WASHINGTON DIVISION OF GEOLOGY AND EARTH RESOURCES
REPORT OF INVESTIGATIONS 37
Landslide and Liquefaction Maps for the Long Beach Peninsula, Pacific County, Washington: Effects on Tsunami Inundation Zones of a Cascadia Subduction Zone Earthquake
Sheet 2 of 3
Pamphlet accompanies map

A

B

C

Sheet 2. Shallow landslide vulnerability during a wet period for a Cascadia subduction zone magnitude 9+ earthquake for the Long Beach Peninsula, Pacific County, Washington

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October 2013

Relative vulnerability to slope failure

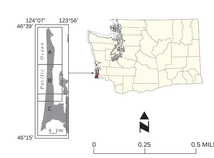
- High
- Medium
- Low
- All others not evaluated

Map symbols

- Wetland or cranberry bog
- Evacuation route
- Upland/lowland division
- 20-foot contour
- Hiking trail
- Post-tsunami assembly area
- Medical facility
- Airport
- Hiking trail
- Lighthouse
- Campground
- Recreational vehicle park

Shallow landslide vulnerability for the Long Beach Peninsula is based on the critical acceleration (a_c) of slopes by ground motions that the region might experience from a Cascadia subduction zone magnitude 9+ earthquake. The hazard ratings are qualitative indicators based on the difference between the a_c and peak ground acceleration (PGA) for each grid. High hazard is an a_c less than 0.2 *g*, medium hazard is an a_c between 0.2 *g* and 0.3 *g*, and low hazard is an a_c between 0.3 *g* and 0.4 *g*; slopes greater than 0.4 *g* were not rated. Different methods of analysis were used for the uplands that consist of soil overlaying bedrock and the lowlands that consist of sand and beach sand.

This plate represents wet conditions where groundwater was modeled at the surface (0 ft) for the uplands and 3 ft below the surface for the lowlands. The uplands and lowlands are divided by a dashed gray line. Groundwater depth was assumed to be uniform for each area of analysis.



Lambert conformal conic projection
North American Datum of 1983
Shaded relief generated from a lidar bare-earth digital elevation model (available from Puget Sound Lidar Consortium, http://pugetsoundlidar.ess.washington.edu/); sun azimuth 315°; sun angle 45°
Digital cartography and GIS by Stephen L. Slaughter, Ian J. Hubert, and Anne C. Olson
Editing and production by Jaretta M. Roloff

Tsunami evacuation routes and post-tsunami evacuation areas are not intended for emergency use and are included for reference purposes only. The objective of these map products is to assist city and emergency management officials in evaluating the suitability of existing evacuation routes and assembly areas for potential vulnerability to ground failure from a M9+ CSZ earthquake. Results of this report could necessitate modifying, adding, or removing current tsunami evacuation routes and/or post-tsunami assembly areas.

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