

Section 3: Hazard Assessment Updates

Hazard Identification

Clackamas County and partner agencies continue to improve hazard maps as new data and information become available. The 2007 Plan Update includes new hazard maps for Earthquake (groundshaking, amplification, and liquefaction), Wildfire (Wildland Urban Interface, Fuels Loading, Communities at Risk), and Landslide (including debris flow areas).

The following table can be used to navigate the NHMP hazard maps. Please note that the wildfire maps have not been numbered, as they are included in the Clackamas Community Wildfire Protection Plan as a separate document. Also, the critical and essential facilities and infrastructure maps have been removed for security purposes.

Table 3-1. List of Hazard Mitigation Plan Maps

Map #	Type of Map	Section of the Plan
1	Base Map of Clackamas County	Section 1: Introduction
2	Precipitation	Section 2: Community Profile
3	County 100-Year Flood plain	Section 6: Flood
4	River basin Map	Section 6: Flood
5	Slope Map	Section 7: Landslides
6	Landslide	Section 7: Landslides
7	Debris Flow Areas	Section 7: Landslides
	Wildfire Risk Areas	Addendum 1: CCWPP
8	Liquefaction	Section 11: Earthquake
9	Amplification	Section 11: Earthquake
10	Relative Earthquake Hazards	Section 11: Earthquake
11	Volcano Risk Area	Section 12: Volcanic Eruption

Community Assets

This section outlines the resources, facilities and infrastructure that, if damaged, could significantly impact public safety, economic conditions, and environmental integrity of Clackamas County. The key community assets identified by the County are as defined as follows:

Critical Facilities (Map 3): are facilities and infrastructure necessary for emergency response efforts such as law enforcement offices, fire stations, hospitals, 9-11 centers, American Medical Response facilities, some county buildings, city halls, and schools (if in session).

Essential Facilities: are facilities and infrastructure that supplement response efforts, including potential shelter sites such as airport runways, Camp Withycombe, Lake Oswego Armory, designated Red Cross shelter sites

Infrastructure: is infrastructure that provides services for the City of West Linn, including: regional emergency transportation routes, bridges, railroads, potable water systems, waste water treatment systems, electrical, and natural gas transmission lines power substations, power generation facilities, communications towers, major dams, surface water management infrastructure, and river gauges.

Vulnerable Populations: Other infrastructure also includes locations serving populations that have special needs or require special consideration such as primary schools and kindergartens, as well as assisted living care facilities.

Economic Centers: are businesses that employ large numbers of people, and provide an economic resource to Clackamas County. If damaged, the loss of these economic centers could significantly affect economic stability and prosperity. **Population Centers** usually are aligned with economic centers, and will be of particular concern for evacuation/notification during a hazard event. Economic assets and employment centers consist of employers having greater than 250 employees & other large businesses that would affect the tax base.

Vulnerability Assessment

Vulnerability is a measure of the exposure of the built environment to hazards. The exposure of community assets to hazards critical in assessment the degree of risk a community has to each hazard. Identifying the facilities and infrastructure at risk from various hazards can assist the County in prioritizing resources for mitigation, and can assist in directing damage assessment efforts after a hazard event has occurred. The exposure of County assets to each hazard and potential implications are explained in each hazard section. Table 3-2 summarizes the exposure of County assets to natural hazards. Please note that Winter Storm and Windstorm are not included in the table, as there is insufficient data to perform an analysis on these hazards.

Table 3-2. Vulnerability Analysis

Hazard	Acres	% of Total Acres	# of Parcels	% of Total Parcels	Market Value of Parcels	% of Total Market Value	Critical Facilities	Essential Facilities	Infrastructure						Vul Pop	Econ
									Miles of Road	Miles of Water Lines	Miles of Sewer Lines	Bridges	Cell Twrs	Sub Stns		
County Total	1,253,006	NA	141,081	NA	\$41,266,289,753	NA	205	49	4,135	No Data	297	172	16	54	816	132
Earthquake Hazard																
Moderate	231,104	18%	50,521	36%	\$17,822,552,145	43%	45	2	133	0	52	41	3	14	178	23
High	311,758	25%	27,719	20%	\$11,189,998,614	27%	20	7	90	0	30	38	3	8	87	26
Flooding																
Floodplain	24,167	2%	8,609	6%	\$3,522,099,095	9%	3	4	80	0	13	61	0	4	4	3
Overall Wildfire Risk																
Moderate	199,004	16%	40,114	28%	\$14,478,761,105	35%	26	4	127	0	45	67	0	15	46	19
Moderate-High	515,984	41%	14,717	10%	\$4,902,694,221	12%	5	1	66	0	14	26	4	7	11	2
High	180,917	14%	1,537	1%	550,722,654	1%	0	0	13	0	1	3	7	6	6	0
Landslide Hazard																
Moderate	163,923	13%	23,981	17%	\$8,983,963,144	22%	1	0	21	0	9	3	1	1	6	0
High	213,000	17%	21,331	15%	\$8,156,823,220	20%	0	0	13	0	2	2	2	1	1	0
Volcano																
Exposed	208,899	17%	6,997	5%	\$1,064,332,008	3%	1	0	No Data	No Data	No Data	12	1	1	0	0

*Analysis of properties that intersect the hazard include property in taxlots that intersect the hazard, but may also include property that does not physically reside in the hazard itself.