

# More Americans at risk from strong earthquakes, says new report

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Ruins from the 1906 San Francisco earthquake, remembered as one of the worst natural disasters in United States history. Credit: Public Domain

More than 143 million Americans living in the 48 contiguous states are exposed to potentially damaging ground shaking from earthquakes, with as many as 28 million people likely to experience strong shaking during their lifetime, according to research discussed at the annual meeting of

Seismological Society of America. The report puts the average long-term value of building losses from earthquakes at \$4.5 billion per year, with roughly 80 percent of losses attributed to California, Oregon and Washington.

"This analysis of data from the new National Seismic Hazard Maps reveals that significantly more Americans are exposed to [earthquake](#) shaking, reflecting both the movement of the population to higher risk areas on the [west coast](#) and a change in hazard assessments," said co-author Bill Leith, senior science advisor at USGS. By comparison, FEMA estimated in 1994 that 75 million Americans in 39 states were at risk from earthquakes.

Kishor Jaiswal, a research contractor with the U.S. Geological Survey (USGS), presented the research conducted with colleagues from USGS, FEMA and California Geological Survey. They analyzed the 2014 National Seismic Hazard Maps and the latest data on infrastructure and population from LandScan, a product of Oak Ridge National Laboratory.

The report focuses on the 48 contiguous states, where more than 143 million people are exposed to ground motions from earthquakes, but Leith noted that nearly half the U.S. population, or nearly 150 million Americans, are at risk of shaking from earthquakes when Alaska, Puerto Rico and Hawaii are also considered.

In the highest hazard zones, where 28 million Americans will experience strong shaking during their lifetime, key infrastructure could also experience a shaking intensity sufficient to cause moderate to extensive damage. The analysis identified more than 6,000 fire stations, more than 800 hospitals and nearly 20,000 public and private schools that may be exposed to strong ground motion from earthquakes.

Using the 2010 Census data and the 2012 replacement cost values for buildings, and using FEMA's Hazus program, researchers calculated systematically the losses that could happen on any given year, ranging from no losses to a very high value of loss. However, the long-term average loss to the buildings in the contiguous U.S. is \$4.5 billion per year, with most financial losses occurring in California, Oregon and Washington states.

"Earthquakes remain an important threat to our economy," said Jaiswal. "While the west coast may carry the larger burden of potential losses and the greatest threat from the strongest shaking, this report shows that the threat from earthquakes is widespread."

Provided by Seismological Society of America

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