SEISMIC HAZARD AREAS

HAZARD DESCRIPTION

Earthquakes are one of nature’s most damaging hazards. They usually occur without warning and within just a few seconds can cause massive damage and extensive casualties. The effects of an earthquake can be felt far beyond the site of its occurrence.

An earthquake is a sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of tectonic plates. These giant plates make up the earth’s crust and move very slowly over the surface of the globe. In areas where the plates are in contact, stresses build up.

SPOTLIGHT: 2001 NISQUALLY EARTHQUAKE

On February 28, 2001, a 6.8 magnitude earthquake occurred 30 miles below the Nisqually Delta, causing damage across much of the state. In the days after the quake, a state of emergency and a Presidential Disaster Declaration were issued.

Impacts

- Death and injury: 400 injuries, 1 death
- Federal disaster aid applicants: 41,414
- Total damage estimates: $1 - $4 billion
- Federal assistance to date: $334 million
- Building damage:
  - Downtown Olympia and Seattle’s Pioneer Square area hit hard.
  - Several of the government buildings in Olympia, including the capitol, were significantly damaged.
  - Damage to residences; the most common damage was to chimneys.
- Transportation Damage:
  - Serious damage to Seattle-Tacoma International Airport
  - 4th Avenue Bridge and Deschutes Parkway in Olympia were destroyed and remained closed until rebuilt.
- Other Impacts: landslides, power outages, damage to dams, landline and wireless communications were overwhelmed by user demand.

SEISMIC CONSIDERATIONS IN CRITICAL AREAS ORDINANCE

Building requirements for seismic considerations are located in the Thurston County Building and Construction Code (Title 14 TCC). Thurston County falls under the seismic design category “D1.”

ASSESSING VULNERABILITY

Summary Assessment

According to the Natural Hazards Mitigation Plan for the Thurston Region, there is high probability that another damaging earthquake will occur sometime in the next 25 years. Damage from previous earthquakes indicates that a large earthquake could have a catastrophic impact on Thurston County, suggesting high vulnerability.

Delineation of Earthquake Liquefaction Hazard Area

Liquefaction occurs when ground shaking causes loose soils to act like viscous fluid. For more information on liquefaction, see the “Liquefaction Susceptibility Map of Thurston County, Washington” from the Washington State Department of Natural Resources.