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Specific Report Requirements - Geologically Hazardous Areas (KMC 18.62.060)

Additional information is required for the Critical Area Report and associated maps for a geologically hazardous area as follows. This shall be prepared by a geotechnical engineer or geologist, licensed in the state of Washington, with experience analyzing geologic, hydrologic, and ground water flow systems; or by a geologist who earns his or her livelihood from the field of geology and/or geotechnical analysis, with experience analyzing geologic, hydrologic and ground water flow systems, who has experience preparing reports for the relevant type of hazard. Preparation of these reports by a state of Washington registered geologist is preferred. **A list of activities/uses that are exempt from this process can be found in KMC 18.62.050.**

☐1. The following areas shall be addressed in a critical area report for geologically hazardous areas:

- Project area of the proposed activity
- All geologically hazardous areas within two hundred (200) feet of the project area or that have potential to be affected by the proposal

☐2. The report shall contain an assessment of geologic hazards information of the site. Site plans for the proposal showing:

- The type and extent of geologic hazard areas, and any other critical areas, and buffers on, adjacent to, within two hundred (200) feet of, or that are likely to impact the proposal
- Proposed development, including the location of existing and proposed structures, fill, storage of materials, and drainage facilities, with dimensions indicating distances to the floodplain
- The topography, in two-foot contours, of the project area and all hazard areas addressed in the report
- Clearing limits

☐3. For Erosion Hazard Areas, Landslide Hazard Areas and Extreme Slope Areas, the site plan for the proposal shall also indicate:

- The height of slope, slope gradient, and cross section of the project area
- The location of springs, seeps, or other surface expressions of ground water on or within two hundred (200) feet of the project area or that have potential to be affected by the proposal (a distance of two hundred feet is suggested so that geological features that might affect the proposal are included in the critical area report. It may be necessary to include features further than two hundred feet from the project area in some instances, such as a series of related geological features that extend more than two hundred feet)
- The location and description of surface water runoff

☐4. An assessment of the geologic characteristics and engineering properties of the soils, sediments, and/or rock of the project area and potentially affected adjacent properties, and a review of the site history regarding landslides, erosion, and prior grading. Soils analysis shall be accomplished in accordance with accepted taxonomic classification systems in use in the region. The assessment shall include, but not be limited to:

- A description of the surface and subsurface geology, hydrology, soils, and vegetation found in the project area and in all hazard areas addressed in the report
- A detailed overview of the field investigations, published data and references; data and conclusions from past assessments of the site; and site specific measurements, test, investigations, or studies that support the identification of geologically hazardous areas
- A description of the vulnerability of the site to seismic and other geologic events

☐5. A geotechnical analysis including a detailed description of the project, its relationship to the geologic hazard(s), and its potential impact upon the hazard area, the subject property and affected adjacent properties.

☐6. For Erosion Hazard Areas, Landslide Hazard Areas and Extreme Slope Areas, the geotechnical analysis shall specifically include:

- A description of the extent and type of vegetative cover
- An estimate of load capacity including surface and ground water conditions, public and private sewage disposal systems, fills and excavations and all structural development
- An estimate of slope stability and the effect construction and placement of structures will have on the slope over the estimated life of the structure
- An estimate of the bluff retreat rate that recognizes and reflects potential catastrophic events such as seismic activity or a one hundred year storm event
- Consideration of the run-out hazard of landslide debris and/or the impacts of landslide run-out on down slope properties
- A study of slope stability including an analysis of proposed angles of cut and fill and site grading
- Recommendations for building limitations, structural foundations, and an estimate of foundation settlement
- An analysis of proposed surface and subsurface drainage, and the vulnerability of the site to erosion

☐7. A recommendation for the minimum no-disturbance buffer and minimum building setback from any geologic hazard based upon the geotechnical analysis

Where a valid geotechnical report has been prepared within the last five (5) years for a specific site, and where the proposed land use activity and surrounding site conditions are unchanged, said report may be incorporated into the required critical area report. The applicant shall submit a geotechnical assessment detailing any changed environmental conditions associated with the site.

When hazard mitigation is required, the mitigation plan shall specifically address how the activity maintains or reduces the pre-existing level of risk to the site and adjacent properties on a long-term basis (equal to or exceeding the projected lifespan of the activity or occupation). Proposed mitigation techniques shall be considered to provide long-term hazard reduction only if they do not require regular maintenance or other actions to maintain their function. Mitigation may also be required to avoid any increase in risk above the pre-existing conditions following abandonment of the activity.

IN ADDITION TO THE ABOVE INFORMATION, INFORMATION FOR SPECIFIC GEOLOGICALLY HAZARDOUS AREAS MUST BE PROVIDED. (KMC 18.62.070)

For *Erosion Hazard Areas, Landslide Hazard Areas and Extreme Slope Areas* following information need to be incorporated in the Critical Area Report:

☐ 1. Erosion and sediment control plan. ***For any development proposal on a site containing an erosion hazard area,*** an erosion and sediment control plan shall be required. The erosion and sediment control plan shall be prepared in compliance with requirements set forth in the City's Construction Standards.

☐ 2. Drainage plan. A drainage plan for the collection, transport, treatment, discharge and/or recycle of water. The drainage plan should consider on-site septic system disposal volumes where the additional volume will affect the erosion or landslide hazard area.

☐ 3. Mitigation plans. Hazard and environmental mitigation plans for erosion and landslide hazard areas shall include the location and methods of drainage, surface water management, locations and methods of erosion control, a vegetation management and/or replanting plan and/or other means for maintaining long-term soil stability.

☐ 4. Monitoring surface waters. If the Planning Director determines that there is a significant risk of damage to downstream receiving waters due to potential erosion from the site, based on the size of the project, the proximity to the receiving waters, or the sensitivity of the receiving waters, the critical area report shall include a plan to monitor the surface water discharge from the site. The monitoring plan shall include a recommended schedule for submitting monitoring reports to the City.

For Other Geologically Hazardous Areas, in addition to the basic report requirements, the Planning Director may require additional information to be included in the critical area report when determined to be necessary to the review the proposed activity and the subject hazard.