

SECTION 3.530: BEACH AND DUNE OVERLAY ZONE (BD)

(1) **PURPOSE:** The purpose of the Beach and Dune Overlay Zone is to establish criteria and performance standards to direct and manage development and other activities in beach and dune areas in a manner that:

- (a) Conserves, protects and, where appropriate, restores the resources and benefits of coastal beach and dune areas;
- (b) Reduces the risks to life and property from natural and man-induced actions on these inherently dynamic landforms; and
- (c) Ensures that the siting and design of development in beach and dune areas is consistent with Statewide Planning Goals 7 and 18, and the Hazards Element and Beaches and Dunes Element of the Tillamook County Comprehensive Plan.

Risk is ever present in identified beach and dune areas. The provisions and requirements of this section are intended to provide for identification and assessment of risk from beach and dune natural 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.

(2) **AREAS INCLUDED:** All beach and dune areas categorized in the table below and as identified in Open File Report O-20-04, Temporal and Spatial Changes in Coastal Morphology, Tillamook County, Oregon by the Oregon Department of Geology and Mineral Industries (DOGAMI) are subject to the provisions of this section. Beach and dune landforms are identified and mapped in this DOGAMI report. The following table provides a crosswalk between the categories mapped in O-20-04 and the categories subject to the provisions of this Section 3.530 and the Beaches and Dunes Element of the Tillamook County Comprehensive Plan.

DOGAMI Inventory Classification	Goal 18, DLCD Classification	Mapping Code
Beach	Beach	B
Active Foredune	Foredune, Active	FDA
Active Dune Hummocks	Hummocks, Active	H
Recently Stabilized Foredune	Foredune, Conditionally Stable	FD
Dune Complex	Dune Complex	DC
Younger Stabilized Dunes	Dune, Younger Stabilized	DS

Older Stabilized Dunes	Dune, Older Stabilized	ODS
Open Dune Sand	Dune, Active/Dune, Parabolic	OS
Open Dune Sand Conditionally Stable	Dune, Conditionally Stable	OSC
Active Inland Dune	Dune, Active	AID
Wet Interdune	Interdune	W
Wet Deflation Plain	Deflation Plain	WDP

- (3) PERMITTED USES: Within the Beach and Dune Overlay Zone, all uses permitted pursuant to the provisions of the underlying zone may be permitted, subject to the additional requirements and limitations of this section.
- (4) HABITAT RESTORATION & ENHANCEMENT: Permits for the enhancement or restoration of beach and dune landforms for the purposes of wildlife and plant habitat are permitted in the Beach and Dune Overlay Zone subject to the following requirements:
- (a) Any proposed vegetation removal shall be the minimum extent necessary to carry out the purpose of the habitat restoration or enhancement project.
 - (b) Activities shall demonstrate compliance with the requirements of the Flood Hazard Overlay Zone, if applicable.
 - (c) Activities shall be tied to an existing conservation plan, wildlife strategy, Endangered Species Act requirement, or other applicable document.
 - (d) The permit application shall include a clear plan for what activities will be carried out, the timing of the activities, and include:
 - (A) Temporary and permanent stabilization programs, sand contouring, and the planned maintenance of new and existing vegetation over at least a five-year period from completion of work;
 - (B) Methods for protecting the surrounding area from any adverse effects of the restoration or enhancement activities; and
 - (C) Minimize to insignificant levels hazards to life, public and private property, and the natural environment which may be caused by the proposed activities.
 - (e) Application, review, decisions, and appeals for permits for habitat restoration or enhancement shall be a Type I procedure in accordance with Article 10.

(5) DUNE AREA DEVELOPMENT PERMIT:

- (a) Except for activities identified in subsection (5)(b) as exempt, any new development, new construction, substantial improvement, shoreline alteration (including activities outside of OPRD's jurisdiction) or grading activity in an area subject to the provisions of this section shall require a Dune Area Development Permit. The Dune Area Development Permit may be applied for prior to or in conjunction with a building permit, grading permit, or any other permit or land use approval required by Tillamook County.
- (b) The following activities are exempt from the requirement for a Dune Area Development Permit:
 - (A) 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;
 - (B) Exploratory excavations under the direction of a certified engineering geologist or registered geotechnical engineer;
 - (C) Construction of structures for which a building permit is not required;
 - (D) An excavation which is less than two feet in depth, or which involves less than twenty-five cubic yards of volume;
 - (E) Fill that is less than two feet in depth or that involves less than twenty-five cubic yards of volume;
 - (F) Yard area vegetation maintenance on slopes less than 20%;
 - (G) Removal of trees smaller than 8 inches dbh (diameter breast height);
 - (H) Removal of trees larger than 8 inches dbh 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;
 - (I) Forest operations subject to regulation under ORS 527 (the Oregon Forest Practices Act);
 - (J) 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;
 - (K) Maintenance and repair of utility lines, and the installation of individual

utility service connections;

- (L) Emergency response activities intended to reduce or eliminate an immediate danger to life, property, or flood or fire hazard;
 - (M) Restoration, repair, or replacement of a lawfully established structure damaged or destroyed by fire or other casualty in accordance with subsection (15) of this section;
 - (N) Beachfront protective structures subject only to regulation by the Oregon Parks and Recreation Department under OAR Chapter 736, division 20;
 - (O) Remedial sand grading authorized by a Remedial Sand Grading Permit issued pursuant to subsection (11) of this section; and
 - (P) Foredune grading authorized by a Foredune Grading Permit issued pursuant to subsection (12) of this section.
 - (Q) Lots or parcels less than 20,000 square feet in size located on an Older Stabilized Dune where the average existing slope is less than 19% measured from the highest to lowest point of the property.
 - (P) Lots or parcels greater than 20,000 square feet in size located on an Older Stabilized Dune where 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.
- (d) Application, review, decisions, and appeals for Dune Area Development Permits shall be a Type I procedure in accordance with Article 10.
- (e) In addition to a completed application as prescribed in Article 10, an application for a Dune Area Development Permit shall include the following:
- (A) A site plan that illustrates areas of disturbance, ground topography (contours), roads and driveways, an outline of wooded or naturally vegetated areas, watercourses, erosion control measures, and trees with a diameter of 8-inches dbh (diameter breast height) or larger proposed for removal;
 - (B) An estimate of depths and the extent of all proposed excavation and fill work;
 - (C) Identification of the coastal erosion hazard zone for the parcel or lot upon which development is to occur;

- (D) Identification of all natural hazards potentially present and estimated sea level rise expected for the parcel or lot upon which development is to occur.
 - (E) A Geologic Hazard Report prepared by a qualified licensed geoprofessional (as defined in Article 11) which meets the content requirements of subsection (6); and
 - (F) If engineering remediation is required to make the site suitable for the proposed development, an engineering report, prepared by a registered civil engineer (with experience relating to coastal processes), geotechnical engineer, or certified engineering geologist which provides design and construction specifications for the required remediation.
- (f) A decision to approve a Dune Area Development Permit shall be based upon findings of compliance with the following standards:
- (A) The proposed development complies with the applicable requirements and standards of subsections (7), (8), (9), (10), and (13) of this section;
 - (B) Any proposed foredune grading for site preparation cannot go below the Base Flood Elevation plus four feet; shall be the minimum area necessary for the construction of a structure; shall include plans for temporary and permanent stabilization of the site, including a re-vegetation plan of exposed sand areas; and shall conform with the requirements of subsection (11)(b) of this section. Additionally, all graded sand shall remain in the beach-foredune system;
 - (C) The Geologic Hazard Report conforms to the standards for such reports set forth in subsection (6) of this section; and
 - (D) The development plans for the application conform, or can be made to conform, with all recommendations and specifications contained in the Geologic Hazard Report.
- (g) In approving a Dune Area Development Permit, 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.
- (h) 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 deciding on the Dune Area Development Permit.

(6) GEOLOGIC HAZARD REPORT STANDARDS

- (a) For the purposes of Section 3.530, a Geologic Hazard Report refers to engineering geologic reports, geotechnical reports, and geotechnical engineering reports.
- (b) Geologic Hazard Reports required by 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) 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 this subsection 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.
- (d) All Geologic Hazard Reports are valid for purposes of meeting the requirements of this section 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 will be required.

- (e) For development activities that are subject both to this section and Section 4.130: Development Requirements for Geologic Hazard Areas, one complete Geologic Hazard Report can be used for meeting the requirements of this section and Section 4.130. The report shall include requirements for both sections as applicable.
- (f) In addition to the requirements set forth in subsections (b) and (c), Geologic Hazard Reports for lots or parcels abutting the ocean shore shall, to the extent applicable and based on best available information, include the following information, analyses, and recommendations:
 - (A) Site description:
 - (i) The history of the site and surrounding areas, such as previous riprap or dune grading permits, erosion events, exposed trees on the beach, or other relevant local knowledge of the site.
 - (ii) Topography, including elevations and slopes on the property itself.
 - (iii) Vegetation cover.
 - (iv) Subsurface materials – the nature of the rocks and soils.
 - (v) Conditions of the seaward front of the property, particularly for sites having a sea cliff.
 - (vi) Presence of drift logs or other flotsam on or within the property.
 - (vii) Description of streams or other drainage that might influence erosion or locally reduce the level of the beach.
 - (viii) Proximity of nearby headlands or jetties which might block the longshore movement of beach sediments, thereby affecting the level of the beach in front of the property.
 - (ix) Description of any shore protection structures that may exist on the property or on nearby properties.
 - (x) Presence of pathways or stairs from the property to the beach.

- (xi) Existing human impacts on the site, particularly that might alter the resistance to wave attack.
- (xii) Location and condition of nearby beach access sites.

(B) Description of the fronting beach:

- (i) Average widths of the beach during the summer and winter.
- (ii) Median grain size of beach sediment.
- (iii) Average beach slopes during the summer and winter.
- (iv) Elevations above mean sea level of the beach at the seaward edge of the property during summer and winter.
- (v) Presence of rip currents and rip embayments that can locally reduce the elevation of the fronting beach.
- (vi) Presence of rock outcrops and sea stacks, both offshore or within the beach zone.
- (vii) Information regarding the depth of beach sand down to bedrock at the seaward edge of the property.

(C) Analyses of Erosion and Flooding Potential:

- (i) Analysis of DOGAMI beach monitoring data for the site or nearby area (if available).
- (ii) Analysis of human activities affecting shoreline erosion.
- (iii) Analysis of possible mass wasting, including weathering processes, land sliding or slumping.
- (iv) Calculation of wave run-up beyond mean water elevation that might result in erosion of the sea cliff or foredune (see Stockdon, 1996).
- (v) Evaluation of frequency that erosion-inducing processes could occur, considering the most extreme potential conditions of unusually high-water levels together with severe storm wave energy.

- (vii) For dune-backed shorelines, use established geometric model to assess the potential distance of property erosion and compare the results with direct evidence obtained during site visit, aerial photo analysis, or analysis of DOGAMI beach monitoring data.
 - (viii) Description of expected local sea level rise over the next 50 years and impacts of that sea level change on the site, including during severe storm conditions.
 - (D) Assessment of potential reactions to erosion episodes:
 - (i) Determination of eligibility for beachfront protective structures as prescribed in subsection (13).
 - (ii) Assessment of potential reactions to erosion events, under climate change conditions, addressing the need for future erosion control measures, building relocation, or building foundation and utility repairs.
- (g) Geologic Hazard Reports for land divisions as deemed needed by the Director and for development requiring building permits, except for activities listed as exempt in subsection (5)(b), shall also include the following recommendations:
 - (A) Use results from the above analyses to establish setbacks (beyond any minimums set by this section), building techniques, or other mitigation to ensure an acceptable level of safety and compliance with all local requirements.
 - (B) Recommend a foundation design, or designs, that render the proposed structures ready moveable.
 - (C) Recommend a plan for preservation of vegetation and existing grade within the setback area, if appropriate.
 - (D) Include a consideration of a local variance process to reduce the building setback on the side of the property opposite the ocean, if this reduction helps to lessen the risk of erosion, flooding, bluff failure or other hazard.
 - (E) Recommend methods to control and direct water drainage away from the ocean (e.g., to an approved storm water system), or if not possible, to direct water in such a way so as to not cause erosion or visual impacts.

- (h) Erosion Control Measures: All uses subject to a Dune Area Development Permit and Geologic Hazard Report shall address the following erosion control measure requirements, designed by a qualified licensed geoprofessional within the Geologic Hazard Report:
- (A) 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;
 - (B) Development plans shall minimize cut or fill operations so as to prevent off-site impacts;
 - (C) Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development;
 - (D) Permanent plantings and any required structural erosion control and drainage measures shall be installed as soon as practical;
 - (E) 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;
 - (F) 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;
 - (G) 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;

- (H) Where drainage swales are used to divert surface waters, they shall be vegetated or protected as necessary to prevent offsite erosion and sediment transport;
- (I) 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.
- (J) 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
- (K) 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.

(7) ADDITIONAL DEVELOPMENT LIMITATIONS IN DUNE AREAS: In addition to the conditions, requirements, and limitations imposed by any required Geologic Hazard Report, all development subject to a Dune Area Development Permit shall conform to the following requirements:

- (a) Construction of residential, commercial, or industrial buildings is prohibited on beaches, active foredunes, other foredunes that are conditionally stable and subject to ocean undercutting or wave overtopping, interdune areas (deflation plains) that are subject to ocean flooding, and within an area identified by FEMA FIRM maps to be subject to ocean flooding, except on lands that are subject to an approved exception to Goal 18, Implementation Requirement 2, as set forth in Section 6.1 of the Beaches and Dunes Element of the Tillamook County Comprehensive Plan.

- (b) Other development in these beach and dune areas shall be permitted only if adequate findings are provided to the County which demonstrate that the proposed development is adequately protected from any geologic hazards, wind erosion, undercutting, ocean flooding and storm waves; and is designed to minimize adverse environmental effects. In addition, findings shall be provided to address the following:
 - (A) The type of use proposed and the adverse effects it might have on the site and adjacent areas;
 - (B) Temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation;
 - (C) Methods for protecting the surrounding area from any adverse effects of the development; and
 - (D) Hazards to life, public and private property, and the natural environment that may be caused by the proposed use.
- (d) Safest site requirement: All new construction or substantial improvements shall be located within the area most suitable for development based on the least exposure to risk from coastal hazards as determined by a qualified licensed geoprofessional as part of a Geologic Hazard Report prepared in accordance with subsection (6). Notwithstanding the provisions of the underlying zone, as necessary to comply with this requirement, any required yard or setback except for the Oceanfront Setback outlined in subsection (8) may be reduced by 10 feet or up to 50%, whichever is greater.
- (e) Building heights shall be measured from the existing (pre-construction) grade. Only in Foredune Management Areas shall additional fill be allowed on an oceanfront lot to achieve the required four feet plus Base Flood Elevation, consistent with the provisions of Section 3.510: Flood Hazard Overlay Zone. In this instance, building height shall be measured on the foredune grade from four feet plus Base Flood Elevation.
- (f) Accessory structures and on-site sewage disposal systems, which the Department determines are consistent with the purpose of this zone, may be permitted oceanward of the Oceanfront Setback Line, subject to the standards of this section and the following provisions:
 - (A) The location of accessory structures and on-site sewage disposal

systems will be determined in each case based on site-specific information provided by a Geologic Hazard Report, prepared in accordance with subsection (6).

- (B) Any accessory structure higher than three feet as measured from existing grade will be subject to the variance procedure and criteria set forth in Article 8 of the Tillamook County Land Use Ordinance.
- (C) Accessory structures for on-site subsurface sewage disposal systems may not be located oceanward of the primary structure on the subject property unless the following provisions are met:
 - (i) The primary structure on the subject property is an authorized residential, commercial, or industrial structure in existence as of October 28, 1992;
 - (ii) The accessory structure is required for repair of an existing disposal system, and there is no viable alternative system or location landward of the primary structure; and
 - (iii) The owner of the subject property submits an affidavit to the Department acknowledging that the property owner has been informed a beachfront protective structure will not be authorized to protect the disposal system against erosion, and that the owner has sole responsibility for maintaining the disposal system and for notifying any purchaser of this condition prior to sale of the property.

(g) Beach Access:

- (A) Non-structural, low-impact pedestrian footpaths to the beach, not to exceed four-feet in width, shall be permitted in all dune areas, except where restricted in Foredune Management Areas.
- (B) Boardwalks and other structural pathways are subject to the requirements of 7(b) above.
- (C) Off-road recreational vehicle use in dune areas shall be permitted in Sand Lake Recreational Area. Motor vehicles registered to operate on public highways and roads shall be allowed to travel on beaches where posted by the Oregon Parks and Recreation Department (ORS 390.678). Operation of motor vehicles at other beach locations will require a

permit from the Oregon Parks and Recreation Department.

(D) In Foredune Management Areas, where heavy use of public easements or rights of way destabilizes dune areas on adjoining private property, signs may be placed at landward beach entrance points to encourage the use of alternative public access points. Signs shall be subject to review by the Foredune Management Authority, Tillamook County, and the Oregon Parks and Recreation Department.

(h) Land Grading Practices: No excavations for residential and commercial site development shall be done earlier than thirty (30) days prior to the start of construction. Following the completion of major construction, excavated areas shall be stabilized. At a minimum, the site shall be stabilized within nine (9) months of construction completion.

(8) OCEANFRONT SETBACKS: As used in this section, “vegetation line” means the ocean shore state recreation area boundary as described in ORS 390.770 or the line of established upland shore vegetation, whichever is farther inland. In areas subject to the provisions of this section, all development, except for activities listed as exempt in subsection (5)(b), shall be set back from the vegetation line the greater of:

(a) A distance specified in a required Geologic Hazard Report if it is more restrictive than the Oceanfront Setback Line; or

(b) A distance established through calculation of an Oceanfront Setback Line (OSL) as follows:

(A) On a lot or parcel where there are existing buildings located within 300 feet of the boundaries of the subject lot or parcel on both the north and the south, the OSL is a line drawn between the nearest building to the north and the nearest building to the south. The line shall be drawn between the most oceanward points of the two building footprints closest to the vegetation line.

(B) On a lot or parcel where there are buildings within 300 feet of the boundaries of the subject lot or parcel on one side only (north or south), the OSL is the average distance from the vegetation line of all such buildings. The measurement for calculating the average shall be made from the most oceanward point of the building footprints closest to the vegetation line.

- (C) On a lot or parcel where there are no buildings within 300 feet north or south of the boundaries of the subject lot or parcel, the OSL is the average distance from the vegetation line of the nearest two buildings. The measurement for calculating the average shall be made from the most oceanward point of the building footprints closest to the vegetation line.
 - (D) For purposes of calculating the OSL, “building” means a lawfully established, permanent residential, commercial, public, or industrial structure within 500 feet of the vegetation line and located on a lot or parcel that abuts the vegetation line. It does not include detached accessory structures.
 - (E) For purposes of calculating the OSL, “closest point of a building” means the point on an exterior wall of a building that is closest to the vegetation line. It does not include decks, second story decks, other structural improvements above finished grade, unroofed porches or landings, walkways, or building projections such as cornices, eaves, canopies, sunshades, gutters, or chimney chases.
- (c) In no case may any structure or other development be permitted west of the statutory vegetation line or line of actual vegetation, whichever is more landward, except as authorized by the Oregon Department of Parks and Recreation in accordance with OAR Chapter 736, division 20.
- (e) On lots or parcels created prior to the effective date of this section, where the application of the minimum oceanfront setback, together with any other required yards and/or setbacks, results in a building footprint area of less than 1,500 square feet, the required yard setback opposite the oceanfront may be reduced as follows:
- (A) The required yard setback opposite the oceanfront may be reduced by an amount necessary to provide a building footprint of not more than 1,500 square feet, or to a minimum of 10 feet, whichever is less.
 - (B) If the reduction in setback permitted in subsection (A) results in a permissible building footprint of less than 1,500 square feet, the oceanfront setback may be reduced by an amount necessary to provide a building footprint of not more than 1,500 square feet.

- (f) Notwithstanding the above provisions, the Planning Director shall require a greater setback from the ocean where there is evidence of significant coastal, environmental, or geologic hazards as determined by a Geologic Hazard Report submitted pursuant to Section 3.530(6) or other information available to the Department. In making this determination, the Geologic Hazard Report and the Director shall consider evidence of recent and future beach erosion and whether the proposed development has been designed to adequately minimize and mitigate for any adverse environmental effects to the fullest extent required by law.
- (9) FOREDUNE BREACHING: When permitted, foredune breaching and restoration shall be conducted in a manner consistent with sound principles of conservation. Such breaching may be permitted only:
- (a) To replenish sand supply in interdune areas;
 - (b) On a temporary basis in an emergency, such as for fire control, hazard removal or clean up, draining farmlands, or alleviating flood hazards; or
 - (c) For other purposes only upon adoption of an exception to Statewide Planning Goal 18.
- (10) GROUNDWATER REQUIREMENTS: Applications for development which will utilize groundwater resources shall provide a hydrologic analysis which demonstrates that groundwater withdrawal will not:
- (a) Lead to the loss of stabilizing vegetation;
 - (b) Lead to a deterioration of water quality; and
 - (c) Result in the intrusion of salt water into water supplies.
- (11) REMEDIAL SAND GRADING: As used in this section "remedial sand grading" means the removal of accumulated sand which poses an immediate threat of damage or is preventing access to a structure. Remedial sand grading does not alter the crest of the foredune. Before remedial sand grading activities can occur, an approved Remedial Sand Grading Permit from Tillamook County is required. Application, review, and decisions for Remedial Sand Grading Permits shall be a Type I procedure in accordance with Article 10.
- (a) Remedial sand grading can be conducted on an individual lot or parcel on an as-needed basis and may be permitted in all areas subject to the BD Overlay Zone with or without a foredune management plan. Remedial sand removal may include:

- (A) Clearing of sand which poses an immediate threat of inundation to houses, commercial or industrial buildings, beach access points, or infrastructure such as streets and utility lines, or which is preventing access to a structure;
 - (B) Excavation necessary for the purpose of placing a beachfront protective structure;
 - (C) Minor reshaping of the forward portion of the foredune necessary to provide an even slope for planting stabilizing vegetation.
- (b) All remedial sand grading shall be conducted in compliance with the following standards:
- (A) Rear yard (Rear yard is the yard seaward of the structure): Sand may be removed to the level of the top sill of the foundation up to 40 feet from the building, provided the foredune crest is not altered. From the 20-foot line, where applicable, all grading shall slope upward to the crest of the dune at a ratio of 2:1 (horizontal: vertical).
 - (B) Side yards: Sand may be removed to the level of the top sill of the foundation within 10 feet of the building. From the 10-foot line, sand grading shall slope upward at a ratio of 2:1.
 - (C) Front yard: All sand that is landward of the building may be removed down to the sill level of the foundation, provided removal does not create slopes of more than 2:1 with adjacent properties. Grading may not lower the front yard below the level of adjacent streets or roads except to clear sidewalks or driveways.
 - (D) All remedial grading shall be done in a manner that does not lower the existing height of the foredune and does not significantly damage existing vegetation. Any removal which exceeds standards shall be promptly restored.
 - (E) Permittees shall notify the Tillamook County Department of Community Development at least 48-hours prior to conducting authorized remedial grading to allow onsite inspection by the county and to provide for flagging by the county, if needed.
 - (F) All graded sand that is moved up and over the foredune seaward of the building shall be moved and placed in a manner that does not reduce the height of the foredune, uses one pathway (no more than 12 feet in width), and that minimizes disturbance to vegetation and the beach.
 - (G) All graded sand shall remain in the beach-foredune system.

(12) FOREDUNE GRADING: Foredune grading may be performed only as authorized in a foredune management plan adopted and acknowledged in conformance with Statewide Planning Goal 18. As used in this section “foredune grading” means grading that lowers the height of the foredune for view restoration and/or maintenance, or other purposes, and does not include remedial grading authorized by subsection (11) of this section.

- (a) Foredune grading shall require a Foredune Grading Permit. Application, review, decisions, and appeals for Foredune Grading Permits shall be a Type II procedure in accordance with Article 10.
- (b) A decision to approve a Foredune Grading Permit shall require findings of compliance with the following requirements:
 - (A) The proposed foredune grading will be performed on a continuous portion of the foredune of not less than 500 feet in length;
 - (B) The application for the Foredune Grading Permit includes the written consent of all owners of property within the continuous portion of the foredune to be graded;
 - (C) The application for the Foredune Grading Permit shall include elevation profiles of existing and proposed foredune conditions prepared by a registered surveyor; and
 - (D) The proposed foredune grading will conform to all the requirements and specifications of the applicable foredune management plan, including requirements for height and width of the graded foredune, stabilization measures, redistribution of graded sand, and maintenance and monitoring.
- (c) Upon completion of foredune grading under an approved Foredune Grading Permit, final foredune elevations and conditions shall be surveyed by a registered surveyor, showing compliance with permit conditions, and submitted to the Tillamook County Department of Community Development.

(13) REQUIREMENTS FOR BEACHFRONT PROTECTIVE STRUCTURES:

- (a) A Dune Area Development Permit is required for beachfront protective structures not subject to regulation by the Oregon Parks and Recreation Department under OAR Chapter 736, division 20.
- (b) In all cases, beachfront protective structures shall be permitted only where development existed on January 1, 1977, or where an exception to Goal 18,

Implementation Requirement 2 or 5 has been adopted in the County's comprehensive plan.

- (b) For the purposes of this subsection, "development" means houses, commercial and industrial buildings, and vacant subdivision lots which are physically improved through construction of streets and provision of utilities to the lot.
- (c) All beachfront protective structures shall be subject to the following requirements:
 - (A) Visual impacts shall be minimized;
 - (B) Access to and along the beach shall be maintained;
 - (C) Negative impacts on adjacent property shall be minimized;
 - (D) Long-term or recurring costs to the public shall be avoided.
 - (E) Structures shall be designed to minimize adverse impacts on water currents, erosion, and accretion patterns;
 - (F) Land-use management practices and non-structural solutions to problems of erosion and flooding shall be preferred to structural solutions; structural solutions shall only be utilized when it is determined that land-use management and non-structural solutions are not adequate; and
 - (G) All applicable requirements of the Flood Hazard Overlay Ordinance as described in TCLUO Section 3.510 shall be followed.
- (d) In addition to the applicable requirements set forth in subsection 6, Geologic Hazard Reports for beachfront protective structures shall, to the extent applicable and based on best available information, include the following information, analyses, and recommendations:
 - (A) Project Need: Analysis of the types of hazards affecting the property; estimated rate of erosion based on visual observations, aerial photo analysis, published reports, such as DOGAMI hazard risk zone studies, and DOGAMI beach monitoring data; description of the type of property, improvements, or structures that are threatened, and description of the nature of the threat.

- (B) Evaluation of Alternatives: Include a description of the preferred erosion mitigation technique, any practices that have been attempted previously, as well as an evaluation of the following options:
- (i) Hazard avoidance options (siting or relocation);
 - (ii) Non-structural stabilization methods (e.g., foredune enhancement, beach nourishment, vegetation plantings, cobble berms);
 - (iii) Structural stabilization (e.g., riprap, seawalls); and
 - (iv) Bio-engineered structures (e.g., clay burritos and vegetated terraces); and
 - (v) Site modifications for the control of erosion such as vegetation management, drainage controls, slope regrading, and building reinforcements.
- (C) Analysis of Impacts from Preferred Alternative, including:
- (i) Potential for flank scour and toe scour;
 - (ii) Shoreline alignment impacts to adjoining properties and non-armored neighbors, including impacts to properties not eligible for shoreline protective structures; potential for the preferred alternative to cause rip embayments or prolong existing embayment patterns;
 - (iii) Reduction in sand supply caused by preferred alternative;
 - (iv) Quantify narrowing or loss of beach area;
 - (v) Impacts from expected maintenance of the project over the lifetime of the structure. Include history of maintenance of similar projects nearby, analysis of local sea level rise, and trends in littoral sand movement. Describe the expected maintenance methods that could occur;
 - (vi) Impacts to existing public beach access routes, and provisions to keep access route in a useable condition; and

- (vii) Impacts to sites of geologic interest, such as fossil beds or ancient forest remnants.

(14) 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 approved Dune Area Development Permit.
- (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:
 - (A) A written statement by a certified engineering geologist or licensed geotechnical engineer indicating that all performance, mitigation, and monitoring measures specified in the report have been satisfied, including confirmation of foredune restoration and implementation of temporary and permanent vegetation stabilization measures;
 - (B) If mitigation measures incorporate engineering solutions designed by a licensed professional engineer, a written statement of compliance by the design engineer.
 - (C) A written statement by the qualified licensed geoprofessional indicating that all erosion control measure requirements were met.

(15) 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:
 - (A) Replacement authorized by this subsection is limited to a building or structure not larger than the damaged/destroyed building.
 - (B) Structures replaced pursuant to this subsection shall be located no further seaward than the damaged structure being replaced.
 - (C) 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.
 - (D) Where the cost of restoration or replacement authorized by this subsection equals or exceeds 80 percent of the market value of the structure before the damage occurred, such restoration or replacement shall also comply with subsections (7) and (8) of this section.
- (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 conforms to the standards set forth in subsection (6) and subsection (13) if applicable. All recommendations contained in the report shall be complied with in accordance with subsection (14).
- (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.