

## CHAPTER 810 LANDSLIDE HAZARDS

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**810.001. Purpose.** The purpose of this Chapter is to implement the Geologic Hazards policy of the Scenic and Historic Areas, Natural Resources, and Hazards section of the Salem Area Comprehensive Plan and to promote the public health, safety and welfare by:

- (a) Assessing the risk that proposed uses or activities will adversely affect the stability and slide susceptibility of an area;
- (b) Establishing standards and requirements for the use and development of land within landslide hazard areas; and
- (c) Mitigating risk within landslide hazard areas. (Ord No. 31-13)

**810.005. Applicability.** This chapter applies to all areas of land designated as Moderate Landslide Hazard Risk or High Landslide Hazard Risk pursuant to this Chapter. (Ord No. 31-13)

**810.010. Definitions.** Unless the context otherwise specifically requires, as used in this Chapter, the following mean:

- (a) Certified Engineering Geologist: Any Registered Geologist who is certified in the specialty of Engineering Geology under provisions of ORS 672.505 to 672.705.
- (b) Geological assessment: An assessment prepared and stamped by a Certified Engineering Geologist, detailing the surface and subsurface conditions of the site and delineating the areas of a property that might be subject to specified geologic hazards.
- (c) Geotechnical Engineer: A Professional Engineer, registered in the State of Oregon as provided by ORS 672.002 to 672.325, who by training, education and experience is qualified in the practice of geotechnical or soils engineering practices.
- (d) Geotechnical report: A report prepared and stamped by a Certified Engineering Geologist and Geotechnical Engineer, evaluating the site conditions and mitigation measures necessary to reduce the risks associated with development in geologically hazardous areas.
- (e) Graduated response tables: Those tables under SRC 810.025 that are used to determine the total landslide hazard risk and required level of site investigation for regulated activities under this Chapter.
- (f) Landslide: The down slope movement of soil, rocks, or other surface matter on a site. Landslides may include, but are not limited to, slumps, mudflows, earthflows, debris flows, and rockfalls.
- (g) Landslide Hazard Susceptibility Map: Cumulatively, the Oregon Department of Geology and Mineral Industries (DOGAMI) Interpretive Map Series IMS-5, IMS-6, IMS-17, IMS-18, and IMS-22 maps, together with the slope contour map.
- (h) Mitigation measure: An action designed to reduce project-induced geologically hazardous area impacts.
- (i) Tree: Any living, woody plant, which grows to 15 feet or more in height, having a trunk which is 10 inches or more dbh.
- (j) Tree removal: To cut down a tree or remove all or 30% or more of the crown, trunk, or root

system of a tree; or to damage a tree so as to cause the tree to decline or die. "Removal" includes, but is not limited to, topping, damage inflicted upon a root system by application of toxic substances, operation of equipment and vehicles, storage of materials, change of natural grade due to unapproved excavation or filling, or unapproved alteration of natural physical conditions. "Removal" does not include normal trimming or pruning of trees. (Ord No. 31-13)

**810.015. Map Adoption.** Areas subject to this Chapter shall be shown on Landslide Hazard Susceptibility Maps, which shall be adopted by administrative rule by the Director pursuant to SRC Chapter 20J. The Landslide Hazard Susceptibility Maps shall indicate the general location of areas of low, moderate, and high susceptibility to landslides, areas of known slide hazards, and slope contours. These maps shall be based on the best available information. (Ord No. 31-13)

**810.020. Landslide Hazard Construction Permit.**

**(a) Applicability.**

(1) Except as provided in paragraph (2) of this subsection, no person shall engage in any of the following activities in areas designated as moderate or high total landslide hazard risk without first obtaining a landslide hazard construction permit.

(A) Excavation or fill, as independent activity, exceeding 2 feet in depth or 25 cubic yards of volume;

(B) Installation or construction of any structure greater than 500 square feet in area;

(C) Alteration, enlargement, reconstruction, or relocation of a structure greater than 500 square feet in area that requires any modification to the foundation;

(D) Land division, planned unit development, or manufactured dwelling park; or

(E) Tree removal, as an independent activity, on regulated slopes greater than 60%.

(2) **Exemptions.** A landslide hazard construction permit is not required for the following:

(A) Excavation and fill exceeding 2 feet in depth or 25 cubic yards of volume within a public right-of-way or public utility easement.

(B) Activities otherwise identified in paragraph (1) of this subsection which must be undertaken immediately to prevent an imminent threat to public health or safety, or prevent imminent danger to public or private property; provided, however:

(i) The person undertaking such emergency activity shall notify the Director within one working day following the commencement of the activity.

(ii) If the Director determines that the activity, or any part thereof, is beyond the scope of allowed emergency activity, enforcement action may be taken.

(b) **Procedure Type.** A landslide hazard construction permit is processed as a Type I procedure under SRC Chapter 300.

(c) **Submittal Requirements.** In lieu of the application submittal requirements under SRC Chapter 300, an application for a landslide hazard construction permit shall include the following:

(1) A completed application form.

(2) A geological assessment, geotechnical report, or both, as applicable.

(d) **Criteria.** A landslide hazard construction permit shall be granted if:

(1) The geological assessment, geotechnical report, or both, as applicable, meets the standards of this chapter; and

(2) The geological assessment, geotechnical report, or both, as applicable:

(A) Indicates the development can proceed without a risk of landslide hazard; or

(B) Sets forth mitigation measures that will reduce or eliminate the risk of landslide hazard.

(e) The Director may, at the City's expense, elect to have an independent Certified Engineering Geologist or Geotechnical Engineer, selected from a list of prequalified consultants, review the report or its conclusions.

(f) Conclusions and recommendations set forth in an approved geological assessment or geotechnical report shall be incorporated as conditions of approval of the landslide hazard construction permit. The landslide hazard construction permit shall be incorporated into any land use approval connected with the regulated activity. (Ord No. 31-13)

**810.025. Landslide Hazard Risk Assessment.**

(a) **Graduated Response Tables.** The Graduated Response Tables set forth in this subsection are used to determine the total landslide hazard risk and required level of site investigation for regulated activities under this Chapter. To determine the total landslide hazard risk, follow the steps set forth in this subsection. Where any portion of a proposed activity is identified under multiple landslide susceptibility ratings, the highest rating shall apply.

(1) **Step One: Earthquake Induced Landslide Susceptibility.** Select one assigned point value from Table 810-1A and proceed to step two.

**TABLE 810-1A  
EARTHQUAKE-INDUCED LANDSLIDE SUSCEPTIBILITY RATINGS**

<b>Table 810-1A: Earthquake-Induced Landslide Susceptibility Ratings</b>	
<b>Physiographic and Geologic Categories</b>	<b>Assigned Point Value</b>
Property identified under Very Low or Low Categories on IMS-17 or IMS-18.	0 Points
Property identified under a Moderate Category on IMS-17 or IMS-18.	2 Points
Property identified under a High Category on IMS-17 or IMS-18.	3 Points
References: Interpretive Map Series (IMS-17), Interpretive Map Series (IMS-18)	

(2) **Step Two: Water-Induced Landslide Susceptibility.** Select one assigned point value from Table 810-1B and proceed to step 3.

**TABLE 810-1B  
WATER-INDUCED LANDSLIDE SUSCEPTIBILITY RATINGS**

<b>Table 810-1B: Water-Induced Landslide Susceptibility Ratings</b>	
<b>Physiographic and Geologic Categories</b>	<b>Assigned Point Value</b>
Property identified under Category 1 on IMS-5 and IMS-6 Reports.	0 Points
Property identified under Categories 2 or 3 on IMS-5 or IMS-6 Reports.	2 Points
Property outside the boundaries of IMS-5, IMS-6, IMS-17, IMS-18, and IMS-22 and between 15% - 25 % slopes, including 25%.	2 Points
Property identified under Categories 4, 5a, 5b, or 6 on IMS-5 or IMS-6 Reports.	3 Points
Property identified in IMS-22 Report.	3 points
Property outside the boundaries of IMS-5, IMS-6, IMS-17, IMS-18, and IMS-22 and over 25% slopes.	3 Points
References: Interpretive Map Series (IMS-5), Interpretive Map Series (IMS-6), Interpretive Map Series (IMS-17), Interpretive Map Series (IMS-18), Interpretive Map Series (IMS-22) and Slope Contour Map	

**(3) Step Three: Activity Susceptibility Ratings.** Select one assigned point value from Table 810-1C and proceed to step four.

**TABLE 810-1C  
ACTIVITY SUSCEPTIBILITY RATINGS**

<b>Table 810-1C: Activity Ratings</b>		
<b>Type of Activity</b>		<b>Assigned Point Value</b>
Excavation or fill, as an independent activity, exceeding 2 feet in depth or 25 cubic yards of volume.		3 Points
Installation or construction of any structure greater than 500 square feet in area.	Single Family, Duplex, or Manufactured Dwelling Building Permit	1 Point
	Multiple Family Building Permit	2 Points
	Schools, Hospital, or Public Building Permit	3 Points
	Commercial or Industrial Building Permit	3 Points
Alteration, enlargement, reconstruction, or relocation of a structure greater than 500 square feet in area that requires any modification to the foundation.	Single Family, Duplex, or Manufactured Dwelling Building Permit	1 Point
	Multiple Family Building Permit	2 Points
	Schools, Hospital, or Public Building Permit	3 Points
	Commercial or Industrial Building Permit	3 Points
Installation or construction of any structure greater than 500 square feet, not otherwise identified in table.		1 Point
Land division, planned unit development, or manufactured dwelling park.	Partition	2 Points
	Subdivision, Planned Unit Development, Manufactured Dwelling Park	3 Points
Tree removal, as an independent activity, on regulated slopes greater than 60% .		3 Points

**(4) Step Four: Cumulative Score.** Add the sub-totals from Tables 810-1A, 810-1B, and 810-1C. Proceed to step five.

**TABLE 810-1D  
CUMULATIVE SCORE**

<b>Table 810-1D: Cumulative Score</b>			
<b>Step 1. Earthquake-Induced Landslide Susceptibility Rating</b>	<b>Step 2. Water-Induced Landslide Susceptibility Rating</b>	<b>Step 3. Activity Susceptibility Rating</b>	<b>Step 4. Cumulative Score</b>
Points:_____	Points:_____	Points:_____	<b>Total Points:_____</b>

**(5) Step Five: Total Landslide Risk.** Determine the total landslide hazard risk from Table 810-1E. If the total landslide hazard risk meets or exceeds the thresholds for moderate or high landslide hazard risk set forth in Table 810-1E, a geological assessment, geotechnical report, or both, as applicable, shall be provided by the applicant, and the action specified therein undertaken or insured before any regulated activity may be permitted or approved.

**TABLE 810-1E  
TOTAL LANDSLIDE HAZARD RISK**

<b>Table 810-1E: Total Landslide Hazard Risk</b>		
<b>Cumulative Score (From Table 810-1D)</b>	<b>Landslide Hazard Risk</b>	<b>Requirement</b>
4 or fewer points	Category A - Low	No Requirements
5 - 8 points	Category B - Moderate	Geologic Assessment/ Geotechnical Report
9 or more points	Category C - High	Geotechnical Report

(b) After determining the total landslide hazard risk under subsection (a) of this section, the following shall be required:

(1) **Low Landslide Hazard Risk.** If application of Table 810-1E indicates a Low Landslide Hazard Risk, all regulated activities may proceed without further investigation, permitting, or approval required by this Chapter.

(2) **Moderate Landslide Hazard Risk.** If application of Table 810-1E indicates a Moderate Landslide Hazard Risk, a geological assessment shall be submitted for all regulated activities. If the geological assessment indicates that mitigation measures are necessary to safely undertake the regulated activity, a geotechnical report prepared by a Certified Engineering Geologist and Geotechnical Engineer shall be submitted.

(3) **High Landslide Hazard Risk.** If application of Table 810-1E indicates a High Landslide Hazard Risk, a geotechnical report prepared by a Certified Engineering Geologist and Geotechnical Engineer shall be submitted for all regulated activities. (Ord No. 31-13)

**810.030. Standards for Geological Assessments and Geotechnical Reports.** Geological assessments and geotechnical reports required under this Chapter shall include the information required by this section.

(a) **Geological Assessment.** A geological assessment shall include information and data regarding the nature, distribution of underlying geology, and the physical and chemical properties of existing soils; an opinion as to stability of the site; and conclusions regarding the effect of geologic conditions on the proposed development. The geological assessment shall bear the stamp of a Certified Engineering Geologist.

(b) **Geotechnical Report.** A geotechnical report shall include a comprehensive description of the site topography and geology; an opinion as to the adequacy of the proposed development from an engineering standpoint; an opinion as to the extent that instability on adjacent properties may adversely affect the project; a description of the field investigation and findings; conclusions regarding the effect of geologic conditions on the proposed development; and specific requirements for plan modification, corrective grading, and special techniques and systems to facilitate a safe and stable development. The report shall provide other recommendations, as necessary, commensurate with the project grading and development. The geotechnical report shall bear the stamp of a Certified Engineering Geologist and Geotechnical Engineer. (Ord No. 31-13)

**810.035. Certification of Compliance.** No regulated activity requiring a geotechnical report shall receive final approval or be permitted for properties located in areas of High Landslide Hazard Risk until the Director receives a written statement by a Geotechnical Engineer that all measures contained in the geotechnical report are completed, in place, and operable. (Ord No. 31-13)