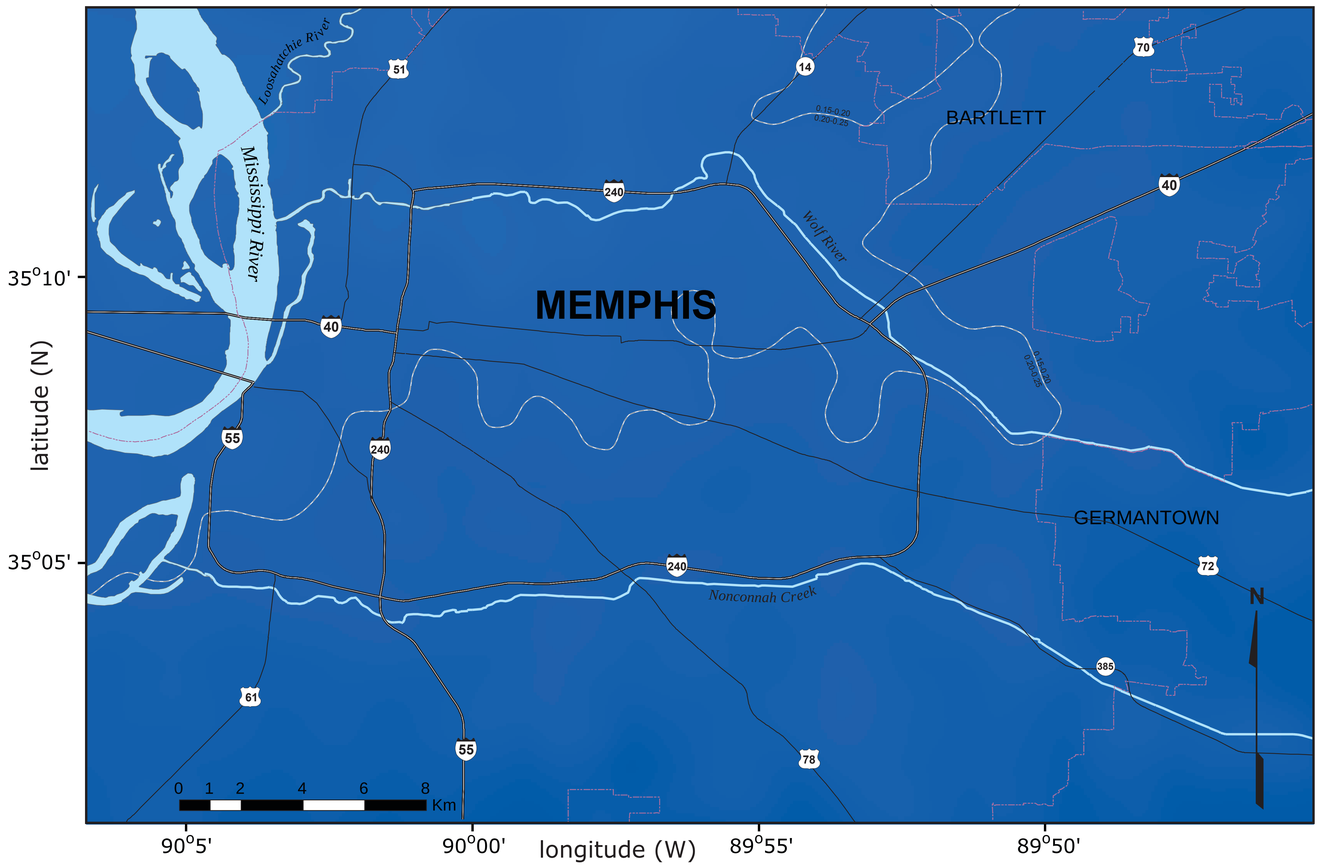
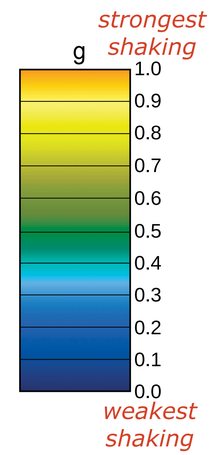
Seismic Hazard Maps of Memphis, Shelby County, Tennessee

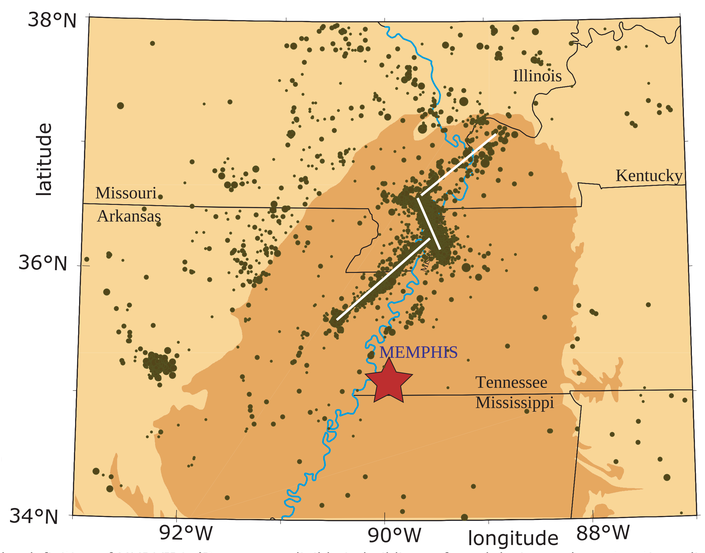
0.2 Second Period Spectral Accelerations





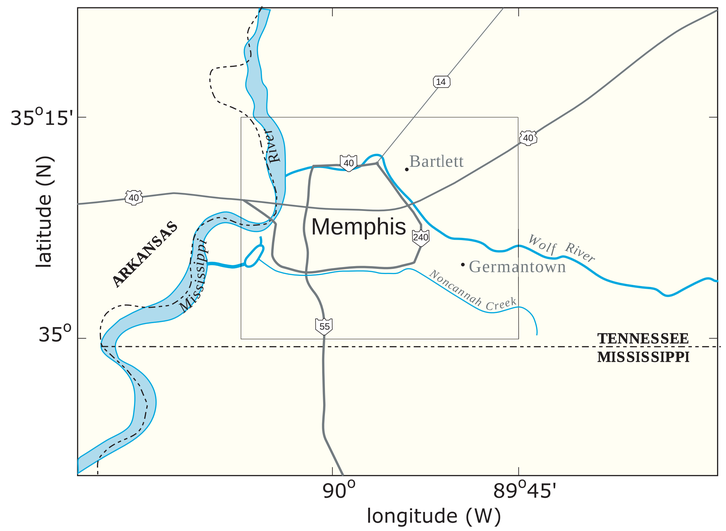
The map above is a deterministic one, showing the level of shaking expected from a hypothetical magnitude 6.2 earthquake on a small fault or fault segment at the southern end of the New Madrid seismic zone (see the map below). This particular map shows the shaking expected in a structure with a natural frequency of 0.2 second, corresponding to a relatively short structure such as a single-family dwelling. 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 intensities greater than MMI VII and less than MMI VIII.*

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, and the definition of MMI VII is 'Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures.' MMI VIII effects are defined as "Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse, great in poorly built structures. Chimneys, factory stacks, columns, monuments, walls fall and heavy furniture overturned."

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.



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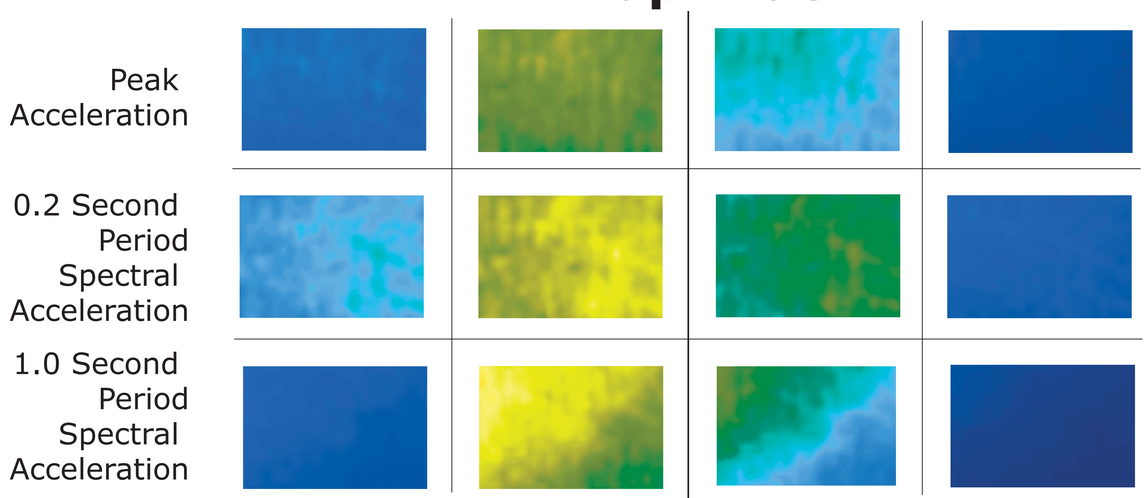

For more information and all maps see http://www.ceri.memphis.edu/usgs or contact U.S. Geological Survey, 3876 Central Ave., Suite 2, Memphis, TN 38152.