



Multi-Hazard Risk Report (DRAFT)

For Tillamook County including the Cities of Bay City, Garibaldi, Manzanita, Nehalem, Rockaway Beach, Tillamook, Wheeler & Unincorporated Communities of Neskowin, Oceanside, Netarts, and Pacific City

Draft for local review – June 3, 2016

Excerpted for
Tillamook County Multi-Jurisdictional Natural Hazards Mitigation Plan Update
Steering Committee Meeting
Monday, June 6, 2016

Executive Summary

This report describes the methods and results of natural hazard risk assessments performed by the Oregon Department of Geology and Mineral Industries (DOGAMI) for the communities of Tillamook County. This effort was funded by FEMA Region X through its Risk Mapping Assessment and Planning (Risk MAP) Program. All data used to generate the results are provided in the Risk Assessment Database, which is distributed with this report. The Multi-Hazard Risk Report has two goals: (1) to provide a quantitative risk assessment that informs communities of their risks related to certain natural hazards and (2) interpret the results to identify specific mitigation opportunities (i.e. areas of mitigation interest) that the communities can act upon. State and local officials should use the summary information provided in this report in conjunction with the data in the Risk Assessment Database to:

- **Update local hazard mitigation plans and community comprehensive plans** – Planners can use risk information in the development or update of hazard mitigation plans, comprehensive plans, future land use maps, and zoning regulations. For example, zoning codes may be changed to better provide for appropriate land uses in high hazard areas.
- **Update emergency operations and response plans** – Emergency managers can identify low risk areas for potential evacuation and sheltering. Risk assessment information may show vulnerable areas, facilities and infrastructure for which planning for continuity of operations plans (COOP), continuity of government (COG) plans, and emergency operations plans (EOP) would be essential.
- **Communicate risk** – Local officials can use the information in this report to communicate with property owners, business owners, and other citizens about risks and areas of mitigation interest.
- **Inform the modification of development standards** – Planners and public works officials can use information in this report to support the adjustment of development standards for certain locations.
- **Identify mitigation projects** – Planners and emergency managers can use this risk assessment to determine specific mitigation projects. For example, a floodplain manager may identify critical facilities that need to be elevated or removed from the floodplain.

The risk assessment was performed using Esri's ArcGIS and FEMA's Hazus-MH software and used two approaches. The first was to estimate damage (in dollar loss) to buildings from flood and earthquake scenarios. The second was to tally number of buildings, their value, and associated populations that are exposed to earthquake, flood, and tsunami inundation scenarios, or susceptible to varying levels of hazard from landslides, coastal erosion, and wildfire.

Results were broken out for the following geographic areas:

- Tillamook County (unincorporated areas)
- Community of Neskowin
- Community of Oceanside-Netarts

- Community of Pacific City
- City of Bay City
- City of Garibaldi
- City of Manzanita
- City of Nehalem
- City of Rockaway Beach
- City of Tillamook
- City of Wheeler

Selected Countywide Results

Total buildings: 27,371

Total estimated building value: \$2.8 billion

Cascadia Subduction Zone Magnitude 9.0 Earthquake Shaking

Buildings (red tagged): 6,660
Buildings (yellow tagged): 2,507
Loss Estimate: \$722 million

Cascadia Subduction Zone Magnitude 9.0 Tsunami Inundation

Buildings: 5,167
Exposed building value: \$561 million

100-year Flood Scenario

Number of buildings exposed: 2,777
Loss estimate: \$22 million

Landslide (High and Very High-Susceptibility):

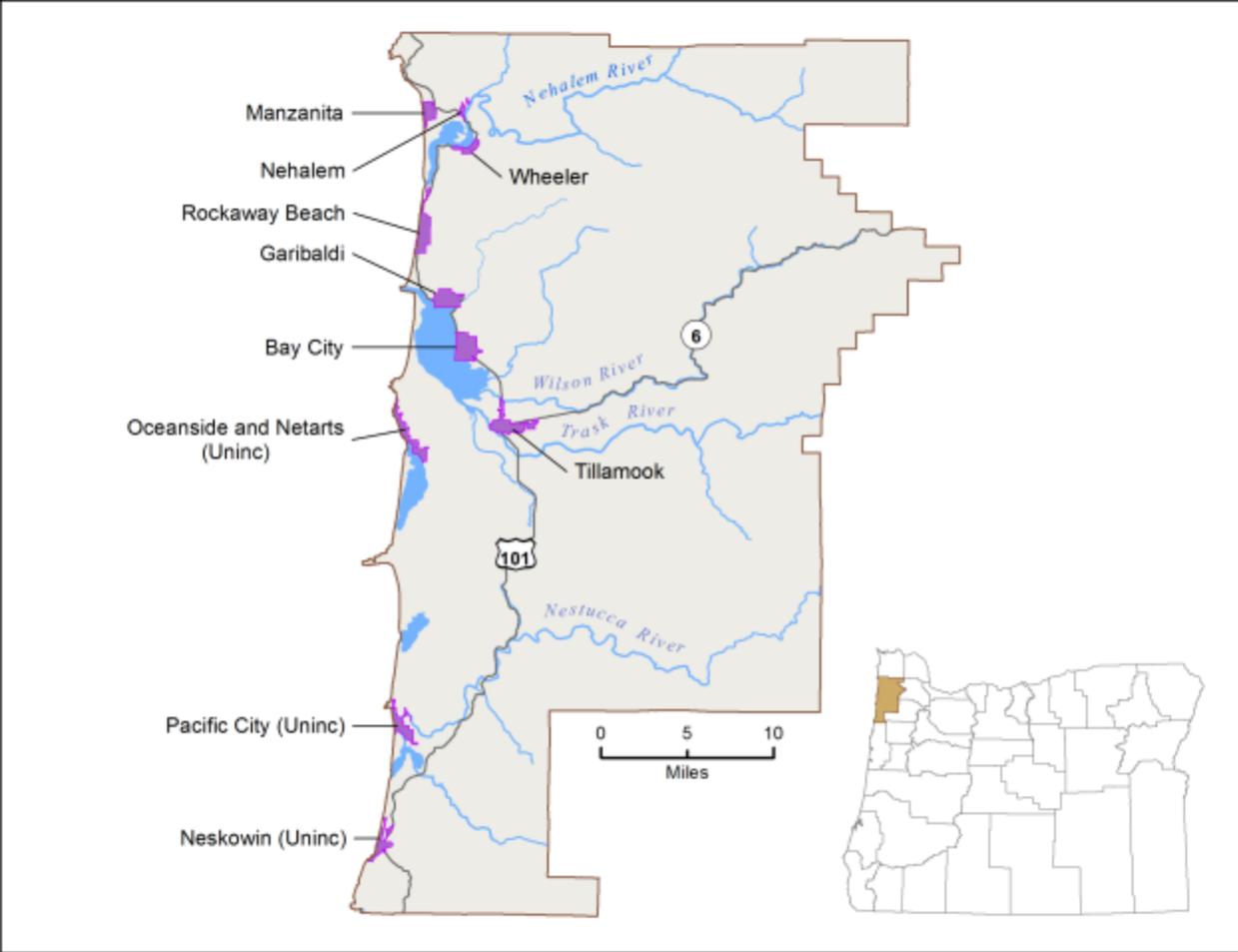
Buildings: 7,906
Exposed building value: \$779 million

Coastal Erosion (High-Susceptibility):

Number of buildings: 609
Exposed building value: \$117 million

Wildfire Results (High Threat):

Number of buildings: 74
Exposed building value: \$2 million



Map 1: Overview of project area.