



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

1996

GMS-105

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

By Y. Wang and W.J. Leonard

Funded in part by the city of Salem, and Oregon State Lottery funds appropriated to the Oregon Department of Geology and Mineral Industries

Plate 3

Explanation

- Category 5 High susceptibility to landsliding in areas with existing landslides
- Category 4 >22 degrees of slope angle
- Category 3 ≥14-22 degrees of slope angle
- Category 2 ≥6-14 degrees of slope angle
- Category 1 <6 degrees of slope angle in hills
- Category 0 <6 degrees of slope angle in valley

This landslide susceptibility map depicts six categories identifying levels of susceptibility to landsliding associated with earthquake shaking. Refer to the companion text, which explains details of the landsliding hazards associated with this map and of the different categories. The six categories of susceptibility to landsliding range from category 0, where no susceptibility is expected (flat ground in the valley)—with possible exceptions in small localized areas—to category 5 with high but unquantified susceptibility to landsliding because of existing landslides. For categories 0-4, susceptibility is based on calculated slope angles.

Landslides, which generally occur on steep slopes composed of weak rock or soil, can be triggered by earthquake motions. Earthquakes can reactivate former landslide areas or generate new slides. Landslide activities can bury extensive areas, damage structures, and destroy or block roads. Landslides may also occur without the influence of earthquakes, simply because of unusually heavy or prolonged rainfall and oversteepening of slopes by natural processes or human influence. Areas affected by human activities, such as roadcuts and mine excavations, have not been specifically addressed herein.

This landslide susceptibility map may be used to gain an understanding of landslide hazards, so that steps can 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. The zones can be used for purposes involving potential landsliding hazards not associated with earthquake shaking.

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 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.

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