

CHAPTER 69
LANDSLIDE HAZARDS

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69.010. Intent and Purpose. The intent and purpose of the provisions of this chapter are:

- (a) To implement the Geologic Hazards goals and policies of the Scenic and Historic Areas, Natural Resources and Hazards section of the Salem Area Comprehensive Plan;
 - (b) To review development applications for properties within landslide hazard areas;
 - (c) To assess the risk that a proposed use or activity will adversely affect the stability and slide susceptibility of an area; and thus promote the public health, safety, and welfare;
 - (d) To establish standards and requirements for the use of lands within landslide hazard areas;
 - (e) To mitigate risk within landslide hazard areas, not to act as a guarantee that the hazard risk will be eliminated, nor as a guarantee that there is a higher risk of hazard at any location.
- Unless otherwise provided, the landslide hazard regulations are in addition to generally applicable standards provided elsewhere in this code. (Ord No. 59-2000)

69.020. Definitions. As used in this chapter, except where the context otherwise clearly requires:

- (a) Words and phrases defined in SRC chapter 111 shall have the meanings set forth therein unless another definition is set forth in this section.
- (b) “Certified Engineering Geologist” is any Registered Geologist who is certified in the specialty of Engineering Geology under provisions of ORS 672.505 to 672.705.
- (c) “Erosion” is the wearing away of the earth’s surface as a result of the movement of wind, water, or ice.
- (d) “Excavation” is any act by which earth, sand, gravel, rock or any similar material is dug into, cut, quarried, uncovered, removed, displaced, relocated or bulldozed, including the conditions resulting therefrom.
- (e) “Fill” or “backfill” is a deposit of earth or other natural or manmade material placed by artificial means.
- (f) “Geological assessment” is 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. Geological assessment requirements are identified in the City of Salem Public Works Design Standards.
- (g) “Geotechnical Engineer” is 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.

(h) “Geotechnical report” is 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. Geotechnical report requirements are identified in the City of Salem Public Works Design Standards.

(i) “Grading” is the act of excavating and filling.

(j) “Landslide” is the downslope 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.

(k) “Mitigation Measure” is an action designed to reduce project-induced geologically hazardous area impacts.

(l) “Noxious Vegetation” is the removal or control of noxious vegetation as that term is defined in SRC 50.705.

(m) “Slope” is an inclined earth surface, the inclination of which is expressed denoting a given rise in elevation over a given run in distance. A forty percent slope, for example, refers to a forty-foot rise in elevation over a distance of one hundred feet. A one hundred percent slope equals a forty-five degree angle. Slopes are measured across a horizontal rise and run calculation within any horizontal twenty-five foot distance.

(n) “Tree” means any living, standing, woody plant, having a trunk eight inches or more in diameter or 25 inches in circumference, measured at a point four feet above grade at the base of the trunk.

(o) “Tree Removal” means to cut down a tree or remove all or 50% 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. 59-2000)

69.030. Regulated Activities; Permit and Approval Requirements; Applicability. Except as provided under SRC 69.040, no person shall engage in any of the following regulated activities in areas designated on maps adopted under this chapter, without first obtaining permits or approvals as required by this chapter:

(a) Excavation;

(b) Fill;

(c) Installation or construction of an accessory structure greater than 500 square feet in area;

(d) Construction, reconstruction, structural alteration, relocation or enlargement of any building or structure for which permission is required pursuant to this code;

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

(f) Tree removal on slopes greater than 60%.

The requirements of this chapter are in addition to other provisions of this code. Where the provisions of this chapter conflict with other provisions of this code, the provisions that are the more restrictive of regulated development activity shall govern. (Ord No. 59-2000)

69.040. Exemptions. The following activities, and persons engaging in same, are EXEMPT from the provisions of this chapter:

(a) An excavation which is less than two feet in depth, or which involves less than twenty-five cubic yards of volume;

(b) A fill which does not exceed two feet in depth or twenty-five cubic yards of volume;

- (c) Structural alteration of any structure of less than 500 square feet that does not involve grading as defined in this chapter.
- (d) Maintenance, operation, or reconstruction of public and private roads, streets, driveways, utility lines, and buildings or structures existing on November 28, 2000, provided that such maintenance, operation or, reconstruction does not extend outside the previously disturbed area;
- (e) Installation, construction, reconstruction, or replacement of utility lines in city right-of-way, or public easement, not including electric substations;
- (f) The removal or control of noxious vegetation;
- (g) A structure or use of land for which a valid city permit has been issued and substantial construction undertaken on or before November 28, 2000;
- (h) Emergency actions which must be undertaken immediately to prevent an imminent threat to public health or safety, or prevent imminent danger to public or private property. The person undertaking emergency action shall notify the Building Official on all regulated activities associated with any building permit or director of public works on all others within one working day following the commencement of the emergency activity. If the director of public works or Building Official determine that the action or part of the action taken is beyond the scope of allowed emergency action, enforcement action may be taken. (Ord No. 59-2000)

69.050. Map Adoption; Amendment. Areas subject to this chapter shall be shown on Landslide Hazard Susceptibility Maps which shall be adopted by council and shown on the official zoning map of the city. The Landslide Hazard Susceptibility Maps shall indicate the general location of areas of low, moderate, and high susceptibility to landslides, and areas of known slide hazards. These maps shall be based on the best available information and may be amended based upon the receipt of corrected, updated or refined data or upon the revision of studies upon which the maps were initially based. (Ord No. 59-2000)

69.060. Classification Criteria and Review Requirements. The Graduated Response Table 69-1, and the criteria set forth therein shall be used by Public Works staff to determine the level of site investigation for various types of regulated activity on property any portion of which is shown on Landslide Hazard Susceptibility Maps. Using a rating system, slope and physiographic conditions at the site are evaluated in relationship to a proposed activity. If a rating meets or exceeds quantified thresholds provided in the table, a geological assessment or geotechnical report or both shall be provided by the applicant and action specified therein undertaken or insured before any regulated activity may be permitted or approved. Where any portion of the subject property on which regulated activities are proposed is identified under two slope conditions, or two or more physiographic and geologic categories, the highest condition or category will apply.

- (a) For Low Landslide Risk Assessments, all regulated activities may proceed without further investigation, permitting, or approval requirements of this chapter.
- (b) For Moderate Landslide Risk Assessments, a geological assessment shall be submitted by applicant and at applicant's expense for all regulated activities. If the geological assessment indicates that mitigation measures are necessary to safely undertake the regulated activity, High Landslide Risk Assessment requirements must be met. If the geological assessment indicates that no mitigation measures are necessary to safely undertake the regulated activity, all regulated activities may proceed.
- (c) For High Landslide Risk Assessments, a geotechnical report prepared by a Certified Engineering Geologist and Geotechnical Engineer at the applicant's expense shall be submitted for all regulated activities. (Ord No. 59-2000; Ord No. 46-2003)

69.070. Geological Assessment. Geological assessment requirements are identified in the City of Salem Public Works Design Standards. The 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. (Ord No. 59-2000)

69.080. Geotechnical Report. Geotechnical report requirements are identified in the City of Salem Public Works Design Standards. The 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; and 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. (Ord No. 59-2000)

69.090. Excavation and Fill Permit. No excavation or fill subject to the provisions of this chapter shall be made without an Excavation and Fill permit. The application for such permit, permit issuance, term, termination, suspension or revocation, scope, application fee, appeal and violation relative to such permit shall be as set forth in SRC 65.110 through SRC 65.990. Excavation and fill permit requirements are in addition to other requirements of this chapter. Any geological assessment or geotechnical report required by this chapter shall accompany the Excavation and Fill permit application and shall receive approval in accordance with the provisions of this chapter prior to Excavation and Fill permit issuance. (Ord No. 59-2000)

69.100. Review Procedure and Approvals; Independent Review.

(a) No application for regulated activity permits or approvals required under this Code shall be deemed complete without submittal and approval of a geological assessment or geotechnical report as required by this chapter. Submittal of such application shall be accompanied by such fee as the council establishes by resolution. The director of public works or Building Official or both shall review geological assessments and geotechnical reports. No geological assessment shall be reviewed unless the assessment bears the stamp of a Certified Engineering Geologist. No geotechnical report shall be reviewed unless the report bears the stamp of a Certified Engineering Geologist and Geotechnical Engineer. Review of submittals shall include examination to ensure that the following criteria are met:

- (1) Required elements are completed;
- (2) Geologic report procedures and assumptions are generally accepted; and
- (3) All conclusions and recommendations are supported and reasonable.

Conclusions and recommendations stated in an approved assessment or report shall then be directly incorporated as permit conditions or provide the basis for conditions of approval of the regulated activity.

Where staff determines that a geological assessment or geotechnical report fails to meet one or more of the review criteria, or staff determines that it lacks the qualifications or expertise to fully review an assessment or report, the director of public works may elect to have an independent Certified Engineering Geologist or Geotechnical Engineer, selected from a list of prequalified consultants, review the original report or its conclusions at city expense.

(b) Where the applicant has appealed a determination by staff that a geological assessment or geotechnical report fails to meet the review criteria, or disagrees with the conditions of approval imposed on the project as a result of said report, the applicant may employ a Certified

Engineering Geologist or Geotechnical Engineer, selected from a list of prequalified firms adopted by the director of public works, to review the case. The independent review shall be conducted at the applicant's expense, and the results of the restudy shall be reviewed by the director and, upon approval thereafter become the basis for permit conditions or conditions of approval. (Ord No. 59-2000)

69.110. 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 Risk Assessments until the city receives a written statement by a Geotechnical Engineer that all performance, mitigation, or monitoring measures contained in an approved geotechnical report are completed, in place, and operable. (Ord No. 59-2000)

69.120. Violations. A violation of any provision of this chapter shall be an infraction. Such penalty is not exclusive and is in addition to any other right, remedy and penalty available to the city under any other provision of law. (Ord No. 59-2000)

69.130. Disclosure. As a condition of city permits or approvals of regulated activities located in areas of High Landslide Risk Assessments, the owner 1) shall record a declaratory statement with the county clerk stating that the property lies within a potential landslide hazard area and that all approved geotechnical reports for such property are on file with the city and 2) shall provide evidence of such recording to the city department approving or permitting the regulated activity. (Ord No. 59-2000)

69.140. Reference to Additional Standards. Additional development standards may be found in the following chapters:

Building Code	SRC Chapter 56
Subdivisions	SRC Chapter 63
Excavations and Fills	SRC Chapter 65
General Development Standards	SRC Chapter 130

(Ord No. 59-2000)

TABLE 69-1 GRADUATED RESPONSE TABLE

Directions:

Step 1. Select one assigned point value from PART I and Proceed to PART II.

PART I. References: Interpretive Map Series (IMS-17), Interpretive Map Series (IMS-18)	Earthquake-Induced Landslide Susceptibility Ratings
Physiographic and Geologic Categories	Assigned Point Value
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

Step 2. Select one assigned point value from PART II and Proceed to PART III.

PART II. 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	Water-Induced Landslide Susceptibility Ratings
Physiographic and Geologic Categories	Assigned Point Value
Property identified under Category 1 on IMS-5 & 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

Step 3. Select one assigned point value from PART III and Proceed to PART IV.

PART III.	Activity Ratings For Potential Site Impact
Type of Activity	Assigned Point Value
Installation or construction of any structure greater than 500 square feet	1 Point
Duplex, Single Family, Manufactured Dwelling Building Permit (including Structural Expansion and Additions)	1 Point
Multiple Family Building Permit (including Structural Expansion and Additions)	2 Points
Partition	2 Points
Grading (as an Independent Activity)	3 Points
Subdivision, Planned Unit Development, Manufactured Dwelling Park	3 Points
Schools, Hospital and Public Building Permits (including Structural Expansion and Additions)	3 Points
Commercial and Industrial Building Permits (including Structural Expansion and Additions)	3 Points
Tree removal on regulated slopes greater than 60% (as an Independent Activity)	3 Points

Step 4. Add Sub-totals From PARTS I, II, and III. Proceed to PART V.

PART IV. Cumulative Score		
Part I. Earthquake-Induced Landslide Susceptibility Ratings _____ Points	Part II. Water-Induced Landslide Susceptibility Ratings _____ Points	Part III. Type of Activity _____ Points

Step 5. Determine Landslide Hazard Risk

PART V.	Total Risk Assessment Policy Provision	
Category A - Low Landslide Risk (4 or less point value)	Category B - Moderate Landslide Risk (5 - 8 point value)	Category C - High Landslide Risk (9 or greater point value)
No Requirements.	Geologic Assessment * * If the Geologic Assessment indicates landslide hazards on the site, the director of public works or Building Official shall specify the requirements of a High Landslide Risk Assessment.	Geotechnical Report

(Ord No. 59-2000; Ord No. 46-2003)

