



Working Group Meeting Summary – 2024 Critical Areas Ordinance (CAO) Update

Topic: Geologically Hazardous Areas (2nd meeting)

Date: October 10, 2023

Time: 9am-12pm

Location: Online via Zoom

Meeting Purpose: *A follow up discussion of the Geologically Hazardous Areas Working Group meeting held on July 27, 2023. The goal of this meeting is to engage in a comprehensive discussion of Geohazards (KCC 19.400). Working Group members will review and discuss the required and recommended code changes based on the [Best Available Science Summary](#), recommendations contained in the [Consistency and Gap Analysis](#), and discretionary requests made by staff.*

Working Group Members Present	Working Group Members Not Present
WA Dept. of Natural Resources	Kitsap Public Health District
Suquamish Tribe	Port Gamble S’Klallam Tribe
Point No Point Treaty Council	Puyallup Tribe
Kitsap Environmental Coalition	Skokomish Tribe
Kitsap Builders Association	Watershed Consulting Firm
Futurewise	Jamestown
Squaxin Island Tribe	Kitsap Alliance of Property Owners
DCD Staff	Dept. of Ecology

Meeting Materials: [Agenda](#), [Meeting #1 Written Summary](#), [Discretionary changes suggested by staff](#), and [DRAFT code edits for discussion](#)

**This is a summarization of the working group discussion, not a transcript and does not indicate formal County recommendations or updates.*

Background:

The first meeting of the Geologically Hazardous Areas Working Group was held on July 27, 2023, to discuss and review the Best Available Science Summary and Gap Analysis Report provided to the county by The DCG Watershed Company. A summary of that meeting can be found [HERE](#) or by visiting the project webpage at kcowa.us/cao. The second meeting provided draft code language based on the outcome of the first meeting, county staff requests, and recommendations made by the consultants. The working group members reviewed and discussed the following proposed draft code amendments. The proposed code amendments were intended for discussion use only and do not reflect county staff recommendations at this time.



Recommendation #1 – Indicate that channel migration zones may be mapped by other sources in accordance with agency guidance.

KCC 19.400.420.B identifies criteria for identifying potential erosion hazard areas. KCC 19.400.420.B.1.a states that Areas of High Erosion Hazard include “channel migration zones, as mapped by the Washington Department of Ecology.” The Washington Department of Ecology has published guidance for delineating channel migration zones (Ecology 2014). The County could consider amending KCC 19.400.420.B.1.a to also include channel migration zones mapped by others if mapped in accordance with guidance published by the Washington Department of Ecology. (*Gap Analysis, pg. 21*)

Related Code Sections: [KCC 19.400.420.B.1.a](#)

Recommendation #1 Discussion Summary: A working group member pointed out that the added code language as written is difficult to read. A suggestion was made to streamline and remove redundant sections. Another concern was that the high erosion area criteria is not clear in code and the high erosion areas on the CAO map do not meet the criteria described in KCC 19.400.420 B 1a, 1b, or 2. The suggestion was made to consider cross referencing sources of current CAO mapping with code to see what is missing. The code should be clearer about when the indicators come into play (slopes of 15% or greater); shifting the indicators section above Erosion Hazards may help readability. Another consideration would be to clarify early in the section the three different types of geo-analyses (i.e. geological letter, geological report, and geotechnical report – KCC 19.400.440), when they are needed, and what they are asking for. Working group members also felt more clarity on mapped vs unmapped hazard areas should be provided. LIDAR limitation should be addressed in the code as LIDAR identifies man-made slopes of 15% or more as high erosion hazard areas. Finally, a consideration should be made for creating an individual channel migration zone (CMZ) layer on the CAO map, as they are currently combined with all high erosion hazard areas, which makes it unclear as to where the CMZ’s are located.

Recommendation #2 – Provide additional detail in the general information on landslide hazard indicators.

KCC 19.400.425.A states that in general:

Landslide hazard areas include those areas at risk of mass movement due to a combination of geologic, topographic, and hydrologic factors, such as bedrock, soil, slope (gradient), slope aspect, structure, hydrology, and other factors. Landslide hazards are further classified as either shallow or deep-seated.

For additional detail, the County could consider adding that landslide hazard areas include runout distances from the toe of the slope. (*Gap Analysis, pg. 22*)

(No draft code language was proposed for KCC 19.400.425.A at the time of this meeting)



Recommendation #2 Discussion Summary: Discussion began with a question about runout distance calculations and whether they should be required in code. Staff noted that they typically defer to the expertise of the professional engineering geologist to determine if the calculation is necessary. These areas are already required to have a geotechnical report, which should include discussion of runout distance. A working group member asked if this code update is necessary at all, and if anyone has perished in Kitsap County due to a landslide, and voiced concern for additional costs to property owners. County Staff reminded the group that this update is required by state law. Another working group member noted that the purpose of this code is to prevent people from buying or developing on land where they are at risk of property value loss or serious injury/loss of life.

Recommendation #3 – Add additional specificity on landslide hazard indicators.

KCC 19.400.425.C enumerates landslide hazard indicators. One indicator is “areas with slopes containing soft or liquefiable soils” (KCC 19.400.425.C.10). To provide additional specificity, the County could consider adding that such areas include unconsolidated glacial deposits subject to elevated groundwater levels after prolonged rainfall or rain-on-snow events. (*Gap Analysis*, pg. 22)

Related Code Sections: [KCC 19.400.425.C](#)

Recommendation #3 Discussion Summary: It was highlighted that the term “prolonged rain” should be more specific as this could be interpreted differently. Another member mentioned that prolonged rain may not matter if a property doesn’t have elevated groundwater. Staff noted that the best available science identifies heavy precipitation or elevated groundwater as the most common cause of landslides in the Puget Sound. County staff should consider defining “elevated groundwater.”

Recommendation #4 – Add additional specificity on seismic hazard indicators.

KCC 19.400.430.C enumerates seismic hazard indicators. For tsunami and seiche hazard areas, the code states that these areas are generally adjacent to Puget Sound marine waters and lakes that are designated as “A” or “V” zones as identified by Federal Emergency Management Agency and depicted on the Federal Emergency Management Agency maps or other maps adopted by Kitsap County (KCC 19.400.430.C.4). Tsunami and seiche hazard areas would also include areas inundated by projected wave heights resulting from an offshore (Cascadia Subduction Zone) earthquake. The County could consider adding text to KCC 19.400.430.C.4 to identify such areas as additional seismic hazard indicators. (*Gap Analysis*, pg. 22)

Related Code Sections: [KCC 19.400.430](#)

Recommendation #4 Discussion Summary: It was highlighted that Washington Geological Survey has made tsunami maps available on their website for educational purposes. Perhaps the county should reference this resource in code. It was suggested that the current code appears to describe two different types of hazards – tsunamis, which would appear to impact shorelines and properties near water, and other seismic hazards that impact everywhere. The question is, based on this interpretation, if tsunami hazards should be relocated to the shoreline code as they primarily impact shorelines. It was stated that



tsunamis can impact properties well inland, and isolating tsunami language to shoreline code may mislead inland property owners to believe they are not at risk when they are. Perhaps staff could consider consolidating tsunami language in CAO and shoreline codes to make things easier for applicants to understand. A member noted that it would be helpful to differentiate the seismic risk areas and the tsunami risk areas in the parcel search map, as well as the requirements for both.

<p align="center">Summary of Potential Code Changes - <i>The following code sections were identified for discussion purposes and relate to the various topics and recommendations above.</i></p>		
Code Section	Issue	Suggested Change for Group Discussion
KCC 19.400.420.B.1.a	Channel Migration Zones <i>(Related to Consistency and Gap Analysis Rec. #1)</i>	<p>1. <i>Areas of High Erosion Hazard.</i></p> <p>a. Channel migration zones, as mapped by the Washington Department of Ecology or other qualified professional engineer or hydrogeologist, using sources and methods in accordance with Washington Department of Ecology Channel Migration Zone guidance, including other source mapped in accordance with Washington Department of Ecology guidance, such as the Department of Natural Resources Geologic Information Portal;</p>
KCC 19.400.425.C	Landslide Hazard Indicators <i>(Related to Consistency and Gap Analysis Rec. #3)</i>	<p><i>C. Landslide Hazard Indicators.</i></p> <p>[...]</p> <p>10. Areas with slopes containing soft or liquefiable soils, <u>such as areas with unconsolidated glacial deposits subject to elevated groundwater levels after prolonged rainfall or rain-on-snow events;</u></p> <p>[...]</p> <p><u>15. Areas within potential landslide runout distance greater than the slope height as measured from toe of slope or as determined in a geological hazards geotechnical report.</u></p>
KCC 19.400.430	Seismic Hazard Indicators <i>(Related to Consistency and Gap Analysis Rec. #4)</i>	<p><i>C. Seismic Hazard Indicators.</i> Project proponents are responsible for determining actual presence and location of a seismic hazard area. These areas may be indicated by, but not limited to, the following:</p> <p>4. Tsunami and seiche hazard areas. Generally, these are</p>



		<p>areas that are adjacent to Puget Sound marine waters and lakes <u>with shoreline elevations at risk of flooding under projected wave propagation models. They include, but are not limited to, areas that are</u> designated as “A” or “V” zones as identified by FEMA and depicted on the FEMA maps or other maps adopted by Kitsap County;</p> <p>[...]</p>
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<i>Other Discretionary Changes - The following code sections do not necessarily relate to any of the topics or recommendations in the summary above.</i>			
Code Section	Issue	Suggested Change for Group Discussion	Other Group Comments
19.400.410(D)(2)	Vegetation removal from landslide hazard area	Administrative Change. Section should apply to landslide AND erosion hazard areas.	No comments from group on suggested change.
19.400.435(A)	Development standards applicability	Administrative Change. Section should apply to landslide AND erosion hazard areas.	Member noted that the language in this section implies that setbacks can only be <i>increased</i> after a geologic assessment, when in reality they could also <i>decrease</i> . It was agreed that the county should consider changing the language to something along the lines of “modify setback distance” rather than increase/decrease.
19.400.435(B)	Seismic hazard development standards	Currently reports are required only for high seismic hazard areas, should it also apply to moderate? Check with building division on IRC requirements and how verified.	Member noted that it would be helpful for county to clarify the difference between high and moderate erosion hazard areas for construction and permit review.
19.400.445	Recording and disclosure	Clarify to be consistent with how applied? Only doing Notice to Title (NTT) if Geotech has recommendations which will require on-going actions (slope setbacks, etc.).	Consider whether Geotech reports should be included in notice to title. May be too much information to include in notice to title but would provide property owners with relevant hazard information and reduce liability of county.



General Discussion:

- Member suggested that Staff consider moving erosion hazard areas to stormwater code as it may be considered more of an engineering challenge rather than an area to protect. Stormwater code is updated more frequently so there would be more opportunities to address any issues that come up.
- Code mentions both “qualified” and “certified” arborist; member suggests the terminology should be consistent.
- Ensure consistency of terms throughout this section of code and spell out any acronyms that are not already.

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