

SECTION 4.130: DEVELOPMENT REQUIREMENTS FOR GEOLOGIC HAZARD AREAS

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4.130(1) Purpose

The purpose of these Development Requirements for Geologic Hazard Areas is to protect people, lands and development in areas that have been identified as being subject to geologic hazards.

The provisions and requirements of this section are intended to provide for identification and assessment of risk from geologic hazards, and to establish standards that limit overall risk to the community from identified hazards to a level acceptable to the community. Development in identified hazard areas is subject to increased levels of risk, and these risks must be acknowledged and accepted by present and future property owners who proceed with development in these areas

4.130(2) Applicability

The following areas are considered potentially geologically hazardous and are therefore subject to the requirements of Section 4.130:

- a) All lands partially or completely within categories of “high” and “moderate” susceptibility to shallow landslides as mapped in Oregon Department of Geology and Mineral Industries (DOGAMI) Open File Report O-20-13, Landslide hazard and risk study of Tillamook County, Oregon;
- b) All lands partially or completely within categories of “high” and “moderate” susceptibility to deep landslides as mapped in DOGAMI Open File Report O-20- 13, Landslide hazard and risk study of Tillamook County, Oregon;
- c) All lands partially or completely within a “debris flow fan” as mapped in DOGAMI Open File Report O-20-13, Landslide hazard and risk study of Tillamook County, Oregon;

- d) All lands partially or completely within a rapidly moving landslide as mapped in DOGAMI IMS-22, GIS Overview Map of Potential Rapidly Moving Landslide Hazards in Western Oregon, 2002.
- e) All lands along the oceanfront. An oceanfront lot is a lot or parcel that abuts the ocean shore state recreation area (as defined in OAR 736-021-0010) or a lot or parcel where there is no portion of a buildable lot between it and the ocean shore state recreation area. Lots or parcels that are fronted by roads, parks, beach accesses, or other minimal improvements are also considered oceanfront.
- f) Lots or parcels where the average existing slopes are equal to or greater than 19 percent within or adjacent to hazard risk zones described in 4.130(2)(a) through (d) for any lot or parcel less than or equal to 20,000 square feet or lots or parcels where the average existing slopes are equal to or greater than 29 percent within or adjacent to hazard risk zones described in 4.130(2)(a) through (d) for any lot or parcel greater than 20,000 square feet.
 1. For the purpose of this section, slopes are determined by:
 - Lots or parcels less than 20,000 square feet where the average existing slopes are equal to or greater than 19% measured from the highest to lowest point of the property.
 - The average existing slope of the building footprint or area to be disturbed measured from the highest to lowest point within the footprint or area to be disturbed is 29 percent or greater for properties 20,000 square feet or larger.
- g) Any other documented geologic hazard area on file, at the time of inquiry, in the office of the Tillamook County Community Development Department. A “documented geologic hazard area” means an area of land that is shown by reasonable written evidence to contain geological characteristics or conditions which are hazardous or potentially hazardous for the improvement thereof.

The publications referenced above are not intended to be used as a site-specific analysis tool. The County will use these publications to identify when a Geologic Hazard Assessment Review is needed on a property prior to development.

4.130(3) Geologic Hazard Assessment Review

- a) Except for activities identified in Subsection 4.130(3)(b) as exempt, any new development or substantial improvement (as defined in Article 11) in an area subject to the provisions of this section shall require a Geologic Hazard Assessment Review.
- b) The following development activities are exempt from the requirement for a Geologic Hazard Assessment Review:

1. Maintenance, repair, or alterations to existing structures that do not alter the building footprint or foundation and do not constitute substantial improvement as defined in Article 11.
 2. Exploratory excavations under the direction of a certified engineering geologist or registered geotechnical engineer;
 3. Construction of structures for which a building permit is not required;
 4. An excavation which is less than two feet in depth, or which involves less than twenty-five cubic yards of volume;
 5. Fill that is less than two feet in depth or that involves less than twenty-five cubic yards of volume;
 6. Yard area vegetation maintenance and other vegetation removal on slopes less than 20%;
 7. Removal of trees smaller than 8 inches dbh (diameter breast height);
 8. Removal of trees larger than 8 inches dbh (diameter breast height) provided the canopy area of the trees that are removed in any one-year period is less than 25% of the lot or parcel area;
 9. Forest operations subject to regulation under ORS 527 (the Oregon Forest Practices Act);
 10. Maintenance and reconstruction of public and private roads, streets, parking lots, driveways, and utility lines, provided the work does not extend outside the existing right-of-way boundary;
 11. Maintenance and repair of utility lines, and the installation of individual utility service connections;
 12. Emergency response activities intended to reduce or eliminate an immediate danger to life, property, or flood or fire hazard; and
 13. Beachfront protective structures subject only to regulation by the Oregon Parks and Recreation Department under OAR Chapter 736, division 20.
- c) Application, review, decisions, and appeals for a Geologic Hazard Assessment Review shall be a Type I procedure in accordance with Article 10. Applications for a Geologic Hazard Assessment Review may be made prior to or concurrently with any other type of application required for the proposed use or activity. Except for exempt activities listed under Section 4.130(3)(b), Geologic Hazard Assessment Review shall be completed prior to any ground disturbance.
- d) All applications for Geologic Hazard Assessment Review shall be accompanied by a Geologic Hazard Report prepared by a qualified licensed geoprofessional (as defined in Article 11) that meets the content requirements of Section 4.130(4), at the applicant/property owner's expense.

- e) For development activities that are subject both to this section and Section 3.530: Beach and Dune Overlay Zone, one complete Geologic Hazard Report can be submitted for meeting the requirements of this section and Section 3.530. The report shall include requirements for both sections as applicable.

4.130(4) Geologic Hazard Report Standards

- a) For the purposes of Section 4.130, a Geologic Hazard Report refers to engineering geologic reports, geotechnical reports, and geotechnical engineering reports.
- b) .Geologic Hazard Reports required pursuant to this section shall be prepared consistent with standard geologic practices employing generally accepted scientific and engineering principles, and shall at a minimum contain the applicable provisions outlined in the Oregon State Board of Geologist Examiners publication "Guidelines for the Preparation of Engineering Geologic Reports," 2nd Edition, 5/30/2014 or other published best practice guidelines for engineering geologic or geotechnical engineering reports, consistent with current scientific and engineering principles. Reports shall reference the published guidelines upon which they are based.
- c) For oceanfront property (lots or parcels abutting the ocean shore), Geologic Hazard Reports shall also address all the requirements of Section 3.530 (6)(f) to the extent applicable and based on best available information.
- d) Geologic Hazard Reports required by this section shall include the following from the preparer(s) of the report:
 - a. A statement that all the applicable content requirements of subsection 4.130(4) have been addressed or are not applicable to the review. An explanation shall be accompanied with any requirement identified as not applicable;
 - b. A description of the qualifications of the professional(s) that prepared the report. If multiple licensed professionals contributed to the report, each professional shall individually sign and stamp their own work products; and
 - c. A statement by the preparer(s) that they have the appropriate qualifications to have completed the report and all its contents.
- e) All Geologic Hazard Reports are valid for purposes of meeting the requirements of Section 4.130 for a period of five (5) years from the date of preparation. Such reports are valid only for the development plan addressed in the report. Tillamook County assumes no responsibility for the quality or accuracy of such reports. Within that five-year period, the Planning Director can require at their discretion an addendum by a qualified licensed geoprofessional certifying that site conditions have not changed from the original report. If site conditions have changed, a new Geologic Hazard Report shall be required.

4.130(5) Decisions of Geological Assessment Reviews

A decision on a Geologic Hazard Assessment Review shall be based on findings of compliance with the following standards:

- a) The Geologic Hazard Report shall meet the content standards set forth in Section 4.130(4).
- b) In approving a Geologic Hazard Assessment Review, the decision maker may impose any conditions which are necessary to ensure compliance with the provisions of this section or with any other applicable provisions of the Tillamook County Land Use Ordinance.
- c) The development plans for the application conform, or can be made to conform, with all the recommendations and specifications contained in the Geologic Hazard Report.
- d) In the event the decision maker determines that additional review of the Geologic Hazard Report by a qualified licensed geoprofessional is necessary to determine compliance with this section, Tillamook County may retain the services of such a professional for this purpose. The applicant shall be responsible for all costs associated with the additional review. The results of that evaluation shall be considered in the decision of the Geologic Hazard Assessment Review.

4.130(6) Development Standards for Uses Subject to Review

In addition to the conditions, requirements and limitations imposed by a required Geologic Hazard Report, all uses subject to a Geologic Hazard Assessment Review shall conform to the following requirements:

- a) Hazard Disclosure Statement: All applications for new development or substantial improvements subject to Geologic Hazard Assessment Review shall provide a Hazard Disclosure Statement recorded with the Tillamook County Clerk's Office and signed by the property owner that acknowledges:
 1. The property is subject to potential natural hazards and that development thereon is subject to risk of damage from such hazards;
 2. The property owner has commissioned a Geologic Hazard Report for the subject property, a copy of which is on file with Tillamook County Department of Community Development, and that the property owner has reviewed the Geologic Hazard Report and has thus been informed and is aware of the type and extent of hazards present and the risks associated with development on the subject property;
 3. The property owner accepts and assumes all risks of damage from natural hazards associated with the development of the subject property.

4. The property owners shall refrain from interfering with mitigation measures or improvements on the site and shall maintain them.
- f) Mitigation measures: Mitigation measures required to make the site suitable for the proposed development, including their design and construction specifications, shall be included in the Geologic Hazard Report and followed.
 - b) Safest site requirement: All new structures shall be limited to the recommendations contained in the Geologic Hazard Report; and
 1. Property owners should consider use of construction techniques that will render new buildings readily moveable in the event they need to be relocated; and
 2. Properties shall possess access of sufficient width and grade to permit new buildings to be relocated or dismantled and removed from the site.
 - c) Minimum Oceanfront Setbacks: For oceanfront lots or parcels, , the building footprint of all new development or substantial improvement subject to a Geologic Hazard Assessment Review shall also comply with the requirements of Section 3.530(8) Oceanfront Setbacks.
 - d) Erosion Control Measures: All uses subject to a Geologic Hazard Assessment Review shall address the following erosion control measure requirements, designed by a qualified licensed geoprofessional:
 1. Stripping of vegetation, grading, or other soil disturbance shall be done in a manner which will minimize soil erosion, stabilize the soil as quickly as practicable, and expose the smallest practical area at any one-time during construction;
 2. Development plans shall minimize cut or fill operations so as to prevent off-site impacts;
 3. Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development;
 4. Permanent plantings and any required structural erosion control and drainage measures shall be installed as soon as practical;
 5. Provisions shall be made to effectively accommodate increased runoff caused by altered soil and surface conditions during and after development. The rate of surface water runoff shall be structurally retarded where necessary;
 6. Provisions shall be made to prevent surface water from damaging the cut face of excavations or the sloping surface of fills by installation of temporary or permanent drainage across or above such areas, or by other suitable stabilization measures such as mulching, seeding, planting, or armoring with rolled erosion control products, stone, or other similar methods;
 7. All drainage provisions shall be designed to adequately carry existing and

- potential surface runoff from the twenty-year frequency storm to suitable drainageways such as storm drains, natural watercourses, or drainage swales. In no case shall runoff be directed in such a way that it significantly decreases the stability of known landslides or areas identified as unstable slopes prone to earth movement, either by erosion or increase of groundwater pressure;
8. Where drainage swales are used to divert surface waters, they shall be vegetated or protected as necessary to prevent offsite erosion and sediment transport;
 9. Erosion and sediment control devices shall be required where necessary to prevent polluting discharges from occurring. Control devices and measures which may be required include, but are not limited to:
 - i. Energy absorbing devices to reduce runoff water velocity;
 - ii. Sedimentation controls such as sediment or debris basins. Any trapped materials shall be removed to an approved disposal site on an approved schedule;
 - iii. Dispersal of water runoff from developed areas over large undisturbed areas.
 10. Disposed spoil material or stockpiled topsoil shall be prevented from eroding into streams or drainageways by applying mulch or other protective covering; or by location at a sufficient distance from streams or drainageways; or by other sediment reduction measures; and
 11. Such non-erosion pollution associated with construction such as pesticides, fertilizers, petrochemicals, solid wastes, construction chemicals, or wastewaters shall be prevented from leaving the construction site through proper handling, disposal, site monitoring and clean-up activities.
- e) Certification of compliance: Permitted development shall comply with the recommendations in the required Geologic Hazard Report. Certification of compliance shall be provided as follows:
- a. Plan Review Compliance: Building, construction or other development plans shall be accompanied by a written statement from a certified engineering geologist or licensed geotechnical engineer stating that the plans comply with the recommendations contained in the Geologic Hazard Report for the Geologic Hazard Assessment Review.
 - b. Inspection Compliance: Upon the completion of any development activity for which the Geologic Hazard Report recommends an inspection or observation by a certified engineering geologist or licensed geotechnical engineer, the certified engineering geologist or licensed geotechnical engineer shall provide a written statement indicating that the development activity has been completed in

accordance with the applicable Geologic Hazard Report recommendations.

- c. Final Compliance: No development requiring a Geologic Hazard Report shall receive final approval (e.g., certificate of occupancy, final inspection, etc.) until the department receives:
 - i. A written statement from a certified engineering geologist or licensed geotechnical engineer indicating that all performance, mitigation, and monitoring measures specified in the Geologic Hazard Report have been satisfied;
 - ii. If mitigation measures incorporate engineering solutions designed by a licensed professional engineer, a written statement of compliance by the design engineer;
 - iii. A written statement by the qualified licensed geoprofessional indicating that all erosion control measure requirements were met.
- f) Restoration and replacement of existing structures:
 - a. Notwithstanding any other provisions of this ordinance, application of the provisions of this section to an existing use or structure shall not have the effect of rendering such use or structure nonconforming as defined in Article 7.
 - b. Replacement, repair or restoration of a lawfully established building or structure subject to this section that is damaged or destroyed by fire, other casualty or natural disaster shall be permitted, subject to all other applicable provisions of this ordinance, and subject to the following limitations:
 - i. Replacement authorized by this subsection is limited to a building or structure not larger than the damaged/destroyed building.
 - ii. Structures replaced pursuant to this subsection along the oceanfront shall be located no further seaward than the damaged structure being replaced.
 - iii. Replacement or restoration authorized by this subsection shall commence within one year of the occurrence of the fire or other casualty which necessitates such replacement or restoration.
 - c. A building permit application for replacement, repair, or restoration of a structure under the provisions of this subsection shall be accompanied by a Geologic Hazard Report prepared by a qualified licensed geoprofessional that adheres to the Geologic Hazard Report Standards outlined in Section 4.130(4). All recommendations contained in the report shall be followed.
 - d. A building permit application for replacement, repair, or restoration authorized by this subsection shall be processed and authorized as Type I review pursuant to Section 10.020.

Definitions Contained in Article 11

Geoprofessional: refers to a Registered Geologist (RG), Certified Engineering Geologist (CEG), and Geotechnical Engineer (GE). Geoprofessionals are obligated to work within their area of expertise.

- Registered Geologists (RG) provide geologic maps and documents, can identify relative hazards, and are licensed by the Oregon State Board of Geologist Examiners (OSBGE). RGs cannot imply or provide recommendations for the siting, design, modification, or construction of structures and cannot practice engineering geology. RGs are defined in ORS 675.505 and ORS 672.525.
- Certified Engineering Geologists (CEG) provide engineering geologic reports and geotechnical reports that include hazard mitigation design. They are licensed by the Oregon State Board of Geologist Examiners (OSBGE). They apply geologic data, principles and interpretation to naturally occurring materials so that geologic factors affecting planning, design, construction and maintenance of civil engineering works are properly recognized and utilized. They can conduct geologic work to provide recommendations for the siting, design, modification, or construction of a structure. CEGs are defined in ORS 672.505 and ORS 672.525.
- A Geotechnical Engineer (GE) is a Professional Engineer (PE) with the specific training, expertise, and experience to qualify as a Geotechnical Engineer (GE). GEs can provide geotechnical engineering reports and are licensed by the Oregon Board of Examiners for Engineering and Land Surveying (OSBEELS). A GE can investigate and evaluate physical and engineering properties of earth materials, and design mitigation measures to reduce risk from natural hazards. As defined in Oregon Statute, Professional Engineers can only perform services in the areas of their competence. ORS 672.005, OAR 820-020.

Oceanfront Lot: A lot or parcel that abuts the ocean shore state recreation area (as defined in OAR 736-021-0010) or a lot or parcel where there is no portion of a buildable lot between it and the ocean shore state recreation area.