

Quake report spurs retrofitting Nev. buildings

By Scott Sonner, AP

RENO – A new report raising the likelihood of a destructive earthquake striking Salt Lake City in the next half-century has underscored the urgency to retrofit more than 30,000 older brick homes and other unreinforced buildings at high risk of collapsing.

It's also getting attention in neighboring Nevada, where a significant quake is overdue along the Sierra. Nevada officials are anxious to see if Utah succeeds in a first-in-the-nation attempt to secure federal disaster funds for private homeowners to aid in such efforts.

The Working Group on Utah Earthquake Probabilities, in conjunction with the U.S. Geological Survey, released a report last week projecting a 43 percent probability that a magnitude-6.75 or higher earthquake will strike in Salt Lake along the Wasatch front within the next 50 years. That's twice more likely than previously believed.

Experts estimate a magnitude-7 quake would kill at least 2,000 people, seriously injure 7,400 to 9,300 and cause \$33 billion in damage.

"The numbers are staggering," said Cory Lyman, Salt Lake City's emergency management director.

"It's almost incomprehensible," he said last week at the Seismology Society of America's annual meeting in Reno.

The Federal Emergency Management Agency estimates that 90 percent of deaths in a large Wasatch earthquake would be directly related to the collapse of bricks, cinder blocks and

other unreinforced masonry.

Such structures are vulnerable because they have no steel reinforcing bars.

“Concrete doesn’t bend so when it starts shaking like that, it starts to crumble,” Lyman told The Associated Press on Friday.

“Salt Lake City alone has more than 30,000 residential URMs (unreinforced masonry) that are not likely to withstand the impact of any significant tremor,” he said. “It gets to be a little frightening. To mitigate these horrific numbers, we have to have a strategy.”

Craig dePolo, a research geologist at the Nevada Bureau of Mines and Geology, said most deaths and serious injuries occur when people are struck by falling material while fleeing buildings.

“We tell you not to, but if your life is threatened, it’s a common response,” he said.

Chimneys are particularly vulnerable, as are parapets and cornices, the short walls and decorative ledges that run around some building tops.

Most older roofs are not attached to walls, rather the joists sit in grooves under the weight of the roof. Decades ago, most buildings were built that way so if the roof caught fire, it would burn and drop to the ground, leaving the walls intact, dePolo said.

No one was killed, but nearly all the unreinforced buildings were destroyed in rural Wells in 2008 when a 6.0-magnitude quake struck about 60 miles from the Utah line, he said. He estimates there are 1,400 unreinforced buildings in Reno, Sparks and Carson City above a series of Sierra-front faults where earthquakes of 6.5 hit on average every 30 years but haven’t struck in more than 60 years.

“Thirty to 40 percent of those will partially or totally collapse during strong shaking,” dePolo said.

Current retrofitting plans focus on historic buildings at the University of Nevada, including a \$2.7 million project at a century-old dormitory. Cheaper alternatives include posting signs on vulnerable structures that say, “Dangerous Building. If Earthquake, Get Back.”

Utah launched a “Fix the Bricks” program in 2012, encouraging residents to retrofit homes when they put on a new roof or remodel. That brings the price down significantly, in the range of \$10,000 for a typical single-family bungalow, Lyman said.

He said they got the idea to apply for a pre-disaster mitigation grant after learning FEMA was footing part of the bill for Oklahomans to build tornado shelters.

“Hopefully by next year we will have a template that others can use,” Lyman said about the proposal that would reimburse homeowners for up to 75 percent of retrofitting costs.

Nevada is counting on that, said Graham Kent, director of the Nevada Seismology Laboratory. “When we first saw their program, we asked if they can make sure to develop it so we can go back and plug in the words ‘Reno’ and ‘Sparks’,” he said.