SEISMIC GROUND MOTION SUPPLEMENT INFORMATION

Abstract: This dataset represents seismic ground motion hazard in the United States. The data represent a model showing the probability that ground motion will reach a certain level. This map layer shows peak horizontal ground acceleration (the fastest measured change in speed, for a particle at ground level that is moving horizontally due to an earthquake) with a 2% probability of exceedance in 50 years. Values are given in %g, where g is acceleration due to gravity, or 9.8 meters/second^2. The lines of equal hazard, which are the lines between the polygons, were determined by interpolating from a grid of equally spaced points in latitude and longitude. Each point was weighted based on the seismic hazard at that location. The grid spacing is 0.1 degrees for Alaska and the conterminous United States, 0.02 degrees for Hawaii, and 0.05 for Puerto Rico and the U.S. Virgin Islands. The data are intended for geographic display and analysis at the national level, and for large regional areas. The data should be displayed and analyzed at scales appropriate for 1:2,000,000-scale data.

Purpose: This dataset represents seismic ground motion hazard in the United States. The data represent a model showing the probability that ground motion will reach a certain level. This map layer shows peak horizontal ground acceleration (the fastest measured change in speed, for a particle at ground level that is moving horizontally due to an earthquake) with a 2% probability of exceedance in 50 years. Values are given in %g, where g is acceleration due to gravity, or 9.8 meters/second^2. The lines of equal hazard, which are the lines between the polygons, were determined by interpolating from a grid of equally spaced points in latitude and longitude. Each point was weighted based on the seismic hazard at that location. The grid spacing is 0.1 degrees for Alaska and the conterminous United States, 0.02 degrees for Hawaii, and 0.05 for Puerto Rico and the U.S. Virgin Islands.

Supplemental Information: This map layer was prepared by combining spatially-smoothed historic seismicity information with information from fault-specific sources. The acceleration values contoured are the random horizontal component. The reference site condition is firm rock, defined as having an average shear- wave velocity of 760 meters/second in the top 30 meters corresponding to the boundary between National Earthquake Hazards Reduction Program (NEHRP) site classes B and C. For more information about the USGS National Seismic Hazard Maps, please visit <http://earthquake.usgs.gov/research/hazmaps/index.php. A description of how the underlying geologic and geophysical data were prepared as well as the methodology used in calculating seismic hazard for a geographic location can be found in the following reports: Frankel, A., C. Mueller, T. Barnhard, D. Perkins, E.V. Leyendecker, N. Dickman, S. Hanson, and M. Hopper, 1996, National Seismic-Hazard Maps: Documentation June 1996: U.S. Geological Survey Open-File Report 96-532, 110 p. Klein, F.W., A.D. Frankel, C.S. Mueller, R.L. Wesson and P.G. Okubo, 2001, Seismic Hazard in Hawaii: high rate of large earthquakes and probabilistic ground motion maps, Bulletin of the Seismological Society of America, v. 91, pp. 479-498. Petersen, M., W. Bryant, C. Cramer, T. Cao, M. Reichle, A. Frankel, J. Lienkaemper, P. McCrory, and D. Schwartz, 1996, Probabilistic Seismic Hazard

Assessment for the State of California: California Division of Mines and Geology Open-File Report 96-08, 66 p., and U.S. Geological Survey Open-File Report 96-706, 66 p. Wesson, Robert, Arthur Frankel, Charles Mueller, and Stephen Harmsen, 1999, Probabilistic Seismic Hazard Maps of Alaska: U.S. Geological Survey Open-File Report 99-36, 48 p.