Pierce County

Upper White River
Channel Migration Zone (CMZ) Study

Frequently Asked Questions – FAQs

1. *What is a Channel Migration Zone (CMZ)?*

A channel migration zone (CMZ) is defined as, "The area along a river within which the channel(s) can be reasonably predicted to migrate over time as a result of natural and normally occurring hydrological and related processes when considered with the characteristics of the river and its surroundings." In Washington Administrative Code (WAC) 173-26-020(6).

In other words, channel migration is typically a long-term, natural geologic process which describes how a stream, or river channel moves over time. Channel migration is affected by a variety of factors such as time, geology, sediment supply, river/stream flow, vegetation, natural slope or embankment instability, and human development. While these processes are normally slow going, high water events, flooding, and human influence can rapidly affect the speed at which a channel changes course or migrates over time. In some instances, channels can change position radically (this is called channel avulsion). This process usually occurs in low lying areas between river bends or where a segment of previously abandoned river channel is reoccupied. These areas are also considered part of a channel migration zone.

Channel migration can damage or destroy homes, septic systems, wells, roads, bridges and other infrastructure, so it's important (not only required) for local governments to identify them.

2. *What's the difference between a Flood Map and a Channel Migration Zone (CMZ)?*

The flood map predicts how high the water will get during the flood, before the river/stream returns to normal flow. Flood maps are used for floodplain management, flood insurance rating, and to determine flood insurance requirements. Flood maps generally show the area that would be inundated in the one-percent-annual-chance flood, commonly called the 100-year flood for its one in a hundred chance of occurring every year. The flood map shows the extent of how far from the normal flowing water a major flood can extend across areas normally dry. The flood maps are based on the best information (rain and snow melt data, stream flow records, channel location and adjacent topography) available at the time the maps were prepared.

Channel migration zones describe a risk of the river/stream channel moving to a new location and possibly staying there long after the flood waters recede. Where a flood map predicts how water will flow over the existing ground for a given flood event, the channel migration zone map predicts where the ground is most likely to be eroded away.

3. *Why is the county conducting a CMZ study?*

In Pierce County, migrating rivers have washed homes downstream, undercut banks, destroyed roads, sent trees toppling onto homes, and have the potential to take lives. Understanding the potential for channel migration can help the County and its riverside communities know and plan for different levels of risk.

The County has completed channel migration studies on the following rivers: Puyallup, Carbon and lower White (2003), South Prairie Creek (2005), Upper Nisqually (2007), and the Greenwater (2017). The Upper White River CMZ study is the only remaining CMZ study to be done in the county. It will provide a level of certainty to current and future property owners as it will identify low-risk areas, that is, areas not as likely to be harmed by channel migration.

4. *What methodology will be used to conduct the study?*

The County's project team, including technical consultant GeoEngineers, will gather physical and historical data. The team will work closely with residents and community groups to augment the data with local information, in order to analyze the potential future migration of the Upper White River. The study will be based on best available science, using the Washington State Department of Ecology's CMZ study methodology. For more information on the methodology behind identifying CMZs, please visit Washington State Department of Ecology's CMZ webpage.

5. *If my property is located within a "severe-risk" channel migration zone what does that mean for me?*

Once the CMZ study is adopted by the County, if your property has areas mapped at a severe risk for channel migration, the severe risk area on your property will be regulated as a floodway. Structures located in a floodway per the Channel Migration Zone, may only be restored up to the limits of substantial improvement, if the structure is damaged or destroyed from flooding or channel migration, as set forth in Pierce County Code (PCC) 18E.20.070.

If you currently have flood insurance or plan to obtain it, the severe risk zone will not change your insurance rates. The National Flood Insurance Program does not set policy rates based on erosion hazards. It would pay a flood claim if a structure was damaged in a flood due to erosion.

6. *If my property is within the CMZ's "severe-risk" zone, can I rebuild my property if it burns down?*

In an exception to Item #5 above, the floodway code will not prevent a structure that is damaged as a result of fire, explosion or other casualty from being restored or replaced if the structure is only in a CMZ floodway as described in PCC 18E.20.040 D.4. Other issues, such as wetlands, proximity to shoreline, landslides or zoning codes, could limit a rebuilding effort.

7. *Can members of the public influence where the "risk lines" are drawn?*

The "risk lines" are based on past migration rates applied over a desired future time frame. The public cannot influence those past rates. However, if the county wants to change the time over which to apply those rates, that would influence the location of the "risk lines."

The county is committed to working with the community during the CMZ study. They will seek information from the community to ensure local knowledge and history is incorporated into the study and seek input from the community on the draft study report. If you have specific knowledge regarding the soils on your property, past actions to redirect the river or protect a river bank or photos that show where the river has moved, please be sure to attend future community meetings or contact the team directly. The report will show areas at different categories of risk based on the best scientific information available to professional geologists. Once the report is finalized, adoption of the CMZ map will also have an associated public process.

8. Can I be exempt from the county's floodway regulations?

The CMZ study will evaluate all property within the project area without exception, but the floodway code has exemptions for structures that do not require a building permit, certain agricultural activities and other permitted development in the floodway (PCC 18E.70.040.B).

9. Am I currently eligible for flood insurance?

Yes. Anyone in Pierce County can purchase flood insurance, even if you do not live in a floodplain. Because every community in the County is a member of the National Flood Insurance Program (NFIP), you are eligible to get flood insurance to cover your home or business. Learn more about the program on the Federal Emergency Management Agency (FEMA) webpage. FEMA also publishes maps indicating a community's flood hazard areas with the degree of risk in those areas. These maps can be found at https://msc.fema.gov/portal/home.

Pierce County participates in the FEMA Community Rating System (CRS) program. CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Pierce County's participation in the CRS program presently results in a 40% reduction in flood insurance policy premiums for properties in unincorporated Pierce County.

10. Can I get flood insurance if I'm renting a property?

If you are a renter, you can buy a policy from the NFIP to cover contents up to $100,000. The difference between a NFIP renter's policy and a traditional renter's insurance policy is that the NFIP policy covers your personal property and contents during a flood event.

11. How will the flood control vanes installed by the Crystal River Ranch HOA be considered in the CMZ study?

The Washington Administrative Code (WAC) has the following guidance on how to consider channel constraints such as the rock vanes: "In areas outside of incorporated municipalities and urban growth areas, channel constraints and flood control structures built below the one hundred-year flood elevation do not necessarily restrict channel migration and should not be considered to limit the channel migration zone unless demonstrated otherwise using scientific and technical information. "Pursuant to this guidance, and without expressing any opinion on the potential effectiveness of the rock vanes installed by the Crystal River Ranch community, the county's CMZ study will not consider the rock vanes in the analysis of channel migration risk.