

Channel Migration & SMP Updates

Shorelands and Environmental Assistance Program
Washington Department of Ecology

Patricia L. Olson, Hydrogeologist, LHG

What is a channel migration zone?

WAC 173-26-020(6): "Channel migration zone (CMZ)" means 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."



What are SMP requirements for CMZ?

WAC 173-26-201(3)(c): Inventory shoreline conditions.

- Local governments shall, at a minimum, and to extent information is relevant and reasonably available, collect the following information:
 - (ii) Information on critical areas
 - (vii) General location of channel migration zones and flood plains.

What's reasonable?

To determine potential migration

- Information on channel characteristics such as channel gradient and confinement.
- 2 to 3 time series of aerial photographs, maps, LiDAR or whatever is available.
 - ix) Already states that aerial photographs may be necessary to identify cumulative impacts
- Existing GIS geology and soils data to evaluate erosion potential
 - WAC 173-26-221(3)(b): based on the historic record, geologic character and evidence of past migration over the past 100 years

Shoreline habitat, resources, critical areas

- WAC 173-26-201(3)(d)(i)(D): channel migration included as one of the ecosystem functions and processes of overall condition



Shoreline habitat, resources, critical areas

- WAC 173-26-221(2)(c)(iv): Critical areas
 - CMZ included as a critical freshwater habitat
 - New development in the CMZ limited to that which does not:
 - Cause net loss of ecological functions
 - Requires that SMPs include standards to implement principles described above.



E.R. Keeley

WAC 173-26-221: Flood Hazard Reduction

- **WAC 173-26-221(3)(b-c):**
Applicable shoreline master programs should include provisions to limit development and shoreline modifications that would result in interference with the process of channel migration that may cause significant adverse impacts to property or public improvements and/or result in a net loss of ecological functions associated with the rivers and streams.



WAC 173-26-221: Flood Hazard Reduction

- **WAC 173-26-221(3)(b):** Failing to recognize the [channel migration] process often leads to damage to, or loss of, structures and threats to life safety



WAC 173-26-221(3)(b): Exemptions

The SMP guidelines recognize that previous human actions may deter channel migration. Areas may be removed from the channel migration area if:

- Within incorporated municipalities and urban growth areas,
 - Publicly maintained levees, revetments
 - Public transportation facilities that can withstand the one hundred-year flood

- Outside incorporated municipalities and urban growth areas, only channel constraints built above the 100-year flood elevation and maintained by public groups

Preliminary results for potential migration areas

- Of 51 communities:
 - 40 have potential channel migration
 - 5 counties, 35 cities & uga
- Of those 40:
 - 16 may have exemptions but need checking
 - 6+ have existing CMZ assessments
 - Mason County has an assessment on the Skokomish River
 - Pierce County has CMZ assessments that include Pacific, Sumner, Bonney Lake UGA
 - A CMZ assessment is completed on Dungeness River
 - Whatcom County SMP includes a migration & avulsion hazard map for Lynden and Nooksack

Draft Web CMZ Guidelines

- CMZ assessment web technical guidelines
 - <http://www.ecy.wa.gov/programs/sea/sma/cma/index.html>
- Draft document so if you would like to comment, instructions are at:
 - <http://www.ecy.wa.gov/biblio/0806013.html>

