Improved Road

Tsunami Inundation Map Index

Profiles show that there may be a steep splay fault running nearly parallel to the fault geometries that could amplify the amount of seawater run-up. The range of earthquake and tsunami sizes that take into account different scenarios indicates that at least 19 major ruptures of the full length of the Cascadia Subduction Zone (CSZ) have occurred over the past 10,000 years. The most recent event occurred on January 26, 1700. The 1700 earthquake had an magnitude of approximately 9.1-9.3 and traveled 2040 miles inland; older tsunami sand deposits have also been discovered in Oregon. This event is compared to the 2004 Sumatra and 2011 Japan earthquakes (Witter and others, 2011). The 2004 Sumatra earthquake had a magnitude of 9.0, traveled 3800 miles inland, and was felt across the Pacific rim. The most recent event is compared to the 2011 Japan earthquake that had a magnitude of 9.0, traveled 200 miles inland, and was felt across North America.

The North American Plate rides over the Juan de Fuca Plate at a rate of approximately 1.5 inches per year. When the North American Plate suddenly slips westward over the Juan de Fuca Plate, the earthquake and tsunami occurs. DOGAMI's work is designed to help cities, counties, and other sites in the potential tsunami-prone areas. Using federal funding awarded by NOAA, DOGAMI has developed a new Tsunami Inundation Map Doug-04 for Reedsport, Oregon. This map is based on hydrodynamic tsunami modeling by Portland State University (Jarrett and others, 2008). Figure 3: This block diagram depicts the tectonic setting of the region. See Figure 2 for the sequence of events during an earthquake and tsunami event. A tsunami wave travels as a large, high-energy wave that can travel long distances across the ocean and can reach the shore as a high surge. The tsunami wave to arrive onshore. Therefore evacuees should not assume that the tsunami event is over until the proper authorities have sounded the all-clear signal at the end of the evacuation. Figure 5: In addition to the tsunami wave height and velocity observed are not necessarily associated with the first wave. The cumulative number of buildings inundated within the map area. The map legend depicts the wet and dry contour lines is termed the Wet/Dry Zone, which equates to a 10% and that such earthquakes occur about every 500 years (WGCEP, 2009). DOGAMI is working with neighboring states to better understand the Cascadia Subduction Zone and to better protect the Pacific Northwest.

The map also shows the regulatory tsunami inundation line (Oregon Revised Statutes 455.446 and 455.447), commonly known as the Senate Bill 379 Line. This line indicates the overall wave height and inundation extent for all five tsunami scenarios over an 8-hour period. The starting water elevation (0.0 hour) takes into account the local land subsidence or uplift caused by the earthquake. Wave heights vary through time, and the first wave will not necessarily be the largest as waves interfere and reflect off local topography and bathymetry. Any absence of data indicates periods for which tsunami inundation has not yet reached or has receded from the station location and dry land is exposed. The tsunami wave height is given in feet and the tsunami wave velocity is given in feet per second. The numbers in parentheses indicate the range of wave heights measured at the tide gauge. The tsunami wave height is given in feet and the tsunami wave velocity is given in feet per second. The numbers in parentheses indicate the range of wave heights measured at the tide gauge.

Local Source (Cascadia Subduction Zone) Tsunami Inundation Map
Reedsport, Oregon

Legend
- Water Bodies
- Basemap Data
- Source Data
- Development (DLCD)