

# Appendix C

## HAZUS-MH Risk Assessment

This appendix provides the full text of the Hazard Risk Assessment using HAZUS-MH, produced in by Tetra Tech EM Inc. for the Portland Office of Emergency Management. It provides important background for the action items and hazard assessments included in this natural hazard mitigation plan.

Portland's risk assessment was completed in 2001 as part of a pilot project initiated between the Federal Emergency Management Agency and the City of Portland. The project was designed to demonstrate the applicability of using Hazards U.S. Multi-Hazard (HAZUS-MH) software to address the risk assessment requirements of the Disaster Mitigation Act of 2000 (DMA 2000). The risk assessment project was conducted to evaluate priority hazards of primary concern to the community, and to estimate potential damages and losses. The risk assessment provides a foundation for the community's decision makers to evaluate mitigation measures that can help reduce the impacts of future hazard events.

Two methodologies were used to assess potential exposure and losses associated with priority hazards for this pilot project. For flood and earthquake, specific hazard parameters (ground motion for earthquake and discharge velocity for flood) were compared to a variety of infrastructure inventory parameters (for example, first floor elevations and building types). These were modeled to determine potential impact to humans, buildings, roads, and other assets. For landslide and wildland fire, historic data were not adequate to support the estimation and modeling of future events and losses. Instead, HAZUS-MH inventory data, professional judgment, and hazard area data regarding the geographic scope of each hazard were used to estimate exposure. Over the long term, Portland will collect additional data to assist in estimating potential losses for these hazards.

The value of such a study in the City of Portland is three-fold. First, it provides a basis for mitigation decision making through a federally recognized quantitative methodology. Second, it estimates potential loss from a disaster through GIS mapping and consistent, defensible data that is accepted in applications for expedited disaster recovery reimbursement requests. Third, it provides risk information in the form of maps and statistics that appeal to planners, engineers, and program developers who might not ordinarily consider disaster management in their planning.

INSERT HAZUS-MH RISK ASSESSMENT HERE