

Liquefaction Susceptibility Map of the Salem East and Salem West Quadrangles, Marion and Polk Counties, Oregon

1996

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Relative Earthquake Hazard Maps of the Salem East and Salem West Quadrangles,
Marion and Polk Counties, Oregon

By Y. Wang and W.J. Leonard

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Plate 1

Explanation

- Category 5 >24 feet estimated thickness of liquefiable material
- Category 4 >18-24 feet estimated thickness of liquefiable material
- Category 3 >12-18 feet estimated thickness of liquefiable material
- Category 2 >6-12 feet estimated thickness of liquefiable material
- Category 1 <6 feet estimated thickness of liquefiable material
- Category 0 No susceptibility, with possible exceptions in small, localized areas

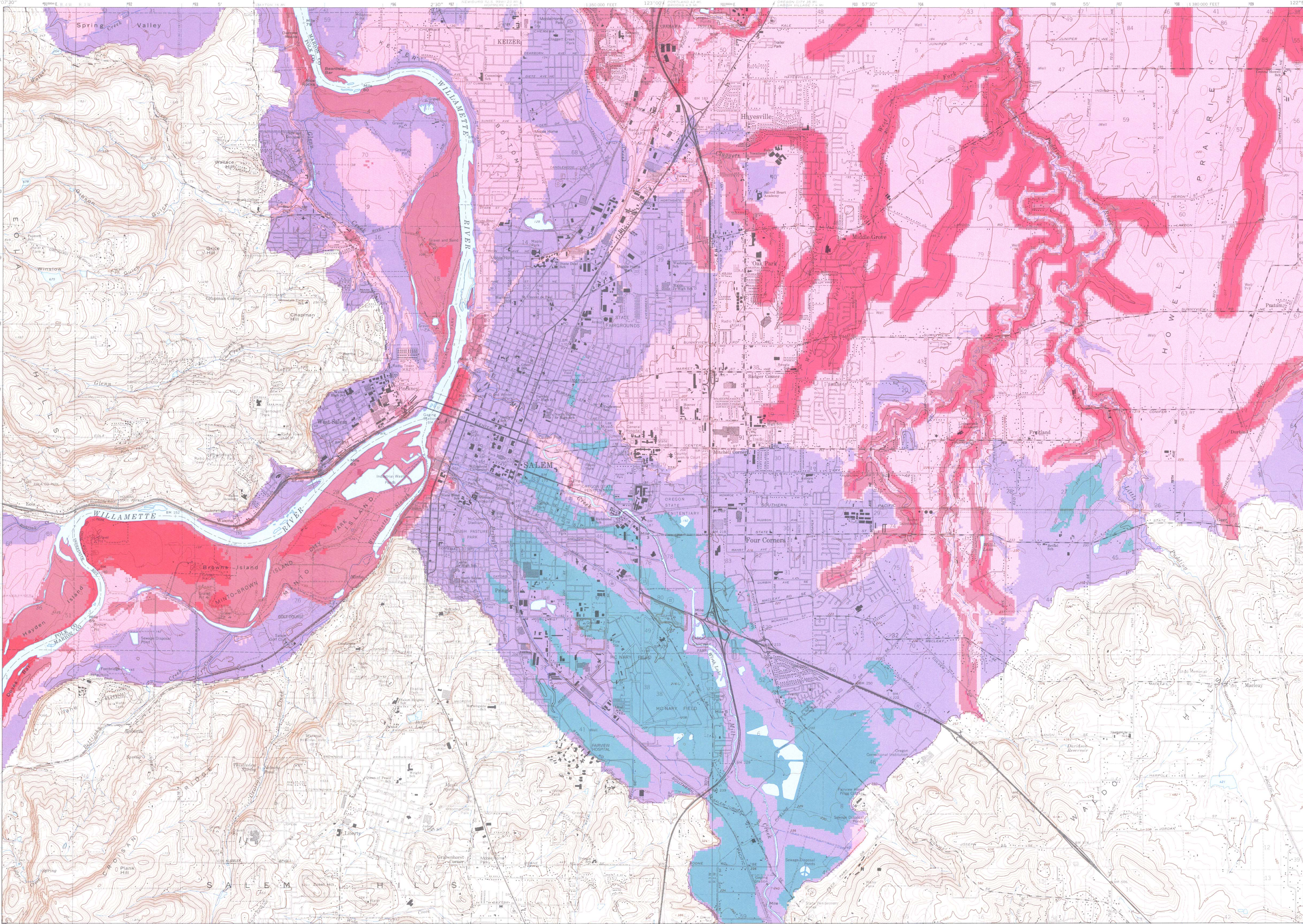
This liquefaction susceptibility map depicts six categories identifying levels of susceptibility to earthquake-induced liquefaction. Refer to the companion text, which explains details of the liquefaction hazards associated with this map and of the different categories. In category 0, no susceptibility is expected—with possible exceptions in small, localized areas. For categories 1-5, susceptibility is based on estimated available thickness of liquefiable material.

Liquefaction, the loss of soil strength due to increases in pore pressures, is often compared to "quicksand". Loose, water saturated, sandy soils can liquefy from earthquake shaking and can produce extensive damage. Hazards often involve structural and foundation failures due to differential movement in the vertical direction between the structure and the ground and lateral spreading, that is, horizontal movement of surface soil layers down gentle slopes or towards free faces (such as river banks). Ruptured pipelines, displaced bridge abutments, damaged buildings and other structures, and flotation of buoyant underground structures are potential hazards associated with liquefaction.

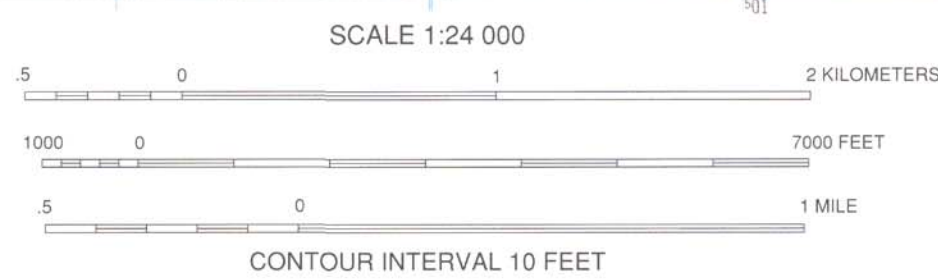
This liquefaction susceptibility map may be used to gain an understanding of liquefaction hazards, so that steps may be taken to reduce the risk to life and property through planning policy and other mitigation measures. User groups include but are not limited to local jurisdictions, building officials, land use planners, emergency preparedness and response planners, engineering and geology consultants, lifeline managers, developers, realtors, insurers, and private citizens.

This map was developed to serve as a regional planning tool and does not have site-specific accuracy. All areas shown on the map are susceptible to earthquake shaking, regardless of the assigned hazard zone.

Please note:
Information provided in this publication should NOT be used in place of site-specific studies. The relative hazard zones are not intended to replace site-specific evaluations, such as for engineering analysis and design. Site-specific earthquake hazards should be assessed through geotechnical or engineering geology investigation by qualified practitioners.



Base map by U.S. Geological Survey
Control by USGS, USCGS, and State of Oregon
Polyconic projection, 1927 North American datum
10,000-foot grid based on Oregon coordinate system, north zone
1000-meter Universal Transverse Mercator grid ticks,
zone 10, shown in blue



Hazard analysis by Yumei Wang and William J. Leonard,
Oregon Department of Geology and Mineral Industries

Cartography by Paul E. Staub

The geologic hazard information on this map is available in digital formats