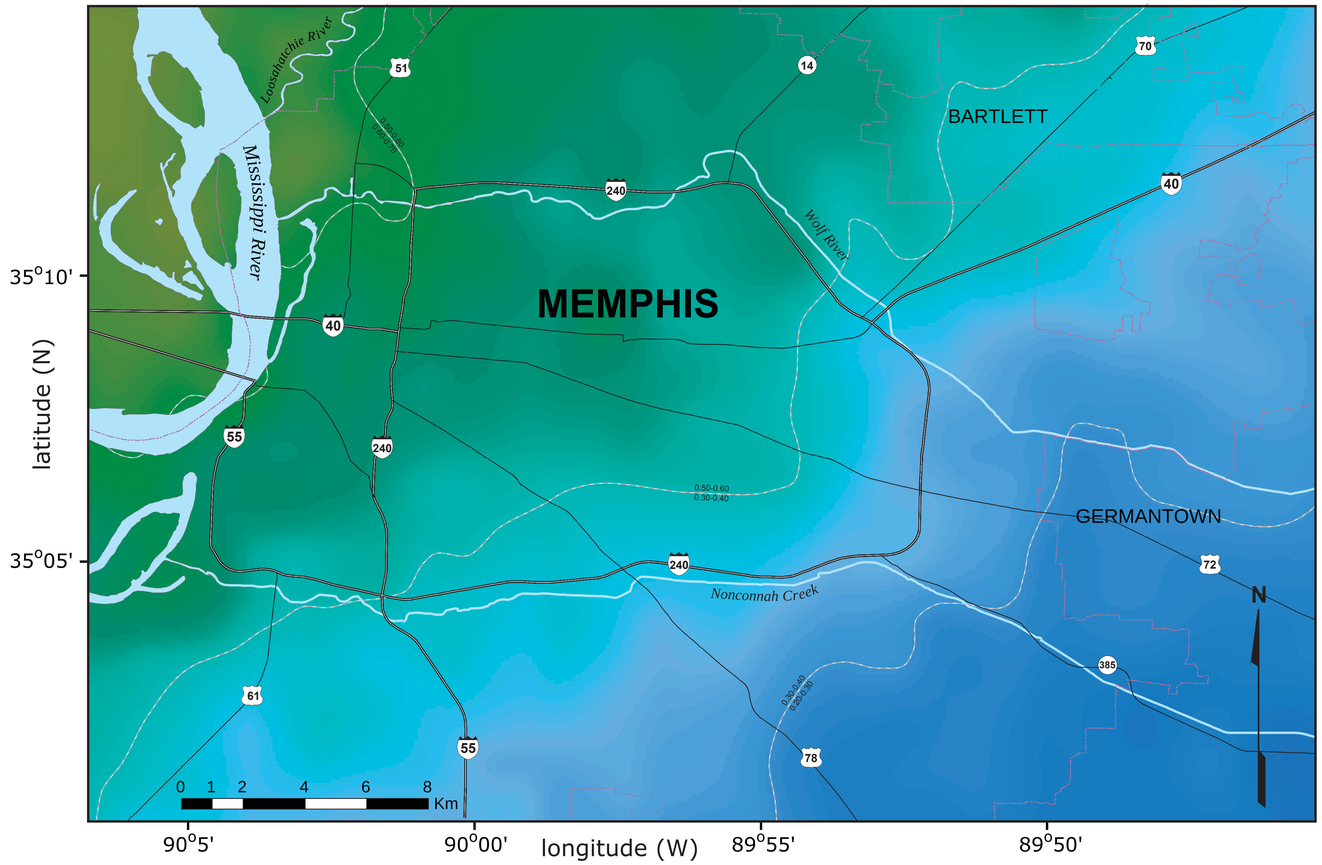
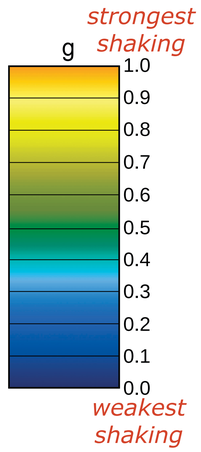
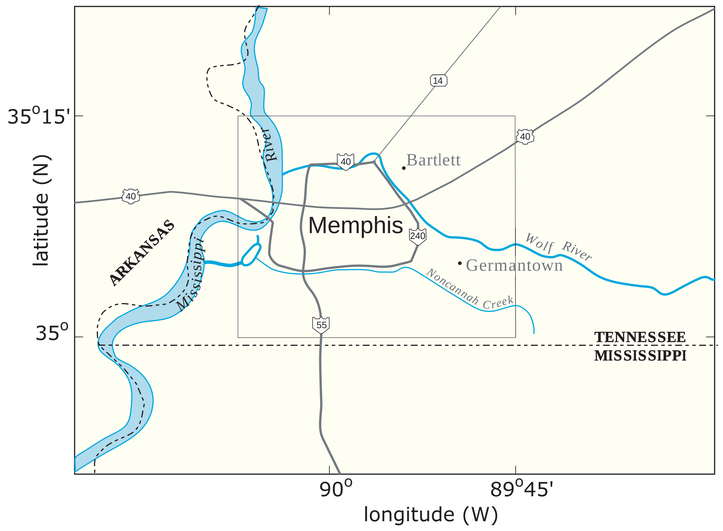
Seismic Hazard Maps of Memphis, Shelby County, Tennessee

1.0 Second Period Spectral Accelerations



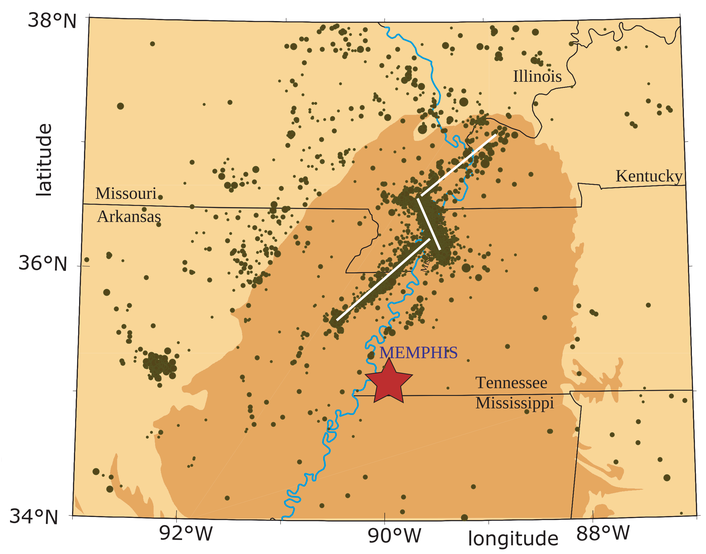


The Memphis,Sheby County seismic hazard maps show expected earthquake ground shaking levels, or ground motions, with variations shown as different colors. Ground motions are expressed as accelerations in *gravity* or *g* units. *Probabilistic* maps show the ground motion levels with a certain change of being exceeded in 50 years, and account for all possible earthquake sources. *Deterministic* or *scenario* maps shows the shaking levels expected for a single, specific earthquake.



The map above is a deterministic one, showing the level of shaking expected from a hypothetical magnitude 7.7 earthquake on a fault in the southern part of the New Madrid seismic zone (see the map below). This particular map shows the shaking expected in a structure with a natural frequency of 1 second, corresponding to a relatively tall structure such as a 10 story building. The effects of ground shaking are often measured in terms of their intensity. The shaking in Memphis for this scenario earthquake would result in damage corresponding to MMI IX intensity.*

Locations of most of the earthquakes that have occurred since the mid-1970s (black dots) and the major faults (white lines) in the New Madrid seismic zone. The darker area is covered by thick sediments, which significantly affect ground shaking levels.



*MMI refers to the Modified Mercalli Intensity scale. The definition of MMI IX is "Damage considerable in specially designed structures and great in substantial buildings, with partial collapse; well-designed frame structures thrown out of plumb; buildings shifted off foundations."

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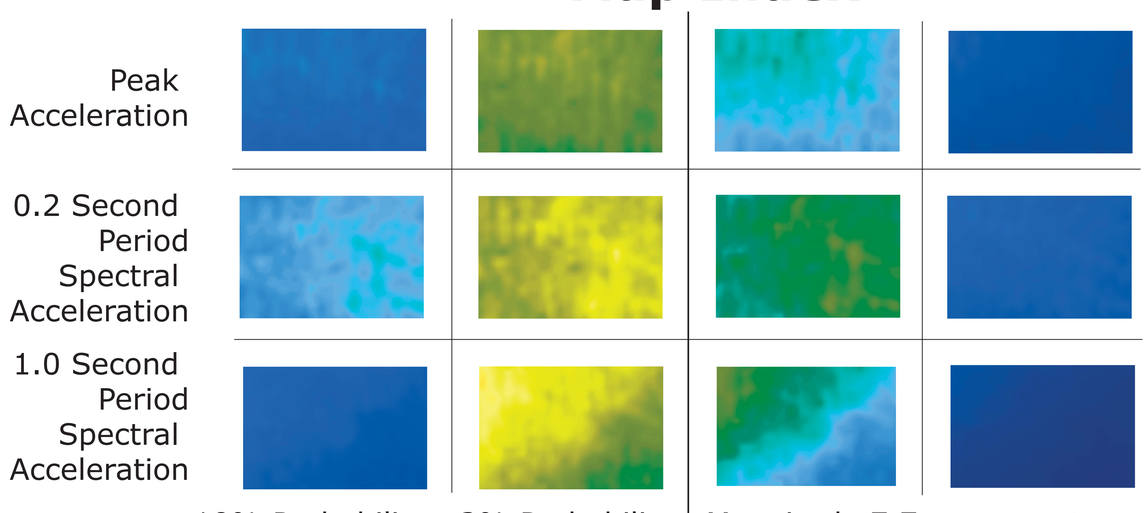

For more information and all maps see http://www.ceri.memphis.edu/usgs or contact U.S. Geological Survey, 3876 Central Ave., Suite 2, Memphis, TN 38152.