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Tsunami Inundation Scenarios

The table and chart show the number of buildings inundated for each "tsunami T-shirt scenario" for cities along the Oregon coast: a multi-deterministic analysis of tsunami hazard. The table includes the range of buildings inundated for each scenario and the respective amounts of slip, the frequency of occurrence, and the magnitude of the last 19 great earthquakes produced subsidence and the tsunami-amplifying effects of earthquake-induced subsidence.

Map Explorations

Features on the map include the Cascadia Subduction Zone (CSZ), the Juan de Fuca Plate during a CSZ event. DOGAMI has modeled a wide range of tsunami scenarios and their effects on the coast. The map shows the overall wave height and inundation extent for all five "gauge" locations in the area. These points are simulated gauge stations that are converted to wet and dry contour lines that form the extent of inundation. The transition area between the wet and dry areas is depicted in the map.

Tsunami Hazard Mitigation Program

Using federal funding awarded by NOAA, DOGAMI has developed a new tsunami hazard mitigation program. DOGAMI's work is designed to help cities, counties, and other sites prepare for tsunami events. This program has been administered by the National Oceanic and Atmospheric Administration (NOAA) since 1995.

Figure 4

This block diagram depicts the tectonic setting of the region. See Figure 2 for the sequence of events leading to tsunami inundation. The map shows the maximum wave elevation profiles for each "tsunami T-shirt scenario." These profiles depict the expected maximum tsunami wave elevation for the five "tsunami T-shirt scenarios" along lines A-A' and B-B'. The tsunami scenarios are modeled to occur at high tide and to account for local subsidence or uplift of the ground surface.

Figure 3

This map was funded under award #NA09NW54670014 by the National Oceanic and Atmospheric Administration (NOAA) through the Tsunami Hazards Program. The map was created using Esri ArcGIS® 10.1, Microsoft® Excel®, and Esri ArcMap®. The map includes data from various sources, including DOGAMI Lidar Data Quadrangles, DOGAMI Transportation data, and Lane County Development (DLCD) data. The map also includes source references from various publications such as George R. Priest, Kaleena L.B. Hughes, Sean G. Pickner, and Baptista, A.M., 2009, Tsunami hazard assessment of the northern Oregon coast: a multi-deterministic analysis. The map was created by Taylore E. Wille, Cartography Industries Special Paper 41, 87 p.