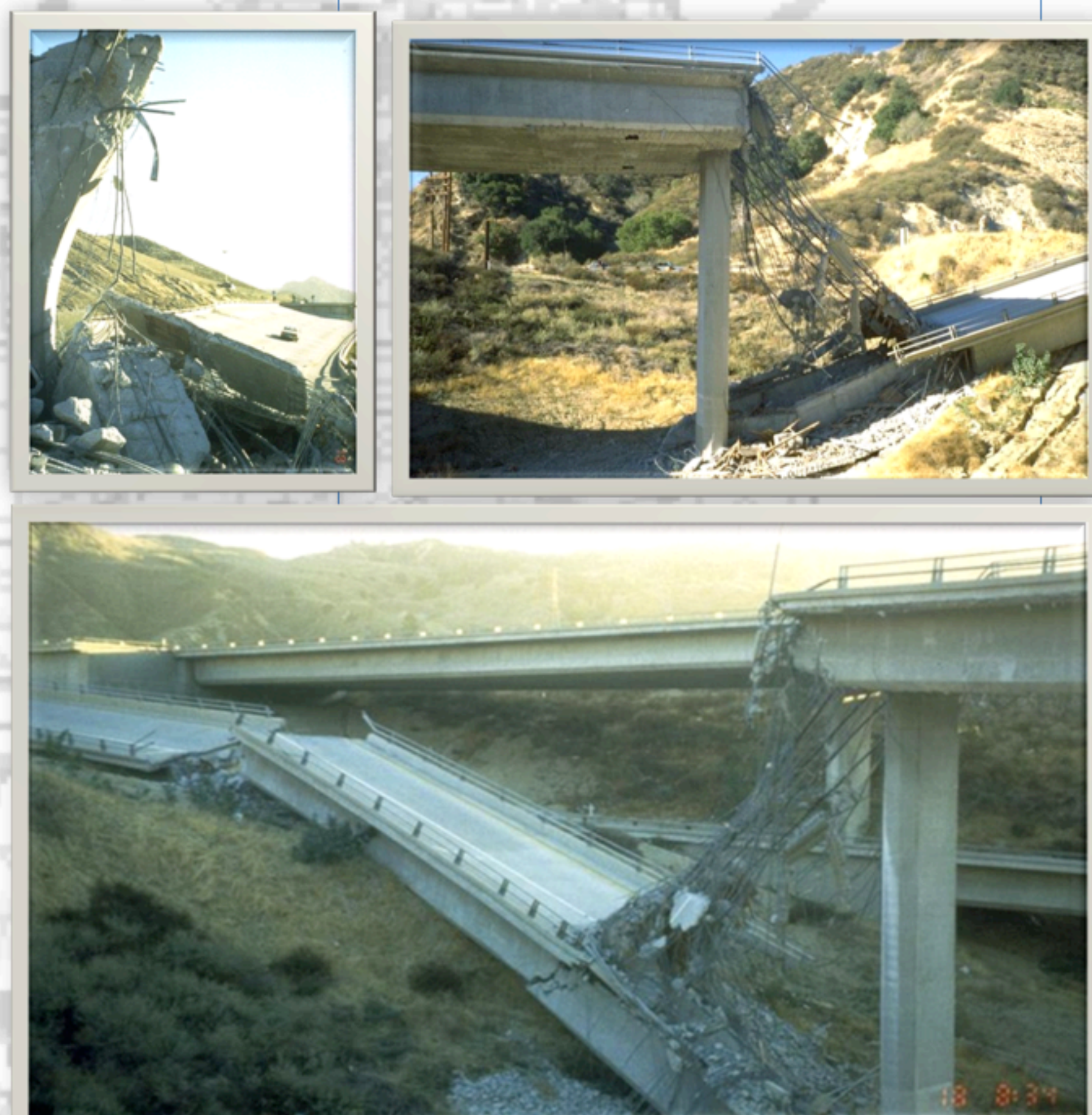


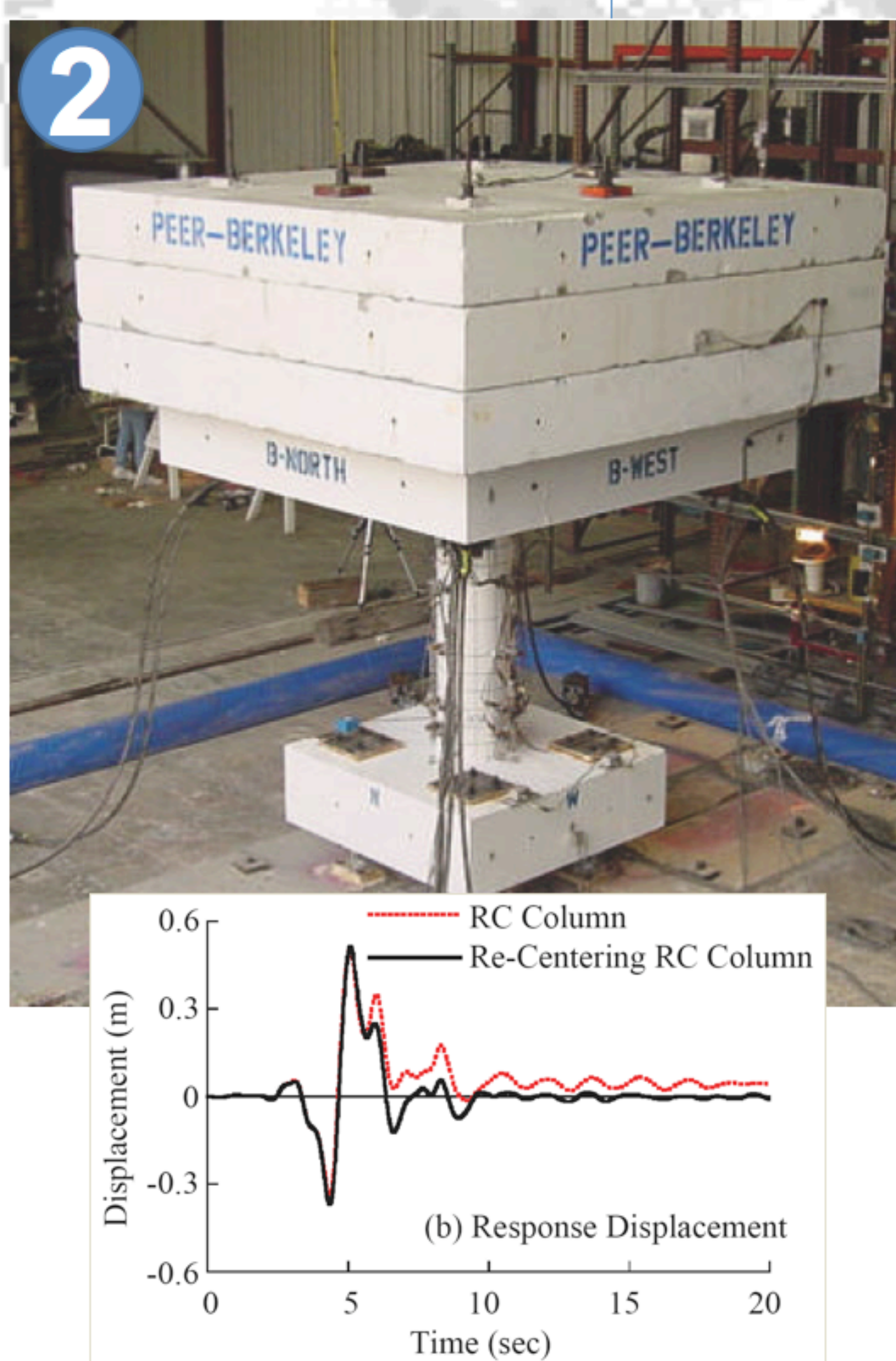
PEER research improves seismic reliability and safety of bridges

1



1994 Northridge Earthquake

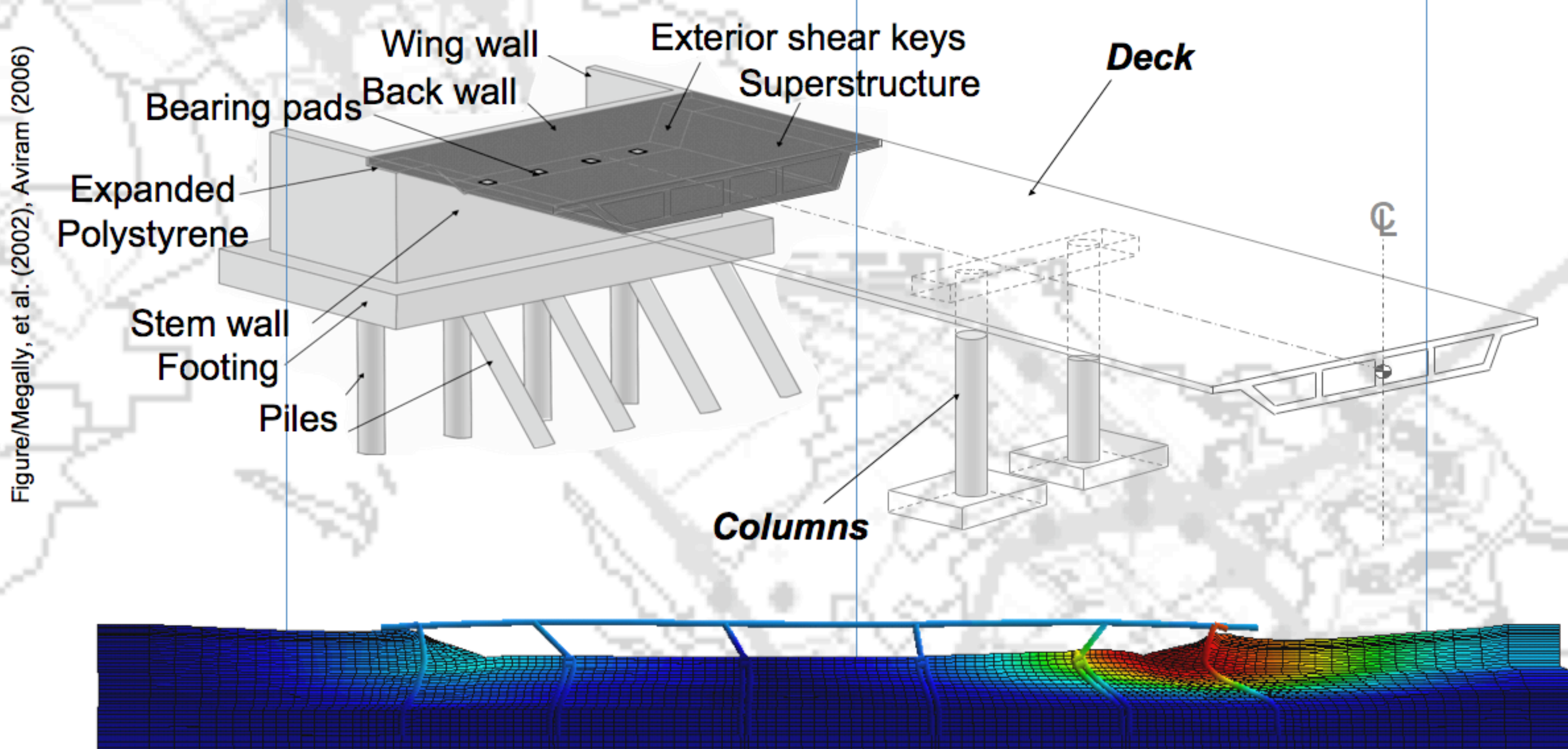
2



1. After an earthquake, will you be able to safely get out of your office and drive back home to your family? PEER research looks at the probability of extensive damage and collapse, and the ability of bridges to still function after an earthquake.

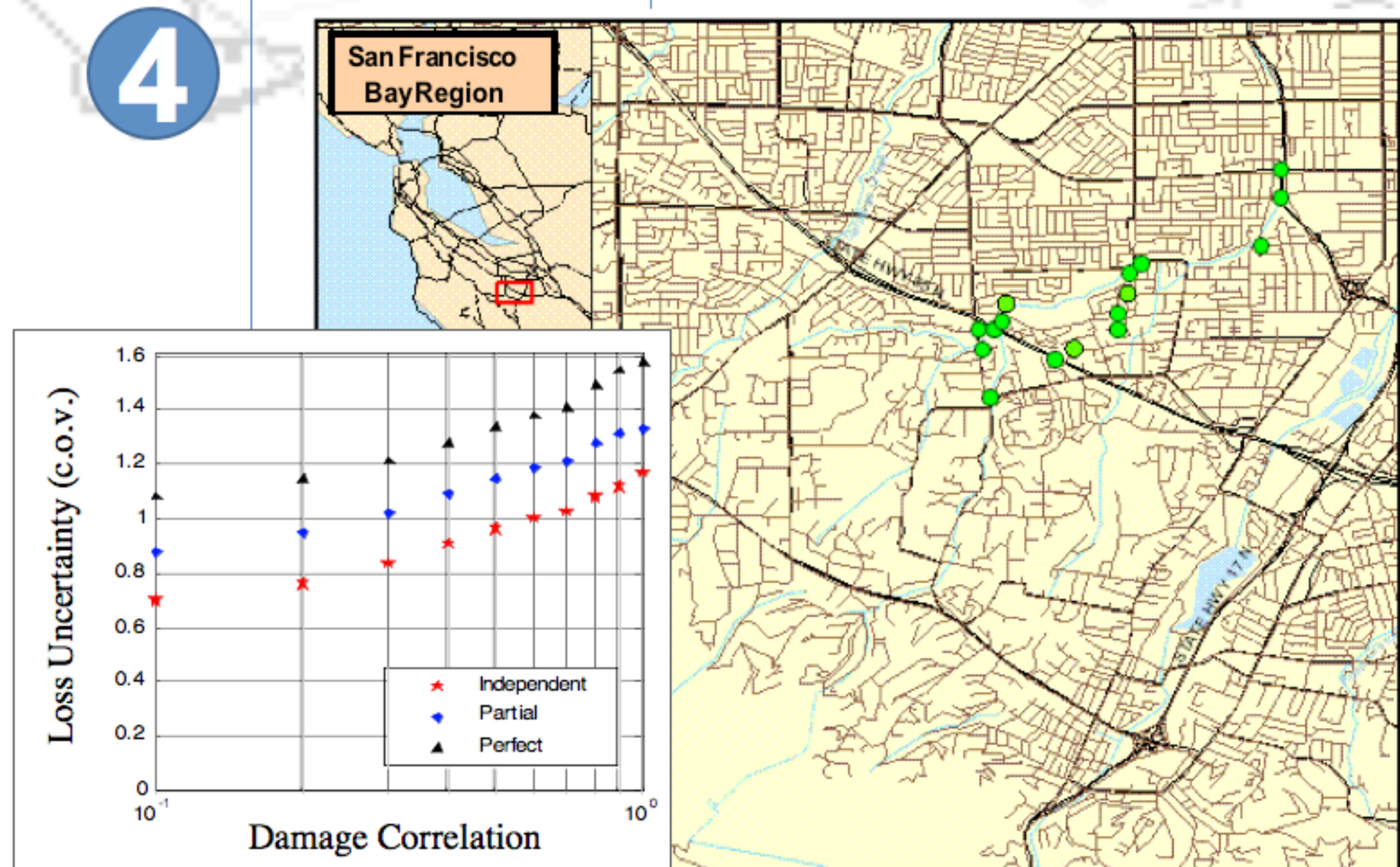
2. Bridges move when earthquakes shake the ground. If the bridge deck moves too far from the foundation, it won't be safe to drive across. PEER tests the ability of new bridge re-centering technology and advanced materials to reduce damage and pull the bridge back to its original shape for post-earthquake safety and function.

3

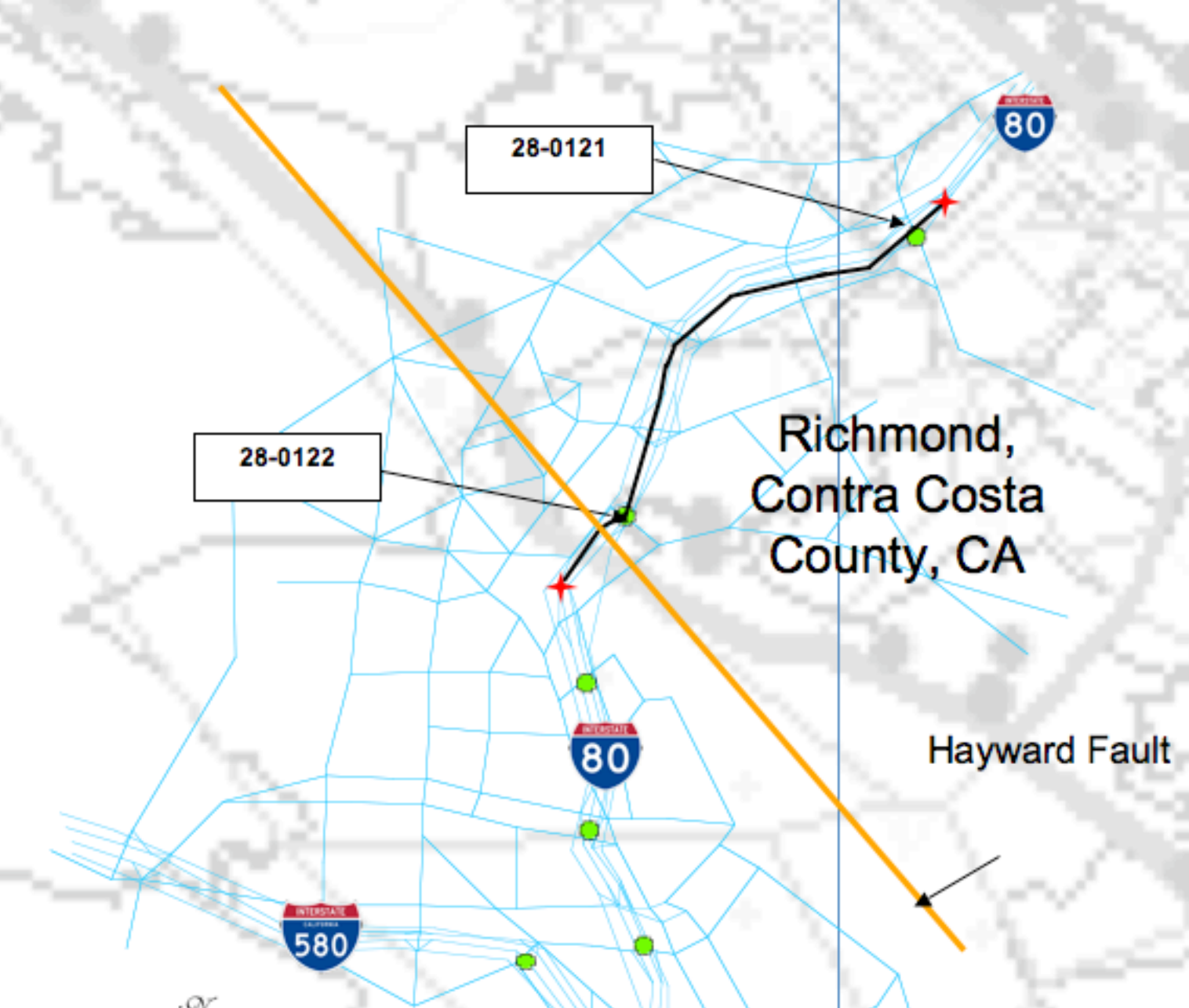


3. Using new mathematical models of structures, engineers can design bridges on a computer and subject them to earthquakes and liquefaction-induced lateral spreading before physical construction begins. The models developed by PEER are realistic enough to ensure that modern bridges have an acceptable safety margin against total collapse.

4



Transportation Network Study



Emergency Response Routes

4. In a transportation network, some bridges and highways are more important than others. Identifying these is important for emergency response, retrofit priorities, and regional network resilience. Economic losses due to earthquake damage can be enormous. PEER research uses adaptive routing to identify safe routes after a disaster and uses geographic correlation to bound dollar losses.



PEER
Pacific Earthquake Engineering Research Center

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