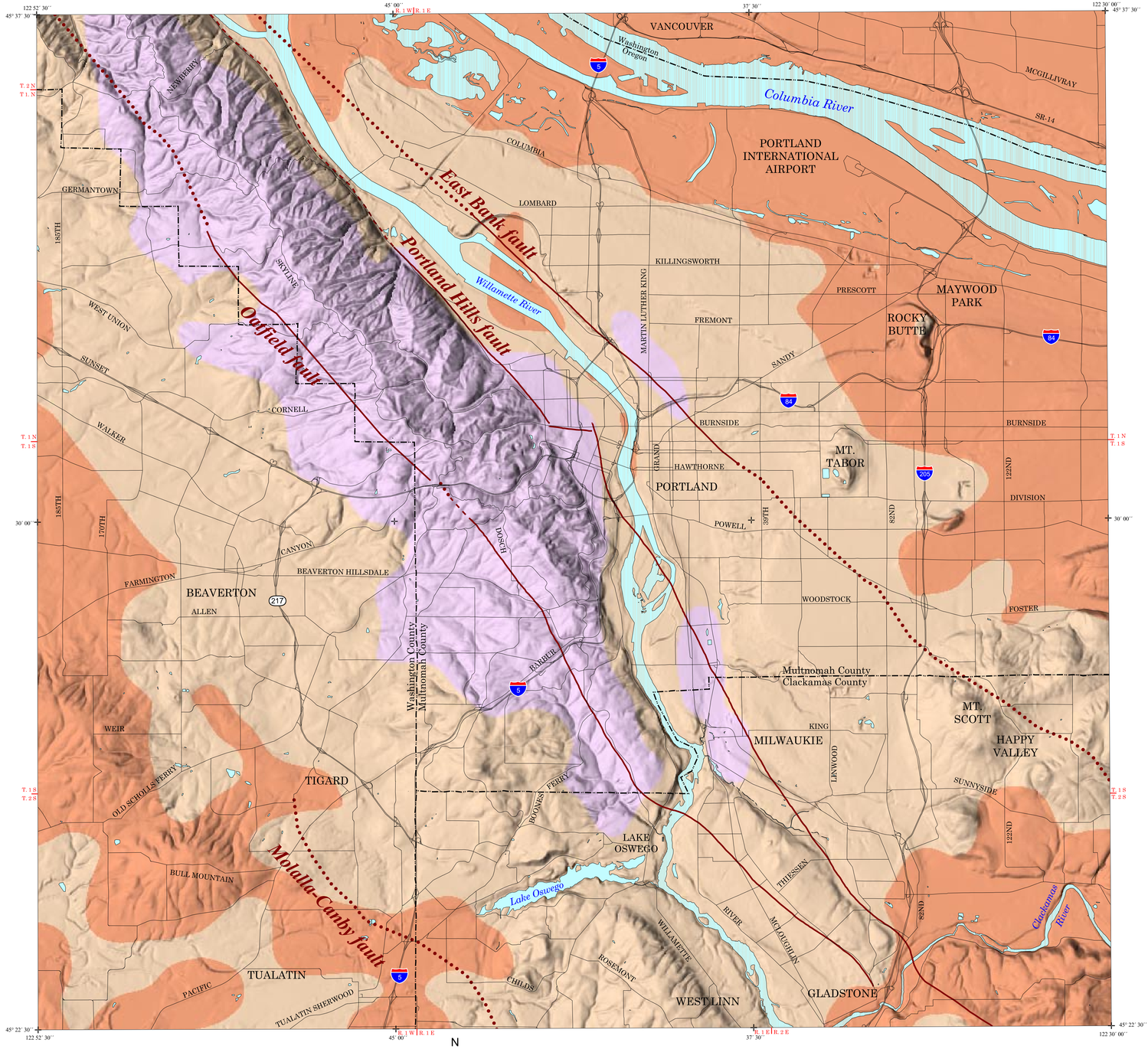
Probabilistic Earthquake Ground Shaking Map for the Portland, Oregon, Metropolitan Area

10% Probability of Exceedance in 50 Years
Peak Horizontal Acceleration (g) at the Ground Surface

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
JOHN D. BEAULIEU, STATE GEOLOGIST



Base Map Data from REGIONAL LAND INFORMATION SYSTEM,
Metro Data Resource Center. Relief Shading Derived From
USGS 7.5 Minute Quadrangle Digital Elevation Model Data.

Universal Transverse Mercator Projection, Zone 10
1927 North American Datum.

N

1:62,500

5000 0 5000 10000 FEET

1 0 1 2 KILOMETERS

1 0 1 MILES

IMS - 16

Earthquake Scenario and Probabilistic Ground Shaking Maps
for the Portland, Oregon, Metropolitan Area

by

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Peak Horizontal Acceleration (g) at the Ground Surface

Peak Horizontal Acceleration (g)	Modified Mercalli Intensity (from Wald et al., 1999)	
0.20 - 0.25	VII	Very strong shaking. Negligable damage in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or designed structures.
0.25 - 0.30		
0.30 - 0.35		

Note: The values associated with color keys vary on individual maps.

POTENTIALLY SEISMOGENIC FAULTS

- Mapped
- Inferred in this study
- Interpreted from aeromagnetic data

Data Sources: Madin, 1990, Beeson et al., 1991, and Blakely et al., 1995

Note: The locations of faults as depicted on these maps may have errors of up to 500 meters or more, particularly if they are concealed or based on aeromagnetic data.

MAP AREA LOCATION

USGS 7½ Minute Quadrangles

Limitations

There are large uncertainties associated with ground motion prediction in the Pacific Northwest due to a limited amount of region-specific information and data on the characteristics of seismic sources and ground motions. In the portrayal of the Cascadia subduction zone scenario, the uncertainties in the geometry and eastward extent of the rupture are particularly large. Additional uncertainty stems from the characterization of the subsurface geology beneath Portland and the estimation of the associated site response effects on ground motions. Thus the maps should not be used for site-specific design or in place of site-specific hazard evaluations.

This project was a cooperative effort between URS Greiner Woodward Clyde Federal Services and the Oregon Department of Geology and Mineral Industries. The project is supported by the U.S. Geological Survey under the National Earthquake Hazards Reduction Program Award 1434-HQ-96-GR-02727. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government.

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