



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

Topic: Geologically Hazardous Areas – July 27, 2023 @ 9am-12pm via Zoom

Meeting Purpose: To engage in a comprehensive discussion of Geologically Hazardous Areas by reviewing and discussing the Best Available Science (BAS) summary, recommendations in the Consistency and Gap Analysis report (Chapter 4), and existing County code section KCC 19.400.

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

Meeting Materials: [Working Group Guidelines and Schedule](#), [Gap Analysis Report](#), [Best Available Science \(BAS\) Summary Report](#), [KCC 19.400 – Geologically Hazardous Areas](#)

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*)

Discussion Summary: The county needs direction on where to put Channel Migration Zone (CMZ) mapping (re: erosion hazard areas or frequently flooded areas) in the code. Applicants and project reviewers need to know where this body of information is housed. Department of Natural Resources (DNR) currently has a mapping tool available at the [Washington Geological Survey Geologic Information Portal](#). The county could cross reference this tool in the code for easy access. Previous CMZ mapping done in Kitsap County prior to the Department of Ecology’s guidance was only done for a few large streams. Many other streams in Kitsap County should be included with Ecology’s new guidance. The county has included the CMZ mapping done for the Shoreline Master Plan into the geohazards layer within the county’s mapping tool,

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



“parcel search”. Washington Geological Survey (WGS) has mapped some landslide areas and the county could incorporate those into the CMZ mapping to address high bank issues. CMZ’s can occur anywhere so it makes sense to include them in the erosion hazards area. Cross reference CMZ’s from one section of code to another to include in all relevant sections.

Future Considerations for Recommendation #1:

- Are there metrics on trends of property loss related to CMZ’s?
- Any other problems the public must deal with regarding CMZ’s?
- Should KC add DNR’s WA Geological Survey port as a reference?
- Where should CMZ mapping exist in county regulations?

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*)

Discussion Summary: There are two approaches to defining landslide hazards; existing landslide paths and geological characteristics of *potential* landslide areas. The county’s CMZ mapping/program could include alluvial fans. Landslide runout areas should be calculated on a site-specific basis. Landslides happen on not-so-steep slopes as well and those areas should not be ignored as there are many other factors to consider. If landslide hazards are identified on a property, runout calculations should be an option for consideration with each permit. Most jurisdictions use slope height to calculate runout distance, but debris flow should also be considered. Debris flow is not currently addressed in the code and should be identified as a type of landslide. The code could include descriptions of the different types of landslides. Alternative methods of calculating the runout distance would be identified in a geotechnical report prepared by a licensed professional, rather than having a specified formula in code.

Additional resources provided by Department of Natural Resources (DNR) that may be relevant are [Forest Practices Board Manual](#) and [Riparian Open Space Program](#).

Future Considerations for Recommendation #2:

- Add runout descriptors and calculations to the geotechnical report criteria?
- Identify what characteristics on a property would trigger a need for runout calculation.



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*)

Discussion Summary: The CAO should recognize that landslide hazards areas may not have past indicators but still have potential for landslide to occur. County staff should be looking at potential landslide indicators, not just landslides that have already occurred. The CAO needs to include the factors that demonstrate the potential that a hazard could occur.

Future Considerations for Recommendation #3:

- Identify factors for potential landslide hazards.
- Should potential landslide hazards be included in geologic assessment and review?
- What other jurisdictions include “factors that demonstrate the potential that hazards could occur”? Include examples.

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*)

Discussion Summary: FEMA maps don’t address less developed shoreline areas. The county should recognize hazards that exist along the entire shoreline, such as Point No Point and Suquamish, not just flood insurance areas. Try to look forward regarding hazards (i.e. tsunami modeling throughout Puget Sound.)

Future Considerations for Recommendation #4:

- Is there an elevation to discuss re: tsunami threat?



- Can we calculate different wave heights and structure heights needed for different areas?

Future Considerations for Overall CAO conversation:

- Geohazards is the only critical area that requires Notice to Title ([KCC 19.400.445](#)). If a geotechnical report is required, staff issues a notice to title ([KCC 19.800 Appendix E](#)). Prior to 2017 CAO Update, Notice to Title was required for wetland buffers.