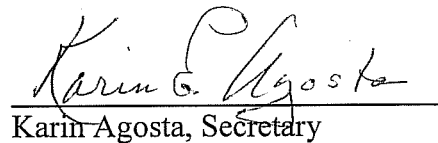


PROPOSED DRAFT ORDINANCE FOR
GEOLOGICALLY HAZARDOUS AREAS AND
FREQUENTLY FLOODED AREAS AS APPROVED
BY THE PLANNING COMMISSION
JULY 15, 2011


Susan Dehlendorf, Chair


Karin Agosta, Secretary

**PROPOSED CHANGES TO THE DRAFT ORDINANCE FOR
GEOLOGICALLY HAZARDOUS AREAS AND FREQUENTLY
FLOODED AREAS**

July 15, 2011

GEOLOGICALLY HAZARDOUS AREAS

18.30.120 Geologically Hazardous Areas

- A. **Applicability and Classification.** The provisions of this section apply in and within 200 feet of all Geologically Hazardous Areas. Geologically hazardous areas are classified in three categories according to the probability of hazardous geologic activity occurring and potential consequences to people and property.

Slope is the vertical change in elevation that occurs in a given distance expressed in percent (%). In all cases, a slope is delineated by establishing its toe and top and measured by averaging the inclination over at least 20 feet of vertical relief. Slope is measured perpendicular to the contour of the land and is measured over 10 feet of vertical relief. If the site does not have a vertical rise of at least 10 feet, the slope shall be measured over the entire property. In the absence of a topographic field survey of the subject property, the administrator ~~Director shall~~ may use the ~~United States Coast and Geodetic Survey 7.5 Minute Series Topographic Quadrangle Maps~~ San Juan County Digital Elevation Model (DEM) based on Light Distance and Ranging (LiDAR) technology, or other technology, to determine estimate slopes.

In regard to the determination of slopes and other geologic factors, conditions in the field shall control.

1. Category I.

- a. Areas designated in the Washington Department of Ecology Coastal Zone Atlas as U (Unstable), UB (Unstable Bluff), URS (Unstable Recent Slide), or UOS (Unstable Old Slide) and other areas identified by site-specific geologic reports.
- b. Areas with slopes of greater than 50 percent and with a vertical relief of 20 feet or more, except areas of exposed, unfractured bedrock. If any portion of a slope meets this definition, the slope or some larger portion may be designated a landslide hazard area.
- c. Areas designated as Quaternary slumps, earthflows, mudflows, or landslides on maps published by the United States Geological Survey or Washington Department of Natural Resources.

2. Category II.

- a. Erosion hazard areas characterized by soils identified in the USDA San Juan County Soil Survey as having ~~severe water~~ a high risk of erosion hazards:
 - i. ~~The Pickett Soil portion within the Pickett Rock Outcrop Complex;~~
 - A. ~~(PrD only where slope exceeds 15 percent);~~

- ~~B. (PrE); Those soils with a land capability subclass of "e."~~
- ~~ii. The Roche Soil portion within the Roche Rock Outcrop Complex, 30 to 70 percent slopes (RxE); or~~
- ~~iii. Roche gravelly loam, 8 to 15 percent slopes (RgC).~~
- b. Any area with all three of the following characteristics:
 - i. Slopes in excess of 15 percent;
 - ii. Soil having layers of moderate or faster permeability (0.8 inches per hour or greater) overlying layers having very slow or slower permeability (0.20 inches per hour or less); and
 - iii. Evidence of groundwater seepage to the surface.
- c. Areas directly underlain or affected by mine workings including steep and unstable slopes created by open mines. Mine hazard areas are based upon the identification of active or historic mining activity and site-specific information regarding topography and geology provided by the applicant as needed.

3. Category III.

- a. San Juan County in its entirety is located within Seismic Zone 3 Seismic Design Category D₁ in accordance with the Uniform International Building Code and the International Residential Code.
- b. Liquefaction susceptibility zones identified in the Washington Department of Natural Resources Liquefaction Susceptibility Map, which are subject to the requirements of the International Building Code and the International Residential Code.

B. Protection Standards.

1. Category I.

- a. The following shall be prohibited:
 - i. Structures where the primary occupancy is public assembly, including but not limited to schools, churches, day care centers, hospitals and other medical facilities; and
 - ii. Facilities for emergency response and public safety.
- b. Other new essential public facilities should not be located in Category I Geologically Hazardous Areas unless no practicable alternative exists.
- c. Applications for development other than in subsection (B)(1)(a) of this section in and within 200 feet of all Category I Geologically Hazardous Areas shall be accompanied by a geotechnical report, which is must be approved by the County and prepared in accordance with subsection (C, Geotechnical Reports) of this section, below, and which demonstrates that:
 - i. The slope is less than 80 percent; and
 - ii. There is no hazard or the hazard will be mitigated with appropriate conditions. The geotechnical report shall specify adequate development conditions to ensure this.
- d. Development shall be located in accordance with the following:
 - i. Structures and improvements shall be sited, designed, and constructed to minimize cut and fill and to retain as much of the natural topographic character of the slope as possible; and

- ii. Structures and improvements shall be located to avoid the most hazard-prone portion of the site and to preserve vegetation necessary to prevent soil erosion.
 - e. Where previous human activity has significantly modified natural topography, the County may allow further modification of such slopes if the geotechnical report demonstrates that such activity will result in improved slope stability.
 - f. Cleared or graded areas must be restored and protected until replacement plantings are established and maintained unless occupied by structures or other impervious surfaces to avoid soil erosion and to stabilize slopes. Temporary erosion and drainage controls may be required unless permanent restoration and protection are timed to ensure slope stability in the wet season.
 - g. Applications for development where concentrated runoff will be discharged within 50 feet of the boundary of a landslide or erosion hazard area shall be accompanied by a geotechnical report, which must be approved by the County and prepared in accordance with subsection C (Geotechnical Reports), below.
- 2. **Category II.** ~~The administrator may, with discretion or upon receipt of a report from a qualified professional, waive or approve modifications to the requirements set forth in subsections (B)(2)(a – e) of this section.~~
 - a. New essential public facilities should not be located in Category II Geologically Hazardous Areas unless no practicable alternative exists.
 - b. Applications for development in or within 200 feet of all Category II Geologically Hazardous Areas shall be accompanied by a geotechnical report, which must be approved by the County and prepared in accordance with subsection C (Geotechnical Reports), below.
 - c. Applications for development where concentrated runoff will be discharged within 50 feet of the boundary of a landslide or erosion hazard area shall be accompanied by a geotechnical report, which must be approved by the County and prepared in accordance with subsection C (Geotechnical Reports), below.
 - d. The Director may, based on the content of the geotechnical report, waive or approve modifications to the requirements set forth in subsections (B)(2) (e – g) of this section.
 - ae. Development shall be located in accordance with the following:
 - i. Structures and improvements shall be sited, designed, and constructed to minimize cut and fill and to retain as much of the natural topographic character of the slope as possible; and
 - ii. Structures and improvements shall be located to avoid the most hazard-prone portion of the site and to preserve vegetation necessary to prevent soil erosion.
 - bf. ~~Where previous human activity has significantly modified natural topography, the County may allow further modification of such slopes if a the geotechnical report, prepared in accordance with subsection (C) of this section~~ demonstrates that such activity will result in improved slope stability.
 - eg. Cleared or graded areas must be restored and protected until replacement plantings are established and maintained unless occupied by structures or other impervious surfaces to avoid soil erosion and to stabilize slopes. Temporary erosion and drainage controls may be required unless permanent restoration and protection are timed to ensure slope stability in the wet season.

3. **Category III.** Development activities are required to conform to the applicable provisions of the Uniform International Building Code or the International Residential Code, which contains structural safeguards to reduce the risks from seismic activity. Construction performed in accordance with the San Juan County Owner/Builder Provisions (SJCC 15.04.500-710) is exempt from conformance with the International Building Code and the International Residential Code.

4. **All Categories, General Protection Standards – Bulkheads.** Applications for the construction of bulkheads or seawalls shall be accompanied by a geotechnical report, which must be approved by the County and prepared in accordance with subsection (C, Geotechnical Reports), below. In addition to the description in subsection (C, Geotechnical Reports), this report must identify potential adverse impacts to nearby properties and provide mitigation options where necessary. This report must also identify any feasible biotechnical engineering techniques that could effectively control erosion. Additional requirements associated with bulkheads are found in SJCC 18.50. Other provisions in this chapter relating to functions and values of other critical areas may also apply.

Staff note: Until tsunami hazard zone mapping is completed, the County shall provide applicants with information on the risks of tsunami waves if the subject property is located along the marine shoreline. (This would be a department policy, not a codified regulation.)

- C. **Geotechnical Reports.** If a geotechnical report is required in accordance with this section, it shall include investigation, testing, analysis, and recommendations and shall be prepared and signed by an engineer qualified professional with relevant geotechnical education and experience, licensed to practice in the state of Washington. The project area for the geotechnical report shall include all geologically hazardous areas and all potentially affected areas within 200 feet of the proposed development. If the affected area extends beyond the subject property, the geotechnical analysis may utilize existing data sources pertaining to that area. The geotechnical report must address the protection of structures and include consideration of vegetation, including but not limited to the creation or retention of vegetative buffers. The engineer qualified professional shall certify that the project as conditioned or otherwise will pose no unreasonable threat to persons or property either on- or off-site and that the project will not decrease slope stability. (Ord. 2–1998 Exh. B § 3.6.5)

- D. **Qualified Professional.** Qualified professionals shall be either a geotechnical engineer, qualified civil engineer, or certified engineering geologist with experience analyzing geologic, hydrologic, and ground water flow systems and shall be licensed to practice in the state of Washington. When the proposed development is located in an area subject to wave attack, beach processes, and littoral drift, the professional should also have demonstrated experience in assessing and providing management recommendations on sites with active coastal processes.

FREQUENTLY FLOODED AREAS

18.30.130 Frequently Flooded Areas

- A. **Classification Applicability.** This section applies to all areas of special flood hazards within the jurisdiction of San Juan County as identified by the Federal Insurance Administration on

its Flood Insurance Rate Maps (FIRMs), ~~Numbers 530149-0001-0008, dated June 7, 1977, and any revisions thereto,~~ which are hereby adopted by reference and declared to be part of this code. The FIRMs are on file at the ~~permit center~~ Department.

Staff note: The County shall provide information on predicted sea level rise and the associated threats to safety and structures to applicants whose property is located along the marine shoreline. (This would be a department policy, not a codified regulation.)

B. Protection Standards.

1. All developments in areas of special flood hazards must first meet the requirements of this code including any subarea or activity center plans and the San Juan County health and building codes adopted in Chapters 13.04 and 15.04 SJCC, respectively. When allowed, such developments shall also meet the requirements for floodproofing or construction as detailed on the Federal Emergency Management Agency (FEMA) National Flood Insurance Program Elevation Certificates. (Ord. 2 1998 Exh. B § 3.6.6) in SJCC 15.12, the San Juan County Flood Control Ordinance.
2. New essential public facilities should not be located in Frequently Flooded Areas unless no practicable alternative exists.