

Example Jurisdictions SMP Regulations:

King County Regs: http://your.kingcounty.gov/des/pub_rule/acrobat/21a-24cma.pdf

Pierce County's Feb 4, 2009 discussions here:

<http://www.co.pierce.wa.us/xml/services/home/enviro/water/cip/cmz/cmzcac/2009/02-04-09Notes-DRAFT.pdf>

<http://www.co.pierce.wa.us/xml/services/home/enviro/water/cip/cmz/cmzcac/2009/CMZ-CACFAQs0409.pdf>

Snohomish County Draft policies (pg 3 of 5):

<http://www.co.pierce.wa.us/xml/services/home/enviro/water/cip/cmz/cmzcac/2009/02-04-09Notes-DRAFT.pdf>

Jefferson' County 02/07/08 CAO CMZ Minority Report:

http://www.co.jefferson.wa.us/commdevelopment/PDFS/CAO/PC_MajorityMinorityRpts/PC%20CAO%20Minority%20Report%202-7-08_Attachment%20G.pdf

ECY Ltr to Gray's Harbor CAO & CMZ issues: http://www.co.grays-harbor.wa.us/info/pub_svcs/CriticalComments/DOE%202.pdf

Chehalis Tribe CMZ policies: <http://www.chehalis-tribe.org/resources-services/docs/ordinances/Zoning%20Ordinance/Chehalis%20Zoning%20Ordinance,%20Approved.pdf>

City of Kent:

Policies:

4. Development that hinders natural channel movement in **channel migration zones** should not be allowed (refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the Inventory and Analysis Report).

6. Developments and uses that would substantially degrade or permanently deplete habitat or the physical or biological resources of the area or inhibit stream movement in channel migration zones should not be allowed. (Refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the Inventory and Analysis Report).

Regulations:

3. Disposal of dredge material within a **channel migration zone** shall require a conditional use permit (refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the Inventory and Analysis Report).

7. In **channel migration zones**, natural geomorphic and hydrologic processes shall not be limited and new development shall not be established where future shoreline modifications will be required and shall include appropriate protection of ecological function (refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the Inventory and Analysis Report).

New Development

1. New development shall, where feasible, be located and designed to eliminate the need for concurrent or future shoreline stabilization. New non-water dependent development that would require shoreline stabilization that would cause significant adverse impacts to adjacent or down-current properties or restrict channel migration in **Channel Migration Zones** is prohibited. (Refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the Inventory and Analysis Report).

12. New or expanded shoreline stabilization measures in **channel migration zones** require a thorough analysis performed by a licensed geologist with an appropriate specialty license and fluvial geomorphic experience, in addition to a professional engineer, to ensure that the measure does not interfere with fluvial hydrological and geomorphological processes normally acting in natural conditions. (Refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the Inventory and Analysis Report).

Policy

2. Shoreline fill should be designed and located so there will be no significant ecological impacts and no alteration of local currents, surface water drainage, channel migration, or flood waters which would result in a hazard to adjacent life, property, and natural resource systems.

Regulation

3. Fills are **prohibited** in floodplains where they would alter the hydrologic characteristics, flood storage capacity, or inhibit channel migration that would, in turn, increase flood hazard or other damage to life or property. Fills are **prohibited** in floodway, except when approved by Conditional Use permit and where required in conjunction with a proposed water-dependent or other use specified in Regulation No. 2 above.

4. Fill shall be permitted only where it is demonstrated that the proposed action will not:
 - a. Result in significant ecological damage to water quality, fish, shellfish, and/or wildlife habitat;
 - or
 - b. Adversely alter natural drainage and circulation patterns, currents, river flows or significantly reduce flood water capacities.
 1. c. Alter channel migration, geomorphic, or hydrologic processes.
2. Disposal of dredge material within a **channel migration zone** shall be discouraged. (Refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the Inventory and Analysis Report).

1. Dredging and dredge disposal shall be permitted only where it is demonstrated that the proposed actions will not:

- a. Result in significant or ongoing damage to water quality, fish, and shoreline habitat;
- b. Adversely alter natural drainage and circulation patterns, currents, river flows, channel migration processes or significantly reduce flood water capacities; or
- c. Cause other significant ecological impacts.

17. Disposal of dredge material within a **channel migration zone** shall require a conditional use permit. (Refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the Inventory and Analysis Report).

*12. Development in **channel migration zones** is allowed only by conditional use permit where it can be shown that such development would not prevent natural channel migration. (Refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the June 9, 2009 Final Shoreline Inventory and Analysis Report).*

5. In **channel migration zones**, natural geomorphic and hydrologic processes shall not be limited and new development shall not be established where future stabilization will be required. (Refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the June 9, 2009 Final Shoreline Inventory and Analysis Report).

6. As described in WAC 173-26-221 (3) (c), appropriate development may be allowed in areas landward of Green River Road because the road prevents active channel movement and flooding. This area is therefore not within a **channel migration zone** (refer to **Channel Migration Zone** Map, Figure No. 10.2 in the Inventory and Analysis Report).

The creation of new agricultural lands by diking, draining, or filling marshes, **channel migration zones**, and associated marshes, bogs, and swamps should be prohibited.

3. A buffer of natural or planted permanent native vegetation not less than 20 feet in width, measured perpendicular to the shoreline, shall be maintained between areas of new development for crops, grazing, or other agricultural activity and adjacent waters, **channel migration zones**, and marshes, bogs, and swamps. The City's Shoreline Administrator shall determine the extent and composition of the buffer when the permit or letter of exemption is applied for.

6. Existing and ongoing agricultural uses may be allowed within a **channel migration zone** or floodway provided that no new restrictions to channel movement occur.

g. Development consistent with this SMP may be allowed landward of Green River Road because the road prevents active channel movement and flooding and therefore is not within the **channel migration zone**.

Channel Migration Zone (CMZ). 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. For locations of CMZ, refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the June 9, 2009 Final Shoreline Inventory and Analysis Report.

Geotechnical report (or geotechnical analysis). A scientific study or evaluation conducted by a qualified expert that includes a description of the ground and surface hydrology and geology, the affected land form and its susceptibility to mass wasting, erosion, and other geologic hazards or processes, conclusions and recommendations regarding the effect of the proposed development on geologic conditions, the adequacy of the site to be developed, the impacts of the proposed development, alternative approaches to the proposed development, and measures to mitigate potential site-specific and cumulative impacts of the proposed development, including the potential adverse impacts to adjacent and down-current properties. Geotechnical reports shall conform to accepted technical standards and must be prepared by qualified engineers or geologists who are knowledgeable about the regional and local shoreline geology and processes. If the project is in a **Channel Migration Zone**, then the report must be prepared by a professional with specialized experience in fluvial geomorphology in addition to a professional engineer. (Refer to the **Channel Migration Zone** Map, Figure No. 10.2 in the June 9, 2009 Final Shoreline Inventory and Analysis Report).

Whatcom County

h. Minor trenching to allow the installation of necessary underground pipes or cables if no alternative, including boring, is feasible, and:

- (1) Impacts to fish and wildlife habitat are avoided to the maximum extent possible.
- (2) The utility installation shall not increase or decrease the natural rate, extent, or opportunity of channel migration.

i. Marinas shall not be permitted in areas of active channel migration, where channel dredging will be required, if a flood hazard will be created, or if valuable shoreline ecological functions and processes will be degraded.

- a. New or expanding development or uses in the shoreline, including subdivision of land, that would likely require structural flood control works within a stream, **channel migration zone**, or floodway should not be allowed.

e. Mining within a designated **channel migration zone** may be approved as a conditional use.

10. Open pit mining may be permitted in a floodplain provided that all of the following criteria are met:

- a. All pits and other operations should be located outside of the **channel migration zone**.
 - a. New residential development may not be approved in cases when it can be reasonably foreseeable that the development or use would require structural flood hazard reduction measures within a **channel migration zone** or floodway during the life of the development or use.

k. New residential lots created through land division in the shoreline shall only be permitted when the following standards are met:

- (1) Land division may not be approved in cases when it can be reasonably foreseeable that the development or use would require structural flood hazard reduction measures within a **channel migration zone** or floodway during the life of the development or use.

23.100.13.B.5 Application Materials

Geotechnical reports required pursuant to this section shall address the need for shoreline stabilization and shall include the following:

b. A description of the processes affecting the site, and surrounding areas that influence or could be influenced by the site, including areas in which stream processes, lake or marine geomorphic processes affect the site, including, but not limited to:

- (1) Soil erosion, deposition, or accretion;
- (2) Evidence of past or potential channel migration;

d. Spans on rivers shall avoid placing structures within the **channel migration zone** or other dynamic, shifting channel elements such as bends.

1. "**Channel Migration Zone**" means the area along a river or stream within which the channel can reasonably be expected to migrate over time as a result of normally occurring processes. It encompasses that area of current and historic lateral stream channel movement that is subject to erosion, bank destabilization, rapid stream incision, and/or channel shifting, as well as adjacent areas that are susceptible to channel erosion. There are three components of the **channel migration zone**: (1) the Historical Migration Zone (HMZ)—the collective area the channel occupied in the historical record; (2) the Avulsion Hazard Zone (AHZ)—the area not included in the HMZ that is at risk of avulsion over the timeline of the CMZ; and (3) the Erosion Hazard Area (EHA)—the area not included in the HMZ or the AHZ that is at risk of bank erosion from stream flow or mass wasting over the timeline of the CMZ. The **channel migration zone** may not include the area behind a lawfully constructed flood protection device. **Channel migration zones** shall be identified in accordance with guidelines established by the Washington State Department of Ecology.

6. "Erosion Hazard Areas" means lands or areas underlain by soils identified by the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) as having "severe" or "very severe" erosion hazards and areas subject to impacts from lateral erosion related to moving water such as river channel migration and shoreline retreat.

Yakima County SMP

Floodway / **Channel Migration Zone (CMZ) Environment Policies**

NS 7.17 The Floodway/**Channel Migration Zone** environment should protect the water areas; islands, associated overflow channels, and channel migration areas. This environment acknowledges the river's need to move within parts of its floodplain, and emphasizes the preservation of the natural hydraulic, geologic and biological functions of the county's shorelines that are constrained by severe biophysical limitations.

NS 7.18 A Floodway/**Channel Migration Zone** designation should be assigned to shoreline areas that are within mapped **Channel Migration Zones** and/or within a designated FEMA Floodway. The extent of the Floodway/**Channel Migration Zone** should never extend beyond the 100-year flood plain.

NS 7.19 Generally, commercial, industrial, mining, non-water oriented recreation, roads, utilities, parking areas, and residences should not be located in the Floodway/**Channel Migration Zone** Environment. Other uses (recreation, resource uses, etc.) should be carefully limited to protect shoreline functions. Restrict activities that may degrade the actual or potential value of

this environment, and severely restrict development in hazardous areas. Modifications that harden or fix stream banks and channels should be discouraged.

Critical Areas, Restoration, and Vegetation Conservation Policies

NS 7.23 New development or new uses, including the subdivision of land, should not be established when it would be reasonably foreseeable that the development or use would require structural flood hazard reduction measures within the **channel migration zone** or floodway.

Mining

NS 7.73 Remove sand, gravel, and minerals from only the least sensitive shoreline areas. Due to the risk of avulsion and mine pit capture by the river, mining within the stream channel and **channel migration zone** should not be allowed. In special cases where it is allowed, it should be a conditional use. Restoration or enhancement of ecological function is encouraged.

16D.02.090 Channel Migration Zone

For purposes of administering the Shoreline Master program "**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.

16D.02.321 Qualified Professional (e) A qualified professional for **channel migration zone** reports must be a professional engineering geologist, civil engineer or geologist licensed in the state of Washington, with a minimum of five years of professional experience in geomorphology.

16D.03.18 Supplemental Report Requirements for Specific Critical Areas

1) **Stream Corridors.** When a critical areas report is required for a stream corridor or hydrologically related critical area, it shall include the following:

- a) A habitat and native vegetation conservation strategy that addresses methods to protect and enhance the functional properties listed in section 16D.06.05 (Functional Properties);
- b) Where there is evidence that proposed construction lies within an immediate zone of potential channel migration, representing a future hazard to the construction, a hydrologic analysis report may be required. The report shall assume the conditions of the one hundred-year flood, include on-site investigative findings, and consider historical meander characteristics in addition to other pertinent facts and data.

16D.03.27 General Critical Areas Protective Measures (3) Subdivision Standards - The following standards apply to all permits or reviews under the Subdivision Ordinance (YCC Title 14) that contain critical areas:

- a) All subdivisions that contain critical areas shall be eligible for density bonuses or other development incentives, as provided in the Subdivision Ordinance (YCC Title 14) and Zoning Ordinances (YCC Titles 15 and 15A);
- b) Critical areas shall be actively protected through the following:
 - i) Roads and utilities for the subdivision shall avoid critical areas and their buffers, as much as possible;

ii) When Geologically Hazardous Areas (excluding Erosion, Over-steepened Slopes of Intermediate Risk, Stream Undercutting, and Earthquake hazards), FEMA Floodway, Channel Migration Zone (CMZ), Streams, Wetlands and/or Vegetative Buffers fall within the boundary of a subdivision.

(1) Said critical areas shall be protected by placing them entirely within a separate critical area tract, or by including them entirely within one of the developable parcels. Other options, such as conservation easements and building envelopes may be deemed by the Administrative Official as meeting this provision when special circumstances obstruct the viability of this provision;

(2) For those new lots that do contain said critical areas, useable building envelopes (5,000 square feet or more for residential uses) shall be provided on the plat that lie outside said critical areas.

- iii) New lots partially within the floodplain shall provide a usable building envelope (5,000 square feet or more for residential uses) outside the floodplain;
- iv) New lots entirely within the floodplain shall be at least one (1) acre in area;
- v) For new lots containing streams, wetlands, and/or vegetative buffers, outdoor use envelopes (such as lawns, gardens, play areas, gazebos, etc.) shall be provided on the plat that lie outside said critical areas;
- vi) Degraded vegetative buffers shall be restored, or provided with protection measures that will allow them to recover;
- vii) Floodplains and critical areas shall be depicted on preliminary subdivision plats and relevant information about them disclosed on the final plat.

16D.05.32.010 Permitted Uses (2)(B) Buried utility transmission lines transporting hazardous materials, including but not limited to crude and refined petroleum products and natural gas, shall be buried a minimum of four feet. Such burial depth shall be maintained within the floodway fringe or special flood hazard area to the maximum extent of potential channel migration as determined by hydrologic analyses. All such hydrologic analyses shall conform to requirements of Section 16D.05.36.010(2)(c).

16D.05.32.010 Permitted Uses (2)(C) Beyond the maximum extent of potential channel migration, utility transmission lines transporting hazardous and nonhazardous materials shall be buried below existing natural and artificial drainage features. Burial depth in all other agricultural and nonagricultural floodway fringe or special flood hazard areas shall be determined on the basis of accepted engineering practice and in consideration of soil conditions and the need to avoid conflict with agricultural tillage.

16D.05.32.010 Permitted Uses (2)(D) Beyond the maximum extent of potential channel migration, utility transmission lines transporting hazardous and nonhazardous materials shall be buried below existing natural and artificial drainage features. Burial depth in all agricultural areas requiring or potentially requiring subsurface drainage shall be a minimum of six feet as measured

16D.06.05 Functional Properties (2) Stream channels generally support one or more of the following functional properties:

- a) Groundwater recharge and/or discharge;
- b) Water transport;
- c) Sediment transport and/or storage;
- d) Biogeochemical functions (see lakes, ponds and wetland functions below);
- e) Channel migration and creation of a dynamic habitat mosaic;
- f) Food web and habitat functions.

16D06.08 Maps (2) Administrative maps are intended to indicate the approximate presence, location and/or typing of the subject critical area features, and act as a trigger for further investigation of the extent and characteristics of critical areas in a specific project location. These maps were created using reconnaissance level or better data. Given site-specific variations in reconnaissance level data, more detailed information developed at the site-specific level may be used to modify the maps as it is developed; the maps maintained by the Yakima County Public Services Department do not officially define the extent or characteristics of specific critical areas; rather the physical characteristics that exist “on the ground” define the boundaries of the regulated critical areas. Administrative maps include, but are not limited to the following;

- a) Wetlands;
- b) Streams;
- c) Channel migration zone;
- d) Species and Habitats of Local Importance - Mapped habitat areas for newly listed species will be generated as needed to supplement the existing maps. Habitats of local importance currently include:
 - i) Type 2 Streams, lakes and/or ponds listed in Appendix A and described in section 16D.06.06(2) above.
- e) Upland Wildlife Habitat Analysis Map;

16D.06.18 Utility Transmission Lines and Facilities (3) Buried utility transmission lines crossing a stream corridor shall be buried a minimum of four feet below the maximum scour or 1/3 of the bankfull depth of the waterway, whichever is greater, and for a similar depth below any associated floodway and floodplain to the maximum extent of potential channel migration as determined by hydrologic analysis.

16D.06.19 Shore Stabilization (11) **Additional Shoreline Standards for Shore Stabilization** - The requirements below shall apply to all shore stabilization activities within Shoreline jurisdiction.

- a) Where feasible, dikes and levees shall be located outside of the floodway or channel migration zone of the river or stream in order to minimize any attendant increase in water stage and stream flow velocity over existing conditions.

16D.10.03 Shoreline Jurisdiction

Pursuant to the authority of RCW 90.58.030(2)(f) and WAC 173-22-040(2-3), the jurisdictional limits of the Shoreline Master program within Yakima County for areas that are subject to these regulations, are listed below. Yakima County has developed maps to generally depict the extent of Shoreline jurisdictional boundaries for all Shorelines within the county. These maps are for

informational and illustrative purposes only and are not regulatory in nature. Where such maps are not available or do not correspond with physical features on the ground, jurisdictional boundaries shall be controlled by the criteria listed below, WAC 173-22, and the Act itself. It is understood when the maps and the actual physical features do not correspond, the physical features will dictate the extent of the jurisdictional boundaries. It is understood that the actual physical features may change. The physical features will dictate the extent of the Shoreline jurisdictional boundaries. Shoreline jurisdictional area shall include:

- 1) Those Shoreline lakes, ponds and stream lengths identified in Appendix B and C of this title.
- 2) Subject to Subsection 7 below, wherever the "floodway" has been established by a flood insurance study prepared by the Federal Emergency Management Agency (FEMA), shorelines jurisdiction shall be the floodway plus 200 feet, measured on a horizontal plane, or the 100-year floodplain, whichever is lesser.
- 3) Subject to Subsection 7 below, whenever the 100-year floodplain has been identified by a flood insurance study prepared by the Federal Emergency Management Agency but where no "floodway" has been identified, shorelines jurisdiction shall be the 100-year floodplain boundary or 200 feet, measured in a horizontal plane, from the ordinary high water mark, whichever is greater.
- 4) Whenever there are no detailed floodplain or floodway studies, shoreline jurisdiction shall be 200 feet, measured on a horizontal plane, from the ordinary high water mark.
- 5) Where a **Channel Migration Zone** (CMZ) has been identified, and extends beyond the jurisdiction established by sub-section (2) above, jurisdiction shall extend to the extent of the CMZ, but not beyond the limits of sub-section (3).
- 6) Those wetlands and river deltas which are in proximity to and either influence or are influenced by the Shorelines. This influence includes, but is not limited to, one or more of the following: periodic inundation, location within a floodplain, or hydraulic continuity;
- 7) Under no circumstances shall shoreline jurisdiction be less than 200 feet, measured on a horizontal plane, from the ordinary high water mark of the Shoreline water body.

Comment [CC(1)]: Shoreline Jurisdiction

RCW 90.58.030(2) (f) "Shorelands" or "shoreland areas" means those lands extending landward for two hundred feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward two hundred feet from such floodways; and all wetlands and river deltas associated with the streams, lakes, and tidal waters which are subject to the provisions of this chapter; the same to be designated as to location by the department of ecology.

16D.10.04 Shoreline Environments

The following Shoreline Environments listed below are used as a system of categorizing shoreline areas according to management objectives and the character of the shoreline. The Shoreline Environments are based on the goals and policies found in the comprehensive plan (at the time of this update *Plan 2015 - Volume 1 - Natural Settings – NS 7 Shorelines, Goals NS 7.04 through 7.22*). Six (6) environments are hereby established, as listed below. The location and boundaries of the Shoreline Environments are hereby established, as provided in Appendix B and C. It is understood that the actual physical features may change. The physical features shall dictate the extent of the environmental boundaries. These changes are hereby incorporated by reference into this document so that the Environments described in Appendix C will shift with river changes. Shoreline Environments are shown on the map entitled "Shoreline Environment Map of Yakima County". This map is for informational and illustrative purposes only and is not regulatory in nature.

(6) **Floodway/Channel Migration Zone Environment** –This environment is characterized by deep/fast floodwaters and a shifting channel, and is the most hazardous Shoreline area. The Floodway/Channel Migration Zone environment should protect the water areas, islands and associated overflow channels found within designated floodways, and mapped

channel migration areas. This environment acknowledges the river's need to move within parts of its floodplain, and emphasizes the preservation of the natural hydraulic, geologic and biological functions of the county's shorelines that are constrained by severe biophysical limitations.

16D.10.05 Shoreline Land Use Table

Table 16D.10.05 lists the uses and activities for each Shoreline Environmental designation that are allowed by Substantial Development Permit and/or Conditional Use Permit, or are prohibited. Such uses shall be processed in accordance with chapter 16D.03 (Permit and Review Procedures). This table does not change those situations of when this title does not apply to a development (16D.01.05 Applicability), or when a use or activity listed as needing a Substantial Development permit may qualify for an exemption instead (16D.03.07 Exemptions). Definitions for some uses are provided in chapter 16D.02. The provisions in Table 16D.10.05 apply to specific common uses and types of development only to the extent they occur within shoreline jurisdiction. Symbols in the table have the following meanings:

- (S) means a Substantial Development Permit is required;
- (C) means a Conditional Use Permit is required;
- (X) means the use is prohibited;
- (N/A) means the entry is not applicable and the entry in the Activity column provides information to redirect the reader to another Activity.

See PDF Use Table 10-1 & Environment Designations

BLOGS/NEWS/ECT. Containing info regarding CMZ

- <http://earth.golder.com/waawra/PDF/2004-01-waarwranews.pdf>
- <http://community.pacificlegal.org/Page.aspx?pid=745>
- <http://seattle.craigslist.org/tac/reb/1341731449.html> - Packwood, WA 98361 \$ 79,900 (NWMLS #29110298) Beautiful wooded .68-acre lot within walking distance thru easement to private common area on Cowlitz River. Pending Channel Migration Zone regulations should have no effect on this property according to current county maps. Secluded but near town, only 25 minutes to White Pass Ski area. Lender financing available to qualified buyers.
- <http://www.peninsuladailynews.com/article/20090610/news/306109986>
- <http://lewiscountywa.gov/channel-migration-zone-cmz>
- http://www.perkinscoie.com/news/pubs_detail.aspx?publication=2043&op=updates
- <http://www.co.pierce.wa.us/xml/services/home/environ/water/cip/cmz/cmzcac/2009/CMZ-CACFAQs0409.pdf>
- http://www.olysteward.org/REPORT_10_CAORC_Crittenden_CMZ_Report_Recommendation_042607.pdf
- <http://www.ci.tukwila.wa.us/dcd/shoreline/comments/4-20-09/Exhibit-14.pdf>
-