WASHINGTON STATE DEPT OF
NATURAL RESOURCES
WASHINGTON GEOLOGICAL SURVEY

Potential Impact of Permanent Ground Deformation to Electrical Transmission Structures

Cascadia Subduction Zone Magnitude 9.0 Earthquake, Wet (Saturated) Soil Scenario

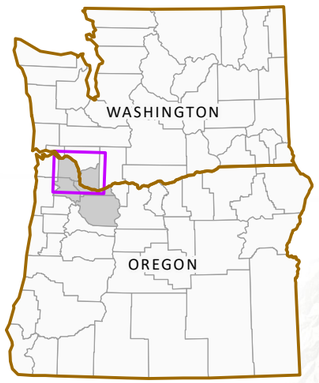
Potential Permanent Ground Deformation at Electrical Transmission Pole/Tower

- < 1.0 meter
- 1.0–2.0 meters
- > 2.0 meters

Substation (limited to study area. Not all substations shown)

Transmission Line Corridor (outside of study area)

Permanent ground deformation at the pole/tower site takes the maximum of ground deformation due to earthquake-induced landslides and lateral spread from liquefaction (Plate 7). Probability of occurrence for structures with > 1 meter permanent ground deformation is between 20% and 30% (Plate 8).



0 2.5 5 10 Miles
0 4 8 16 Kilometers

Source Data:
Hydrography: National Hydrography Dataset, 2018
Substations and transmission line corridors: Dept. of Homeland Security Homeland Infrastructure Foundation-Level Data (HIFLD), 2017
Cities and towns: Oregon Dept. of Transportation, 2018; Washington Dept. of Transportation, 2019
Projection: Lambert Conformal Conic, EPSG 2913.