AGENDA ITEM SUMMARY

(Must be submitted NLT 3PM Wednesday for next week agenda)

Department: Community Development (DCD)

WORK SESSION  ☒ Meeting Date: August 6, 2018

REGULAR AGENDA  ☐ Meeting Date:

Required Originals Approved and Attached?  ☒

Will be provided on:

Item Summary:*  ☐ Call for Hearing  ☐ Contract/Agreement/MOU**  ☐ Contract #
☐ Resolution  ☐ Proclamation  ☐ Budget Item
☐ Draft Ordinance  ☐ Final Ordinance  ☐ Other: Shoreline Master Program (SMP)

Update Work Session

Documents exempt from public disclosure attached:  ☐

Executive Summary: The County Planning Commission (PC) recommended a Shoreline Master Program (SMP) to the Board of County Commissioners to update and replace: (1) the existing 1976 SMP (last amended 1992) and (2) the SMP administrative procedures in Chapter 35.01, Shoreline Management, Clallam County Code (CCC) under Title 35 CCC, Shorelines. The PC’s recommendation is represented by the Draft SMP (September 2017). The Board held a public hearing on the PC’s recommended Draft SMP on December 12, 2017. The proposed Draft SMP (September 2017), supporting documents, existing 1976 SMP, and other information are available on the County’s SMP Update Webpage at: http://www.clallam.net/LandUse/SMP.html

Since the December 12 public hearing, the Board has held 10 work sessions on the Draft SMP and the public comments received. The upcoming work session will include review of Draft SMP Chapters 7 (Critical Areas within the Shoreline Jurisdiction) and 8 (Mitigation and No Net Loss) and related public comments received by the Board. Attached are two staff reports to assist in the review of public comments on Draft SMP Chapters 7 and 8.

Budgetary Impact: (Is there a monetary impact? If so, are funds for this already allocated or is a budget change necessary? If this is a contract and a budget change is necessary, the budget change form must be submitted with the item at work session and for the regular agenda)  If a budget Action is required, has it been submitted and a copy attached?  ☐

Not Applicable.

Recommended Action: (Does the Board need to act? If so, what is the department’s recommendation?)

Review the two attached staff reports addressing Draft SMP Chapters 7 and 8 and related public comments received by the Board. These staff reports include recommended amendments to the Draft SMP for Board consideration, and also highlight several “policy discussion areas” staff is seeking input from the Board on to determine if revisions should be made based on the comment received.

County Official Signature: ________________________________

Date Submitted: 8-1-18

* Submit original and 5 copies

** Submit 3 original and 5 copies

Questions? Call Loni Gores, Clerk of the Board, ext 2233

BOCCAgenda(8-6-18) Revised: 2013
Date:                July 19, 2018  
To:                  Board of Clallam County Commissioners 
From:                Steve Gray, Planning Manager  
Re:                  Public Comments on Draft SMP Chapter 7—Critical Areas within Shoreline Jurisdiction

The County Planning Commission (PC) recommended a Shoreline Master Program (SMP) to the Board of County Commissioners (BOCC) to update and replace: (1) the existing 1976 SMP (last amended 1992) and (2) the SMP administrative procedures in Chapter 35.01, Shoreline Management, Clallam County Code (CCC) under Title 35 CCC, Shorelines. The PC’s recommendation is represented by the Draft SMP (September 2017).

The BOCC held a public hearing on the PC’s recommended Draft SMP on December 12, 2017. Since the December 12 public hearing, the Board has held nine work sessions in 2018 on the Draft SMP (Sept. 2017) and public comments received.

This staff report summarizes and addresses public comments received on the Draft SMP (Sept. 2017) between September 20 thru December 12, 2017 (close of the public hearing on Draft SMP) that are specific to Draft SMP Chapter 7, Critical Areas within Shoreline Jurisdiction.

The Board held four previous work sessions with a focus on the requirements, background and rationale of the proposed shoreline and critical area buffers in the Draft SMP:

    November 13, 2017: Prior to the Board’s December 12, 2017 public hearing on the Draft SMP (Sept. 2017), staff held a work session with the Board on shoreline and critical area buffers as well as other provisions. The November 13, 2017 consultant and staff presentation for this work session is available can be viewed from the SMP Update Web Page under “SMP Presentations”.

    March 5, 2017: The Board’s March 5 work session focused on provisions related to shoreline and critical area buffers in terms of: (a) relationship of proposed Shoreline Environmental Designations (SED) and shoreline buffers; (b) science and other information that form basis of proposed buffers; (c) comparison of current versus proposed shoreline and critical area buffers; and (d) summary of range of public comments received on shoreline buffer widths. Included in the meeting packet and discussed at the work session was the December 11, 2012 Memorandum: Explanation of Proposed Shoreline Buffer Widths prepared by the County consultants that also included a review of the scientific literature. The March 5, 2017 staff presentation and the 2012 shoreline buffer memorandum are available under the “SMP Presentations” and “SMP Supporting Documents” links, respectively, on the SMP Update Web Page.

    April 2, 2017: The Board’s April 2 work session focused on continued discussion of proposed shoreline and critical area buffer requirements from the March 5 work session. The March 5, 2017 staff presentation, December 2012 Memorandum: Explanation of Proposed Shoreline Buffer Widths, and excerpts 2017 Final Cumulative Impacts Analysis and No Net Loss Report (CIA/NNL) for the Clallam County SMP related to buffers included in the meeting packet and are also available under the “SMP Presentations” and “SMP Supporting Documents” links, respectively, on the SMP Update Web Page.
July 16, 2018: At the July 16 SMP work session; the Board reviewed a staff report related to public comments on Draft SMP Chapter 6, Shoreline Buffers and Vegetation. The standard shoreline buffers proposed in Chapter 6 apply to the marine, river and lake reaches subject to the SMP and are measured from the ordinary high water mark (OHWM). Critical areas and associated buffers for wetlands, aquatic and wildlife conservation areas, and geologic hazard areas addressed in Draft SMP Chapter 7 may also be present on land located within the shoreline jurisdiction.

Chapter 7 of the Draft SMP is intended to address and comply with the State SMP Guidelines for critical areas under WAC 173-26-221 (2)(3)(5)—see attached Exhibit A.

Overview of Draft SMP Chapter 7

Draft SMP Chapter 7, Critical Areas within Shoreline Jurisdiction, contain the following 18 sections:

- Section 7.1 Applicability
- Section 7.2 General Policies for all Critical Areas
- Section 7.3 Regulations—General Regulations for all Critical Areas
- Section 7.4 Regulations—Wetland Designation, Delineation, Mapping, and Classification
- Section 7.5 Regulations—Wetland Buffers
- Section 7.6 Regulations—Wetland Protection Standards
- Section 7.7 Regulations—Aquatic Habitat Conservation Area Designations and Mapping
- Section 7.8 Regulations—Aquatic Habitat Conservation Area Buffers
- Section 7.9 Regulations— Aquatic Habitat Conservation Area Protection Standards
- Section 7.10 Regulations—Class I & II Terrestrial Habitat Conservation Areas Designation and Mapping
- Section 7.11 Regulations— Class I & II Terrestrial Habitat Conservation Areas Protection Standards
- Section 7.12 Regulations—Geologically Hazardous Areas Designation, Classification, and Mapping
- Section 7.13 Regulations—Geologically Hazardous Areas Buffers
- Section 7.14 Regulations—Geologically Hazardous Areas Protection Standards
- Section 7.15 Regulations—Frequently Flooded Area Designation and Mapping
- Section 7.16 Regulations—Frequently Flooded Area Protection Standards
- Section 7.17 Regulations—Critical Aquifer Recharge Areas Designation, Classification, and Mapping
- Section 7.18 Regulations— Critical Aquifer Recharge Areas Protection Standards

A summary of the above Chapter 7 sections and the related public comments received by the Board follows.

Draft SMP Section 7.1, Applicability

Draft SMP Chapter 7 contains policies and standards for the protection of critical areas located within the SMP jurisdiction. The shoreline jurisdiction extends to include all lands necessary for buffers to protect critical areas that are overlapping or otherwise coincident with the shoreline jurisdiction. Critical areas and buffers located within the shoreline jurisdiction will be regulated under the SMP. Conversely, critical areas and associated buffers located outside shoreline jurisdiction will be regulated by Chapter 27.12 CCC, Critical Areas Code following update of the SMP. See Draft SMP Section 1.8 for more information regarding shoreline jurisdiction.
Draft SMP Section 7.2, General Policies for all Critical Areas

This section contains proposed general policies for critical areas and buffers in the shoreline jurisdiction.

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<tr>
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<tr>
<td>7.2(2)</td>
<td>WDFW (B-4)</td>
<td>Comments that sub-parts &quot;F&quot; and &quot;h&quot; of Policy 7.2(2) will be important in balancing safety and protection of the developed environment with the maintenance of ecological processes.&quot;</td>
<td>Comment supports policy.</td>
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</table>

Draft SMP Section 7.3, Regulations—General Regulations for all Critical Areas

This section contains general regulations for all critical areas and buffers in the shoreline jurisdiction, as applicable, to new shoreline uses and development. These general standards address critical area mapping and designation, field identification, construction fencing, signs, and land divisions.

Draft SMP Section 7.4, Regulations—Wetland Designation, Delineation, Mapping, and Classification

This section contains regulations for wetland designation, delineation, mapping and classification. The proposed wetland delineation requirements are consistent with RCW 90.58.380 that is also used by state and federal agencies with jurisdiction over development and uses within wetlands. Consistent with WAC 173-26-221 (2) (i) (B), the proposed wetland classification and rating uses the Washington State Wetland Rating System for Western Washington (Ecology Publication No. 14-06-029, and revised editions).

County wetland maps are available to the public from the County’s on-line interactive web maps. These maps show the approximate location and extent of wetlands and are advisory. Definitive information about wetland size or presence requires a field inspection by a qualified professional. The County will update maps as new information from qualified sources becomes available. The on-line maps also are updated to show wetlands, or portions thereof, where recent on-site wetland delineation and classification studies have been completed.

Draft SMP Section 7.5 Regulations—Wetland Buffers

Proposed buffers for wetlands subject to the jurisdiction of the SMP are based on October 2014 Ecology Wetland Buffer Guidance for Western Washington to be used in conjunction with the Washington State Rating System for Western Washington (see also Draft SMP Section 7.4).

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<td>7.5</td>
<td>Quileute Tribe (A-1)</td>
<td>Supports proposed wetland buffer regulations as appropriately conforming with Department of Ecology guidance regarding vegetative buffers for wetlands.</td>
<td>Comment supports proposed wetland buffer regulations.</td>
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Draft SMP Section 7.6  Regulations—Wetland Protection Standards

This section contains regulations specific to wetlands that are in addition to the wetland buffer standards of Draft SMP Section 7.5.

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| 7.6(1)  | Futurewise, SCNOG, & WEC (C-2) | Recommend more specific avoidance criteria by revising 7.6(1) based on a modified version of model language prepared by the Washington State Department of Ecology as follows:  
   "New shoreline uses and developments shall be located, designed, constructed, and maintained to avoid wetland areas and their buffers. Impacts to wetlands and their buffers shall be prohibited except when all of the following conditions applicable requirements are met:  
   a. Category I Wetlands. Activities and uses shall be prohibited from Category I wetlands, except where existing public facilities must be expanded or extended into the wetland, or a utility must be located or expanded in a wetland because there is no other site that can serve the utility's function, or a reasonable use exception or variance allows the impact.  
   b. Category II and III Wetlands. For Category II and III wetlands, where wetland fill is proposed, it is presumed that an alternative development location exists: activities and uses shall be prohibited unless the applicant can demonstrate that:  
      i. The basic project purpose cannot be reasonably be accomplished on another site or sites in the general region while still successfully avoiding or resulting in less adverse impact on a wetland; and  
      ii. All on-site alternative designs that would avoid or result in less adverse impact on a wetland or its buffer, such as a reduction in the size, scope, configuration or density of the project, are not feasible.  
   c. Category IV Wetlands. Activities and uses that result in unavoidable impacts may be permitted in Category IV wetlands and associated buffers in accordance with an approved critical area(s) report and compensatory mitigation plan, and only if the proposed activity is the only reasonable alternative that will accomplish the applicant's objectives. Full compensation for the loss of acreage and functions of wetland and buffers shall be provided under the terms established in these regulations.  
   ad. The use or development is specifically allowed by this Program; and  
   be. All reasonable measures have been taken to avoid adverse impacts on wetland functions and values as demonstrated through a mitigation plan; and  
   cf. Compensatory mitigation for acreage and function is provided, in accordance with Section 8.3 through 8.4 of this Program, for all adverse impacts that cannot be avoided; and  
   dg. The amount and degree of alteration are limited to the minimum needed to accomplish the project purpose." | Support revision. These suggested edits are overall consistent with what wetland regulations are trying to protect, and provide more clarity as to intent of regulations based on wetland category. |

This regulation combined with other provisions in Sections 7.4-7.6 SMP and other applicable sections of SMP are designed as a whole to protect wetlands. Some uses may be supported such as a boardwalk through a wetland for public access and recreation that minimizes impacts to wetland environment. Other uses such as a public road corridor may result in unavoidable impacts to wetlands or buffers. Such impacts would need to be mitigated consistent with SMP Chapter 8, Mitigation and No Net Loss.

Draft SMP Section 7.7  Aquatic Habitat Conservation Area Designation and Mapping

This section classifies and designates aquatic habitat areas based on the water typing system in the forest practice rules in WAC 222-16. This classification system is used in state mapping to classify stream types into fish and non-fish bearing stream types. These areas also include aquatic habitats recognized by state and federal agencies for listed endangered, threatened and sensitive species.
Draft SMP Section 7.8  Regulations - Aquatic Habitat Conservation Area Buffers

This section contains the proposed standard buffer width and related standards for streams and aquatic areas and reaches “not classified” as shorelines of the state located within the shoreline jurisdiction. Standard buffer widths and related buffer standards for shorelines of the state are addressed in Draft SMP Chapter 6 and Table 6-1 of the SMP.

Draft SMP Section 7.9  Regulations – Aquatic Habitat Conservation Area Protection Standards

This section contains protection standards specific to aquatic areas that are in addition to the aquatic habitat buffer standards of Draft SMP Section 7.8.

Draft SMP Section 7.10  Regulations—Class I and II Terrestrial Habitat Conservation Areas Designation and Mapping

This section contains standards to classify and designate Class I and II Terrestrial Habitats. Terrestrial habitats means the subset of fish and wildlife habitat conservation areas that occur on land (i.e., landward of the ordinary high water mark) within the shoreline jurisdiction.

Draft SMP Section 7.11  Regulations—Class I and II Terrestrial Habitat Conservation Areas Protection Standards

This section contains the regulations pertaining to when new development and uses within areas designated as Class I and II Terrestrial Conservation Areas in Draft SMP Section 7.10 require a habitat management plan. These habitats are also protected based on the shoreline and critical area buffer requirements of SMP Chapters 6 and 7 and other applicable sections of SMP pertaining to the specific permitted development and uses.

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| 7.11(2)       | Futurewise, SCNOG, & WEC (C-2) | The SMP should better protect Class II Terrestrial Habitats. Regulation 7.11(2) indicates that whether Class II Terrestrial Habitats will be protected “shall be determined during the SEPA threshold determination on the project and/or by the Administrator.” The SMP update must require protection for all priority species and habitats no allow the Administrator to make a case-by-case call without any criteria. Related comments:  
  • "Critical saltwater habitats include *areas with which priority species have a primary association (WAC 73-26-221(2)(c)(ii)(A)). The shoreline master program defines Class II Terrestrial Habitats as species and habitats that are not the habitats of endangered, threatened, or sensitive species. These species meet the definition of critical saltwater habitats must be protected."  
  • "Some Class II Terrestrial Habitats also meet the definition of fish and wildlife conservation areas in WAC 365-190-130(2). The state SMP Guideline, in WAC 173-26-221(2)(a)(ii), adopt by reference "WAC 365-190-080 through 365-190-130..."  
  • "This is also necessary to comply with SMP Guidelines in WAC 173-26-221 (2)(a), that require....provide a level of protection to critical areas within the shoreline area that assures no net loss of shoreline ecological functions necessary to sustain shoreline natural resources." | These habitats are also intended to be protected based on the shoreline and critical area buffer requirements of SMP Chapters 6 and 7 and other applicable sections of SMP pertaining to the specific permitted development and uses in the shoreline. Associated critical saltwater habitats that occur on adjacent shorelands landward of the OHWM are designated as Class I Terrestrial. Recommend: Add under Section 7.7 to include critical freshwater habitats and critical saltwater habitats as part of the aquatic habitat conservation area designations. The terms critical freshwater and saltwater habitats are defined in Draft SMP Chapter 11, Definitions. |
**Draft SMP Section 7.12  Regulations—Geologically Hazardous Areas Designation, Classification, and Mapping**

This section contains the regulations for designating and classifying geologic hazard areas.

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<tr>
<td>7.12</td>
<td>WDFW (B-4)</td>
<td>In regards to Section 7.12, Regulations – Geologically Hazardous Areas Designation, Classification, and Mapping, WDFW comments: &quot;It appears that channel migration zones are included in the Classification for both Erosion Hazard Areas and Landslide Hazard Areas. This results in some confusion in reading the draft.&quot;</td>
<td>The classification and designation of channel migration zone (CMZ) in both landslide and erosion hazard is appropriate. Areas subject to channel migration are by nature an erosion hazard. Where channel migration undercuts steep banks or slopes they can trigger landslides.</td>
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<td>Pg.7-17 to 7-19</td>
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<td>Comments include several pages of comments/questions related to Washington State Department of Ecology Channel Migration Zone (CZM) Reports and related mapping.</td>
<td>Policy Discussion Area: The County could place channel migration zones in its own geologic hazardous area classification.</td>
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| 7.12 (2g) | Bowen (E-1a) | Ecology’s CMZ Report is reflected on the title page as “Draft.” This has been explained to me as subject to some form of finalization by Ecology. I understand the county staff was afforded the opportunity to comment on the report but lacked capacity to do so (and historically did not do so, apparently taking it at face value). I also understand that Ecology most likely will not include this Report in their “published report library, therefore for the purpose of supporting the plan it is essential the actual report and it’s finalization process be directly documented (archived as an attachment) in the plan (not as a “link” but just as the SEPA, Restoration Plan, and other documents are included). In addition, it is also understood this report will be “finalized” in the near term yet to be determined……I am left when that occur (not by the time of this public hearing is held) and therefore even more so the question of its legitimacy in being relied upon to set new restrictions on private property…." | Ecology’s April 23, 2018, letter (see above) also included submission of three final channel migration assessment (CMA) reports for the earlier draft December 2011 and April 2013 Draft reports for WRIA 18-19 and WRIA 20, respectively:  
- Clallam County Channel Migration Assessment: Puget Sound WRIA's 18-19 (April 2018).  
- Revised CMZ Boundaries for Lower Morse Creek, Clallam County (January 2013)  
- Clallam County Channel Migration Assessment: Pacific WRIA 20 (April 2018)  
As noted in Ecology's letter, the above final CMA Reports included only minimal changes that address minor errors, typos, and clarifications (i.e., no additional technical analysis).  
Recommendation: Adopt by reference Ecology’s three, Final CMA Reports as part of findings of any County Commissioner action (i.e., Resolution) to locally-approve an updated SMP. |
| Pg.7-18  | | Recommends the SMP "be edited to reflect that all streams that were not specifically a function of the model using the primary data source and supported by other viable data sources are limited in scope for those delineations and are “advisory only for those changes that "exceed" the current county designations.”  
"If my government does not see fit to make this edit, or something similar regarding “advisory” as used in regards to Tsunami zoning, then at a minimum the | At the April 23, 2018 work session, the Commissioners reviewed a staff report (dated April 18, 2018) that included proposed revisions to Draft CMZ standards in Section 7.14.10 of the Draft SMP to incorporate a 3-step CMZ assessment review process. These draft revisions were generally supported by the Commissioners at that time. These draft revisions are |
need for language is essential to identify and address the burden on the landowner (the "Onerous" concept used by the DCD director on several occasions with the public and also before the BOCC, resulting in a taking in the form of a burden to limit the landowner they must determine essentially a proportionate measure of mitigation) along with the application of such burden (specifying what that is, but this piece might not be needed if the language is there, just at this point in the process I don’t have readily available/known) and allowed exceptions. Otherwise it is my opinion well-crosses the line in being respectful of due process and being subject to an uncompensated taking of property."

attached as Exhibit B to this staff report

The Commissioners had also previously directed removal of the mapped potential CMZ on the Draft Shoreline Environmental Designation (SED) maps in Exhibit A of the Draft SMP. The potential CMZ boundaries would still be included as part of other County map layers available to the public consistent with Section 1.8.(3) of the Draft SMP.

**7.12.(4) Policy Discussion Area**

**7.12.(4) Pg. 7-19**

Futurewise, SCNOG, & WEC (C-2)

We support the designation of tsunami inundation zones as geological hazards. They have very serious risk of harm to people and property.

As proposed 7.12.(4), recognizes tsunami hazard areas are a type of critical areas. But proposed 7.12.(4) does not designate any tsunami hazard areas even though they are identified in the 2010 Hazard Mitigation Plan by Clallam County.

Recommend: That tsunami hazard areas mapped by the State of Washington or Clallam County be designated as seismic hazard area.

**Support the recommended amendments requested.**

**7.12.(4) Pg. 7-19**

Futurewise, SCNOG, & WEC (C-2)

Incorporate as part of classification and designation of seismic hazard areas the 2004 Liquefaction Susceptibility Map and 2004 Site Class Map for Clallam County prepared by the Washington State Department of Natural Resources. Liquefaction occurs when earthquake shaking causes a soil to rapidly lose its strength and behave like quicksand. These maps represent the best science and technical information on the occurrence of these hazards. Adopting these maps and protective provisions for these areas will protect people and property from hazards resulting from earthquakes.

Based on the 2004 Map, recommend:

- Designate areas classified as having a liquefaction susceptibility of "moderate," "moderate to high," "high" and "peat deposit as geological hazards.
- Designate areas classified as having a site class of "D," "D to E," and "F" as geological hazards. These areas are where the underlying geology is likely to amplify shaking on the ground surface.

**Other**

Futurewise, SCNOG, & WEC (C-2)

Landslides are capable of damaging commercial, residential, or industrial development at both the tops and toes slopes due to the earth sliding and other geological events. So the areas at the top, toe, and sides of the slope are geological hazards. We recommend these areas be designated as landslide hazard areas.

Concur that landslide hazard areas include areas at the top, toe, and sides of slopes designated as hazards. This would appear to be addressed based on that the SMP’s proposed standard landslide hazard area buffers are measured from the top, toe and all edges per Section 7.13.(1).

Future studies specific to a location that document a larger area than standard buffers from top, toe or sides of a landslide hazard area for a particular location could be considered and adopted by reference as designated landslide hazard areas.
Draft SMP Section 7.13  Regulations—Geologically Hazardous Area Buffers

This section contains the proposed standard buffers for landslide hazard areas. Proposed marine bluff feeder buffers are based on the shoreline inventory and characterization report and related consultant recommendations. The large feeder bluff buffers proposed are also supported by local scientific studies including:


Proposed required buffers for channel migration zones are addressed in Draft SMP Section 7.14.(10), as further revised based on prior Board work session discussion at the April 23, 2018 (see attached Exhibit B).

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<tr>
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<tr>
<td>Jamestown S’Klallam Tribe (A-2a)</td>
<td>For feeder bluff marine shorelines, support the below buffer provisions with the goal to provide for the essential, long-term supply of sediment to beaches, spits, and other important shoreforms, and ensure human development is kept out of harm’s way.</td>
<td>Proposed feeder bluff buffers are intended to meet these goals. Recommend add to Section 7.2, Critical Area Policies: Protect feeder bluffs ability to provide for essential, long-term supply of sediment to beaches, spits, nearshore habitats, and other important shoreforms.</td>
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<td>Futurewise, SCN OG, &amp; WEC (C-2)</td>
<td>The Shoreline Master Program Guidelines, in WAC 173-26-221 (2)(c)(ii)(B), provide: “Do not allow new development or the creation of new lots that would cause foreseeable risk from geological conditions to people or improvements during the life of the development.”. Lots are permanent and homes are often occupied for more than 100 years. Also, refers to a recent paper that in Clallam County “analysis with a simple bluff erosion model suggests that predicted rates of sea-level</td>
<td>No change needed. Draft Section 7.13.(1) states that new uses and developments shall maintain minimum buffers from the top, toe, and all edges of landslide hazard areas (includes feeder bluffs).</td>
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<td>No change needed. The Draft SMP (see Tables 6-2 and 7-7) support standard buffers for non-exceptional feeder bluffs of 100-feet.</td>
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<td>No change needed. Current Draft SMP (see Tables 6-2 and 7-7 support standard buffers for exceptional feeder bluffs of 150-feet.</td>
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<td>Recommend add this provision to SMP buffer standards for feeder bluffs. See related response in this Staff Report pertaining to SMP Section 7.13.(7) that contains criteria for increasing buffer widths related to feeder bluffs.</td>
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Policy discussion area. Not all marine bluffs are subject to same erosion and bluff regression rates due to geology, landscape position (e.g., wave action), height, and other factors.
| **D-1 thru D-9** | Apply the 150-foot Marine Bluff – Feeder Bluff Exceptional buffer to all marine bluffs as marine bluff erosion is likely to increase with rising sea levels and increasing wave heights. Adopt site specific buffers for landslide hazards and other measures to protect people and property from landslide hazards. | See above response. |
| **Futurewise, SCNOG, & WEC (C-2)** | Concerned that the 50-foot buffer width for other landslide hazards is not adequate to protect people and property. Landslides can impact development at long distances. Recommend: That regulations require the site-specific identification of landslide top of slope and slope faces subject to failure and sliding, toe of slope areas subject to impact from down slope run-out, and buffers for areas subject to landslide hazards. The Joint SR 530 Landslide Commission recommends identifying “critical area buffer widths based on site specific geotechnical studies” as an innovative development regulation” that counties and cities should adopt. Construction should not be allowed in these areas. | **Policy discussion area.** The consultants focused on mapping and classifying marine bluff types, and recommended associated buffers. The 50-foot buffer recommended for landslide hazards that are not feeder bluffs is the current critical area code standard. Landslide hazard buffers can be increased under the critical area code adjacent to a bluff or ravine which is severely unstable based on recent geotechnical events. The County may want to consider a geotechnical report analysis. |
| **OEC & FMPSP (C-3a); PPF (C-6)** | Commented that the proposed 50-feet landslide hazard buffer in Table 7-7 is too shallow. This is not protection over a 75 yr. period as required—25 years, if lucky. Variances should not be given in such areas. These may not be buildable areas. | See above response. |
| **Futurewise, SCNOG, & WEC (C-2)** | Support Regulation 7.14.7(a) (1) requirement that a geotechnical report contain a site plans to identify “the type and extent of geologic hazard areas, any other critical areas, and buffers on, adjacent to, or that are likely to impact or influence the proposal or be influenced by the proposal, including properties and critical areas upslope and downslope of the subject site.” This is important because landslide hazards are capable of damaging property at significant distances. The 2014 Oso slide ran out for over a mile (5,500 feet) even though the slope height was 600 feet……In a study of shallow landslides along Puget Sound from Seattle to Everett, the average runout length was 197.5 feet and the maximum runout length was 771 feet.” Recommend: Regulations require site-specific geotechnical studies to identify landslide top of slope and slope faces subject to failure and slide, toe of slope areas subject to impact from down slope run-out, and identifying buffers needed to protect development form these hazards. | **Policy discussion area.** |
| **WDFW (B-4)** | In regards to Section 7.13.(1) buffer provisions for landslide hazard area (non-channel migration zones), WDFW comments: “Under 7.13 Regulations, channel migration zones (CMZs) are excluded and the regulation provides no direction pertaining to CMZs.....” | Recommend adding a footnote to Table 7-7 to Section 7.14.(10) requirements for channel migration zones. |
Buffer Averaging Comments

7.13.(4) Pg. 7-20
OEC & FMPSP (C-3a); PPF (C-6)

Buffer averaging is not a good idea for new development or totally rebuilt sites. (For guidance, see the scientific analysis just completed by Dave Parks of the WA State Department of Natural Resources. *Bluff Recession in the Elwha and Dungeness Littoral Cells, Washington, USA. Environmental & Engineering Geoscience, Vol. XXI, No. 1, January 2015,* and *Mapping and Monitoring Bluff Erosion with Boat-based LIDAR and the Development of a Sediment Budget and Erosion Model for the Elwha and Dungeness Littoral Cells, Clallam County, WA.*)

Where properties are too small for a home site with safe setbacks for an estimated 75 year period, perhaps a small vacation structure or a greenhouse could be allowed. Without doubt, for the protection of property owners, natural resources, and County residents that could be sued, the County should disallow properties being built where it is perceived these properties would put property owners in harms way. If these properties are platted or built upon, the County should instruct property owners to move their structures back in order to not be washed away or fall over a bluff. The County could additionally consider ways to assist property owners, if need be, such as setting up a fund to assist lower income property owners with relocating their structures and, in some cases, purchasing properties at a modest price. These properties could not be resold by the property owners so this would be a win-win for all. This would protect the County and taxpayers against law suits from having let these properties be built on and later learning the house and lives are threatened.

Policy discussion area.

Comments on SMP 7.13.(7), Increasing Buffer Widths (Feeder Bluff—Exceptional) Standards,

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<td>Jamestown S'Klallam (A-2a)</td>
<td>Recommend that standard buffers be increased where documented bluff retreat rates equal or exceed one-foot per year on non-exceptional feeder bluffs and 1.5-feet per year on exceptional feeder bluffs. In these cases, buffers shall be increased to a minimum width equaling 100 years of the documented bluff retreat rate. The goal of this recommendation is to: 1) provide for the essential, long-term supply of sediment to beaches, spits, and other important shoreforms, and 2) ensure human development is kept out of harm’s way.</td>
<td>Policy discussion area. Support revision. The proposed 100 and 150 foot buffers for feeder bluffs are intended to provide for typical 75 to 100-year lifespan based on average bluff regression. There is a bluff regression model and data bluffs associated with the Elwha and Dungeness Drift Cells. Information on bluff regression from future reach or site specific studies may find some portions of bluff eroding faster where a 100 or 150 buffers may not provide sufficient protection for typical 75 to 100 year lifespan of a home or structure. Adding this standard will also provide a bluff retreat standard to assist in determining when increased buffers are needed under Section 7.13.(7) for Feeder Bluff-Exceptional.</td>
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Draft SMP Section 7.14  Regulations—Geologically Hazardous Area Protection Standards

This section contains protection standards specific to geologic hazardous areas that are in addition to the landslide buffer standards of Draft SMP Section 7.13.

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| 7.14.(2) Pg. 7-21 | OEC & FMSP (C-3a); PPF (C-6) | Commented that if the County signs off on the below regulation and there is an accident, the County—meaning the citizens of the County — are liable. Any property owner that accepts this option should waive his/her right to sue the County.  

"New uses and developments may be allowed in geologically hazardous areas and/or their buffers only when specifically allowed by this Program and when all reasonable measures have been taken to avoid adverse impacts on slope stability and protect human health and safety."

| 7.14.7(a) (i) | Futurewise, SCNOG, & WEC (C-2) | Supports Regulation 7.14.7(a) (i) requirement that a geotechnical report contain a site plans to identify "the type and extent of geologic hazard areas, any other critical areas, and buffers on, adjacent to, or that are likely to impact or influence the proposal or be influenced by the proposal, including properties and critical areas upslope and downslope of the subject site." This is important because landslide hazards are capable of damaging property at significant distances. The 2014 Oso slide ran out for over a mile (5,500 feet) even through the slope height was 600 feet......In a study of shallow landslides along Puget Sound from Seattle to Everett, the average runout length was 197.5 feet and the maximum runout length was 771 feet.  

Recommend: Regulations require site-specific geotechnical studies to identify landslide top of slope and slope faces subject to failure and slide, toe of slope areas subject to impact from down slope run-out, and identifying buffers needed to protect development form these hazards. | Policy discussion area. |
| 7.14.(8) Pg. 7-24 | WDFW (B-4) | In regards to Section 7.14.(8) provisions WDFW comments: "7.14 Regulations – appears to provide great latitude to the administrator to impose conditions in geologically hazardous areas. It may provide more direct protection of ecological processes and public safety, provide more regulatory certainty and reduce work for the administrator, to formulate more direct regulatory requirements. Because by definition the CMZ is an area where the channel may locate in the future, it is important to provide a buffer on CMZ and avoid a future channel location that is without a vegetative buffer." | Recommend update to require any Administrator conditions be based on based on the recommendations of a geotechnical report. |
| 7.14.(10) Pg. 7-24 | WDFW (B-4) | Related to Section 7.14(10), Channel Migration Zone (CMZ) Protection Standards, comments:  

- Under SMP Section 7.13, Geologic Hazardous Area Buffers, channel migration zone buffers are not addressed.  

- In regards to sub-part "10a" below, comments: "Where is the already included buffer indicated in the draft SMP? We were unable to locate it and again this language is confusing. What does the already included buffer consist of?  

"......a. Locate the proposal landward of the potential channel migration hazard area as indicated on the map which already includes an erosion hazard buffer; or......" | See below comment.  

Ecology mapping of the potential channel migration zone (CMZ) includes an erosion hazard buffer that includes 1 channel width for entrenched streams, 50% to 100% of the width of the meander amplitude, and other factors. |
In regards to sub-part "10c" below, comments: "Again under (c), the administrator has latitude to restrict development based on the CMZ assessment as opposed to including in the SMP, direct regulations of the CMZ. We recommend a more explicit regulation that excludes new development in the CMZ and provides a vegetative buffer starting at the edge of the CMZ."

"...c. Based on the results of the channel migration zone assessment, the Administrator may prohibit or limit use or development within a channel migration zone area and/or require a buffer of undisturbed natural vegetation from the edge of the channel migration zone to retain both a safety and habitat buffer and when the channel migrates to the channel migration zone edge."

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### Other Comments Related to Safety Zones

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<td>Jamestown S'Klallam Tribe (A-2a)</td>
<td>Establish safety zones that cover all areas located within 1-meter vertical elevation (NAVD 88 Datum) above ordinary high water on FEMA coastal flooding and marine tsunami zones. For delineating safety zones, measurements should be taken from native ground elevations. Placing fill within a safety zone would not remove the filled area from the safety zone. Construction of residential and commercial structures should be prohibited inside these zones. This is a very modest standard to prevent construction of house and other buildings that would be certain to be flooded from storm surge in the next several decades. The presence of structures within these dangerous areas would engender expensive and harmful protective measures and ultimately place people and property in harm’s way.</td>
<td>Policy discussion area.</td>
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| Futurewise, SCNOG, & WEC (C-2) | Tsunamis are a significant risk in Clallam County. The Clallam Bay-Sekiu and Dungeness River areas of the County are not incorporated, but have higher population densities than other unincorporated areas of the County, and are located in areas susceptible to flooding, tsunamis, landslide/erosion and severe storms. Critical facilities are located in these areas including bridges, a prison and sheriff’s offices in Clallam Bay-Sekiu, and water reservoir and fire station in the Dungeness River area. References the 2010 Hazard Mitigation Plan for Clallam County. We support the designation of tsunami inundation zones as geological hazards. They have very serious risk of harm to people and property. However, we did not find any standards that apply to tsunami hazard areas. Recommend the following standards:

- Avoid new development in tsunami hazard areas. Where a site is large enough to develop outside of a tsunami hazard, development within the tsunami hazard should be prohibited. Prohibiting development in tsunami hazard areas is the safest approach.
- If a part of the site has a lower tsunami risk, development should be clustered on that part of the site.
- Where tsunami hazard areas are outside cities and limited areas of more intense rural development, zone them for low density uses such as one dwelling unit per 10 acres.
- Where developments are allowed in tsunami hazard areas, require an evaluation to determine if a tsunami resistant structure can be required to allow residents, customers, and employees to shelter in place.
- Locate and configure new development that occurs in tsunami run-up areas to minimize tsunami losses.
- At a minimum, require that subdivisions, commercial, and recreational uses to prepare and maintain an evacuation plan including evacuation routes and provide for warnings and training for employees, residents, and those who will use the development on when and how to evacuate. These evacuation plans should be reviewed by the county for effectiveness and consistency with the community evacuation plans. | Policy discussion area. |
Draft SMP Sections 7.15 and 7.16—Regarding Floodplain Designation, Mapping and Protection Standards

These sections adopt the Federal Emergency Management Agency (FEMA) maps and establishes regulations based on these maps. FEMA is in the process of updating the floodplain maps for Clallam County.

Draft SMP Sections 7.17 and 7.18, Critical Aquifer Recharge Areas (CARA) Designation, Mapping, and Classification, and CARA Protection Standards

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| 7.17    | Futurewise, SCNOG, & WEC (C-2) | "The State of Washington Department of Ecology has identified the potential for salt water intrusion along the entire Strait of Juan de Fuca in Clallam County. The SMP Update includes critical areas regulations for aquifer recharge areas. These critical area regulations must provide a level of protection to critical areas within the shoreline area that assures no net loss of shoreline ecological functions necessary to sustain shoreline natural resources. WAC 173-26-221(2)(a)(ii). In addition, the regulatory provisions for critical areas shall protect existing ecological functions and ecosystem-wide processes. WAC 173-26-221(2)(b)(iv). The proposed critical area regulations fail to comply with these requirements because they do not protect drinking water sources on which many county residents and businesses depend from salt water intrusion. ..... The Growth Management Hearings Board has held that Growth Management Act requires counties to designate vulnerable seawater intrusion areas as critical aquifer recharge areas. The Board also held that counties must adopt development regulations to protect aquifers used for potable water from further seawater degradation." Recommend:  
- County designate the areas mapped by Ecology as susceptible to salt water intrusion as having a high susceptibility to contamination. | Policy discussion area. |
| 7.18    | Pg. 7-28  | See related comment above. Also recommend:  
| Regulati 7.18.(4) | OEC & FMSP (C-3a); PPF (C-6) | Commented that "...cides" of any kind noted in the below regulation should be disallowed in critical aquifer recharge areas on any size acreage. Also, request amend as follows:  
"The use of fertilizers, herbicides, pesticides or other chemicals for vegetation management within critical aquifer recharge areas shall adhere to best management practices best available science to prevent impacts to water quality and water supply. Where the application of such chemicals covers five (5) or more acres, a mitigation plan shall be required pursuant to Section 8.3 of this Program." | No change recommended. |
EXHIBIT A

Excerpt from Washington State Shoreline Master Program Guidelines Related to Critical areas Pursuant to WAC 173-22-221 (2) (3) (5)

WAC 173-26-221

General master program provisions.

"The provisions of this section shall be applied either generally to all shoreline areas or to shoreline areas that meet the specified criteria of the provision without regard to environment designation. These provisions address certain elements as required by RCW 90.58.100(2) and implement the principles as established in WAC 173-26-186."

(2) Critical areas.

(a) Applicability. Pursuant to the provisions of RCW 90.58.090(4) and 36.70A.480(3) as amended by chapter 107, Laws of 2010 (EHB 1653), shoreline master programs must provide for management of critical areas designated as such pursuant to RCW 36.70A.170 (1)(d) located within the shorelines of the state with policies and regulations that:

(i) Are consistent with the specific provisions of this subsection (2) critical areas and subsection (3) of this section flood hazard reduction, and these guidelines; and

(ii) Provide a level of protection to critical areas within the shoreline area that assures no net loss of shoreline ecological functions necessary to sustain shoreline natural resources.

The provisions of this section and subsection (3) of this section, flood hazard reduction, shall be applied to critical areas within the shorelines of the state. RCW 36.70A.030 defines critical areas as:

"Critical areas" include the following areas and ecosystems:

(a) Wetlands; (b) areas with a critical recharging effect on aquifers used for potable waters; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas."

The provisions of WAC 365-190-080 through 365-190-130, to the extent standards for certain types of critical areas are not provided by this section and subsection (3) of this section flood hazard reduction, and to the extent consistent with these guidelines are also applicable to and provide further definition of critical area categories and management policies.

As provided in RCW 90.58.030 (2)(f)(ii) and 36.70A.480, as amended by chapter 321, Laws of 2003 (ESHB 1933), any city or county may also include in its master program land necessary for buffers for critical areas, as defined in chapter 36.70A RCW, that occur within shorelines of the state, provided that forest practices regulated under chapter 76.09 RCW, except conversions to nonforest land use, on lands subject to the provision of WAC 173-26-241 (3)(e) are not subject to additional regulations. If a local government does not include land necessary for buffers for critical areas that occur within shorelines of the state, as authorized above, then the local jurisdiction shall continue to regulate those critical areas and required buffers pursuant to RCW 36.70A.060(2).

In addition to critical areas defined under chapter 36.70A RCW and critical saltwater and freshwater habitats as described in these guidelines, local governments should identify additional shoreline areas that warrant special protection necessary to achieve no net loss of ecological functions.

(b) Principles. Local master programs, when addressing critical areas, shall implement the following principles:

(i) Shoreline master programs shall adhere to the standards established in the following sections, unless it is demonstrated through scientific and technical information as provided in RCW
and as described in WAC 173-26-201 (2)(a) that an alternative approach provides better resource protection.

(ii) In addressing issues related to critical areas, use scientific and technical information, as described in WAC 173-26-201 (2)(a). The role of ecology in reviewing master program provisions for critical areas in shorelines of the state will be based on the Shoreline Management Act and these guidelines.

(iii) In protecting and restoring critical areas within shoreline jurisdiction, integrate the full spectrum of planning and regulatory measures, including the comprehensive plan, interlocal watershed plans, local development regulations, and state, tribal, and federal programs.

(iv) The planning objectives of shoreline management provisions for critical areas shall be the protection of existing ecological functions and ecosystem-wide processes and restoration of degraded ecological functions and ecosystem-wide processes. The regulatory provisions for critical areas shall protect existing ecological functions and ecosystem-wide processes.

(v) Promote human uses and values that are compatible with the other objectives of this section, such as public access and aesthetic values, provided that impacts to ecological functions are first avoided, and any unavoidable impacts are mitigated.

(c) Standards. When preparing master program provisions for critical areas, local governments should implement the following standards and use scientific and technical information, as provided for in WAC 173-26-201 (2)(a).

Provisions for frequently flooded areas are included in WAC 173-26-221(3).

(i) Wetlands.

(A) Wetland use regulations. Local governments should consult the department's technical guidance documents on wetlands.

Regulations shall address the following uses to achieve, at a minimum, no net loss of wetland area and functions, including lost time when the wetland does not perform the function:

- The removal, excavation, grading, or dredging of soil, sand, gravel, minerals, organic matter, or material of any kind;
- The dumping, discharging, or filling with any material, including discharges of stormwater and domestic, commercial, or industrial wastewater;
- The draining, flooding, or disturbing of the water level, duration of inundation, or water table;
- The driving of pilings;
- The placing of obstructions;
- The construction, reconstruction, demolition, or expansion of any structure;
- Significant vegetation removal, provided that these activities are not part of a forest practice governed under chapter 76.09 RCW and its rules;
- Other uses or development that results in an ecological impact to the physical, chemical, or biological characteristics of wetlands; or
- Activities reducing the functions of buffers described in (c)(i)(D) of this subsection.

(B) Wetland rating or categorization. Wetlands shall be categorized based on the rarity, irreplaceability, or sensitivity to disturbance of a wetland and the functions the wetland provides. Local governments should either use the Washington state wetland rating system, Eastern or Western Washington version as appropriate, or they should develop their own, regionally specific, scientifically based method for categorizing wetlands. Wetlands should be categorized to reflect differences in wetland quality and function in order to tailor protection standards appropriately. A wetland categorization method is not a substitute for a function assessment method, where detailed information on wetland functions is needed.

(C) Alterations to wetlands. Master program provisions addressing alterations to wetlands shall be consistent with the policy of no net loss of wetland area and functions, wetland rating, scientific and technical information, and the mitigation priority sequence defined in WAC 173-26-201 (2)(e).

(D) Buffers. Master programs shall contain requirements for buffer zones around wetlands. Buffer requirements shall be adequate to ensure that wetland functions are protected and maintained in the long term. Requirements for buffer zone widths and management shall take into account the
ecological functions of the wetland, the characteristics and setting of the buffer, the potential impacts associated with the adjacent land use, and other relevant factors.

(E) **Mitigation.** Master programs shall contain wetland mitigation requirements that are consistent with WAC 173-26-201 (2)(e) and which are based on the wetland rating.

(F) **Compensatory mitigation.** Compensatory mitigation shall be allowed only after mitigation sequencing is applied and higher priority means of mitigation are determined to be infeasible.

Requirements for compensatory mitigation must include provisions for:

- Mitigation replacement ratios or a similar method of addressing the following:
  - The risk of failure of the compensatory mitigation action;
  - The length of time it will take the compensatory mitigation action to adequately replace the impacted wetland functions and values;
  - The gain or loss of the type, quality, and quantity of the ecological functions of the compensation wetland as compared with the impacted wetland.

- Establishment of performance standards for evaluating the success of compensatory mitigation actions;
- Establishment of long-term monitoring and reporting procedures to determine if performance standards are met; and
- Establishment of long-term protection and management of compensatory mitigation sites. Credits from a certified mitigation bank may be used to compensate for unavoidable impacts.

(ii) **Geologically hazardous areas.** Development in designated geologically hazardous areas shall be regulated in accordance with the following:

- Consult designation criteria for geologically hazardous areas, WAC 365-190-120.
- Do not allow new development or the creation of new lots that would cause foreseeable risk from geological conditions to people or improvements during the life of the development.
- Do not allow new development that would require structural shoreline stabilization over the life of the development. Exceptions may be made for the limited instances where stabilization is necessary to protect allowed uses where no alternative locations are available and no net loss of ecological functions will result. The stabilization measures shall conform to WAC 173-26-231.
- Where no alternatives, including relocation or reconstruction of existing structures, are found to be feasible, and less expensive than the proposed stabilization measure, stabilization structures or measures to protect existing primary residential structures may be allowed in strict conformance with WAC 173-26-231 requirements and then only if no net loss of ecological functions will result.

(iii) **Critical saltwater habitats.**

- **Applicability.** Critical saltwater habitats include all kelp beds, eelgrass beds, spawning and holding areas for forage fish, such as herring, smelt and sand lance; subsistence, commercial and recreational shellfish beds; mudflats, intertidal habitats with vascular plants, and areas with which priority species have a primary association. Critical saltwater habitats require a higher level of protection due to the important ecological functions they provide. Ecological functions of marine shorelands can affect the viability of critical saltwater habitats. Therefore, effective protection and restoration of critical saltwater habitats should integrate management of shorelands as well as submerged areas.

- **Principles.** Master programs shall include policies and regulations to protect critical saltwater habitats and should implement planning policies and programs to restore such habitats. The inclusion of commercial aquaculture in the critical saltwater habitat definition does not limit its regulation as a use. Reserving shoreline areas for protecting and restoring ecological functions should be done prior to reserving shoreline areas for uses described in WAC 173-26-201 (2)(d)(i) through (v). Planning for critical saltwater habitats shall incorporate the participation of state resource agencies to assure consistency with other legislatively created programs in addition to local and regional government entities with an interest such as port districts. Affected Indian tribes shall also be consulted. Local governments should review relevant comprehensive management plan policies and development regulations for shorelands and adjacent lands to achieve consistency as directed in RCW 90.58.340. Local governments should base management planning on information provided by
state resource agencies and affected Indian tribes unless they demonstrate that they possess more accurate and reliable information.

The management planning should include an evaluation of current data and trends regarding the following:

- Available inventory and collection of necessary data regarding physical characteristics of the habitat, including upland conditions, and any information on species population trends;
- Terrestrial and aquatic vegetation;
- The level of human activity in such areas, including the presence of roads and level of recreational types (passive or active recreation may be appropriate for certain areas and habitats);
- Restoration potential;
- Tributaries and small streams flowing into marine waters;
- Dock and bulkhead construction, including an inventory of bulkheads serving no protective purpose;
- Conditions and ecological functions in the near-shore area;
- Uses surrounding the critical saltwater habitat areas that may negatively impact those areas, including permanent or occasional upland, beach, or over-water uses; and
- An analysis of what data gaps exist and a strategy for gaining this information.

The management planning should address the following, where applicable:

- Protecting a system of fish and wildlife habitats with connections between larger habitat blocks and open spaces and restoring such habitats and connections where they are degraded;
- Protecting existing and restoring degraded riparian and estuarine ecosystems, especially salt marsh habitats;
- Establishing adequate buffer zones around these areas to separate incompatible uses from the habitat areas;
- Protecting existing and restoring degraded near-shore habitat;
- Protecting existing and restoring degraded or lost salmonid, shorebird, waterfowl, or marine mammal habitat;
- Protecting existing and restoring degraded upland ecological functions important to critical saltwater habitats, including riparian and associated upland native plant communities;
- Improving water quality;
- Protecting existing and restoring degraded sediment inflow and transport regimes; and
- Correcting activities that cause excessive sediment input where human activity has led to mass wasting.

Local governments, in conjunction with state resource agencies and affected Indian tribes, should classify critical saltwater habitats and protect and restore seasonal ranges and habitat elements with which federal-listed and state-listed endangered, threatened, and priority species have a primary association and which, if altered, may reduce the likelihood that a species will maintain its population and reproduce over the long term.

Local governments, in conjunction with state resource agencies and affected Indian tribes, should determine which habitats and species are of local importance.

Local governments shall protect kelp and eelgrass beds, forage fish spawning and holding areas, and priority species habitat identified by the department of natural resources’ aquatic resources division, the department of fish and wildlife, the department, and affected Indian tribes as critical saltwater habitats.

Comprehensive saltwater habitat management planning should identify methods for monitoring conditions and adapting management practices to new information.

(C) **Standards.** Docks, piers, bulkheads, bridges, fill, floats, jetties, utility crossings, and other human-made structures shall not intrude into or over critical saltwater habitats except when all of the conditions below are met:

- The public's need for such an action or structure is clearly demonstrated and the proposal is consistent with protection of the public trust, as embodied in RCW 90.58.020;
- Avoidance of impacts to critical saltwater habitats by an alternative alignment or location is not feasible or would result in unreasonable and disproportionate cost to accomplish the same general purpose;
• The project including any required mitigation, will result in no net loss of ecological functions associated with critical saltwater habitat.

• The project is consistent with the state's interest in resource protection and species recovery. Private, noncommercial docks for individual residential or community use may be authorized provided that:

  • Avoidance of impacts to critical saltwater habitats by an alternative alignment or location is not feasible;

  • The project including any required mitigation, will result in no net loss of ecological functions associated with critical saltwater habitat.

Until an inventory of critical saltwater habitat has been done, shoreline master programs shall condition all over-water and near-shore developments in marine and estuarine waters with the requirement for an inventory of the site and adjacent beach sections to assess the presence of critical saltwater habitats and functions. The methods and extent of the inventory shall be consistent with accepted research methodology. At a minimum, local governments should consult with department technical assistance materials for guidance.

(iv) Critical freshwater habitats.

(A) Applicability. The following applies to master program provisions affecting critical freshwater habitats within shorelines of the state designated under chapter 36.70A RCW, including those portions of streams, rivers, wetlands, and lakes, their associated channel migration zones, and flood plains designated as such in the master program.

(B) Principles. Many ecological functions of lake, river and stream corridors depend both on continuity and connectivity along the length of the shoreline and on the conditions of the surrounding lands on either side of river channel and lake basin. Environmental degradation caused by development such as improper stormwater sewer or industrial outfalls, unmanaged clearing and grading, or runoff from buildings and parking lots within the watershed, can degrade ecological functions in lakes and downstream. Likewise, gradual destruction or loss of riparian and associated upland native plant communities, alteration of runoff quality and quantity along the lake basin and stream corridor resulting from incremental flood plain and lake basin development can raise water temperatures and alter hydrographic conditions, degrading ecological functions. This makes the corridor inhospitable for invertebrate and vertebrate aquatic, amphibian and terrestrial wildlife species and susceptible to catastrophic flooding, droughts, landslides and channel changes. These conditions also threaten human health, safety, and property. Long stretches of lake, river and stream shorelines have been significantly altered or degraded in this manner. Therefore, effective management of lake basins and river and stream corridors depends on:

(I) Planning for protection, and restoration where appropriate, throughout the lake basin and along the entire length of the corridor from river headwaters to the mouth; and

(II) Regulating uses and development within lake basins and stream channels, associated channel migration zones, wetlands, and the flood plains, to the extent such areas are in the shoreline jurisdictional area, as necessary to assure no net loss of ecological functions, including where applicable the associated hyporheic zone, results from new development.

As part of a comprehensive approach to management of critical freshwater habitat and other lake, river and stream values, local governments should integrate master program provisions, including those for shoreline stabilization, fill, vegetation conservation, water quality, flood hazard reduction, and specific uses, to protect human health and safety and to protect and restore lake and river corridor ecological functions and ecosystem-wide processes.

Applicable master programs shall contain provisions to protect hydrologic connections between water bodies, water courses, and associated wetlands. Restoration planning should include incentives and other means to restore water connections that have been impeded by previous development.

Master program provisions for lake basins and river and stream corridors should, where appropriate, be based on the information from comprehensive watershed management planning where available.

(C) Standards. Master programs shall implement the following standards within shoreline jurisdiction:
(I) Provide for the protection of ecological functions associated with critical freshwater habitat as necessary to assure no net loss of ecological functions.

(II) Integrate protection of critical freshwater, riparian and associated upland habitat, protection with flood hazard reduction and other lake, wetland, river and stream management provisions.

(III) Include provisions that facilitate authorization of appropriate restoration projects.

(IV) Provide for the implementation of the principles identified in (c)(iv)(B) of this subsection.

(3) *Flood hazard reduction.*

(a) **Applicability.** The following provisions apply to actions taken to reduce flood damage or hazard and to uses, development, and shoreline modifications that may increase flood hazards. Flood hazard reduction measures may consist of nonstructural measures, such as setbacks, land use controls, wetland restoration, dike removal, use relocation, biotechnical measures, and stormwater management programs, and of structural measures, such as dikes, levees, revetments, floodwalls, channel realignment, and elevation of structures consistent with the National Flood Insurance Program. Additional relevant critical area provisions are in WAC 173-26-221(2).

(b) **Principles.** Flooding of rivers, streams, and other shorelines is a natural process that is affected by factors and land uses occurring throughout the watershed. Past land use practices have disrupted hydrological processes and increased the rate and volume of runoff, thereby exacerbating flood hazards and reducing ecological functions. Flood hazard reduction measures are most effective when integrated into comprehensive strategies that recognize the natural hydrogeological and biological processes of water bodies. Over the long term, the most effective means of flood hazard reduction is to prevent or remove development in flood-prone areas, to manage stormwater within the flood plain, and to maintain or restore river and stream system's natural hydrological and geomorphological processes.

Structural flood hazard reduction measures, such as diking, even if effective in reducing inundation in a portion of the watershed, can intensify flooding elsewhere. Moreover, structural flood hazard reduction measures can damage ecological functions crucial to fish and wildlife species, bank stability, and water quality. Therefore, structural flood hazard reduction measures shall be avoided whenever possible. When necessary, they shall be accomplished in a manner that assures no net loss of ecological functions and ecosystem-wide processes.

The dynamic physical processes of rivers, including the movement of water, sediment and wood, cause the river channel in some areas to move laterally, or "migrate," over time. This is a natural process in response to gravity and topography and allows the river to release energy and distribute its sediment load. The area within which a river channel is likely to move over a period of time is referred to as the channel migration zone (CMZ) or the meander belt. Scientific examination as well as experience has demonstrated that interference with this natural process often has unintended consequences for human users of the river and its valley such as increased or changed flood, sedimentation and erosion patterns. It also has adverse effects on fish and wildlife through loss of critical habitat for river and riparian dependent species. Failing to recognize the process often leads to damage to, or loss of, structures and threats to life safety.

Applicable shoreline master plans 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. (See also (c) of this subsection.)

The channel migration zone should be established to identify those areas with a high probability of being subject to channel movement based on the historic record, geologic character and evidence of past migration. It should also be recognized that past action is not a perfect predictor of the future and that human and natural changes may alter migration patterns. Consideration should be given to such changes that may have occurred and their effect on future migration patterns.

For management purposes, the extent of likely migration along a stream reach can be identified using evidence of active stream channel movement over the past one hundred years. Evidence of active movement can be provided from historic and current aerial photos and maps and may require field analysis of specific channel and valley bottom characteristics in some cases. A time
frame of one hundred years was chosen because aerial photos, maps and field evidence can be used to evaluate movement in this time frame.

In some cases, river channels are prevented from normal or historic migration by human-made structures or other shoreline modifications. The definition of channel migration zone indicates that in defining the extent of a CMZ, local governments should take into account the river's characteristics and its surroundings. Unless otherwise demonstrated through scientific and technical information, the following characteristics should be considered when establishing the extent of the CMZ for management purposes:

- Within incorporated municipalities and urban growth areas, areas separated from the active river channel by legally existing artificial channel constraints that limit channel movement should not be considered within the channel migration zone.

- All areas separated from the active channel by a legally existing artificial structure(s) that is likely to restrain channel migration, including transportation facilities, built above or constructed to remain intact through the one hundred-year flood, should not be considered to be in the channel migration zone.

- In areas outside 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.

Master programs shall implement the following principles:

(i) Where feasible, give preference to nonstructural flood hazard reduction measures over structural measures.

(ii) Base shoreline master program flood hazard reduction provisions on applicable watershed management plans, comprehensive flood hazard management plans, and other comprehensive planning efforts, provided those measures are consistent with the Shoreline Management Act and this chapter.

(iii) Consider integrating master program flood hazard reduction provisions with other regulations and programs, including (if applicable):

- Stormwater management plans;
- Flood plain regulations, as provided for in chapter 86.16 RCW;
- Critical area ordinances and comprehensive plans, as provided in chapter 36.70A RCW; and
- The National Flood Insurance Program.

(iv) Assure that flood hazard protection measures do not result in a net loss of ecological functions associated with the rivers and streams.

(v) Plan for and facilitate returning river and stream corridors to more natural hydrological conditions. Recognize that seasonal flooding is an essential natural process.

(vi) When evaluating alternate flood control measures, consider the removal or relocation of structures in flood-prone areas.

(vii) Local governments are encouraged to plan for and facilitate removal of artificial restrictions to natural channel migration, restoration of off channel hydrological connections and return river processes to a more natural state where feasible and appropriate.

(c) Standards. Master programs shall implement the following standards within shoreline jurisdiction:

(i) Development in flood plains should not significantly or cumulatively increase flood hazard or be inconsistent with a comprehensive flood hazard management plan adopted pursuant to chapter 86.12 RCW, provided the plan has been adopted after 1994 and approved by the department. New development or new uses in shoreline jurisdiction, 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. The following uses and activities may be appropriate and/or necessary within the channel migration zone or floodway:

- Actions that protect or restore the ecosystem-wide processes or ecological functions.
• Existing and ongoing agricultural practices, provided that no new restrictions to channel movement occur.
• Mining when conducted in a manner consistent with the environment designation and with the provisions of WAC 173-26-241 (3)(h).
• Bridges, utility lines, and other public utility and transportation structures where no other feasible alternative exists or the alternative would result in unreasonable and disproportionate cost. Where such structures are allowed, mitigation shall address impacted functions and processes in the affected section of watershed or drift cell.
• Repair and maintenance of an existing legal use, provided that such actions do not cause significant ecological impacts or increase flood hazards to other uses.
• Development with a primary purpose of protecting or restoring ecological functions and ecosystem-wide processes.
• Modifications or additions to an existing nonagricultural legal use, provided that channel migration is not further limited and that the new development includes appropriate protection of ecological functions.
• Development in incorporated municipalities and designated urban growth areas, as defined in chapter 36.70A RCW, where existing structures prevent active channel movement and flooding.
• Measures to reduce shoreline erosion, provided that it is demonstrated that the erosion rate exceeds that which would normally occur in a natural condition, that the measure does not interfere with fluvial hydrological and geomorphological processes normally acting in natural conditions, and that the measure includes appropriate mitigation of impacts to ecological functions associated with the river or stream.
  (ii) Allow new structural flood hazard reduction measures in shoreline jurisdiction only when it can be demonstrated by a scientific and engineering analysis that they are necessary to protect existing development, that nonstructural measures are not feasible, that impacts on ecological functions and priority species and habitats can be successfully mitigated so as to assure no net loss, and that appropriate vegetation conservation actions are undertaken consistent with WAC 173-26-221(5).

Structural flood hazard reduction measures shall be consistent with an adopted comprehensive flood hazard management plan approved by the department that evaluates cumulative impacts to the watershed system.

(iii) Place new structural flood hazard reduction measures landward of the associated wetlands, and designated vegetation conservation areas, except for actions that increase ecological functions, such as wetland restoration, or as noted below. Provided that such flood hazard reduction projects be authorized if it is determined that no other alternative to reduce flood hazard to existing development is feasible. The need for, and analysis of feasible alternatives to, structural improvements shall be documented through a geotechnical analysis.

(iv) Require that new structural public flood hazard reduction measures, such as dikes and levees, dedicate and improve public access pathways unless public access improvements would cause unavoidable health or safety hazards to the public, inherent and unavoidable security problems, unacceptable and unmitigable significant ecological impacts, unavoidable conflict with the proposed use, or a cost that is disproportionate and unreasonable to the total long-term cost of the development.

(v) Require that the removal of gravel for flood management purposes be consistent with an adopted flood hazard reduction plan and with this chapter and allowed only after a biological and geomorphological study shows that extraction has a long-term benefit to flood hazard reduction, does not result in a net loss of ecological functions, and is part of a comprehensive flood management solution.

(5) Shoreline vegetation conservation.
(a) Applicability. Vegetation conservation includes activities to protect and restore vegetation along or near marine and freshwater shorelines that contribute to the ecological functions of shoreline
areas. Vegetation conservation provisions include the prevention or restriction of plant clearing and earth grading, vegetation restoration, and the control of invasive weeds and nonnative species.

Unless otherwise stated, vegetation conservation does not include those activities covered under the Washington State Forest Practices Act, except for conversion to other uses and those other forest practice activities over which local governments have authority. As with all master program provisions, vegetation conservation provisions apply even to those shoreline uses and developments that are exempt from the requirement to obtain a permit. Like other master program provisions, vegetation conservation standards do not apply retroactively to existing uses and structures, such as existing agricultural practices.

(b) Principles. The intent of vegetation conservation is to protect and restore the ecological functions and ecosystem-wide processes performed by vegetation along shorelines. Vegetation conservation should also be undertaken to protect human safety and property, to increase the stability of river banks and coastal bluffs, to reduce the need for structural shoreline stabilization measures, to improve the visual and aesthetic qualities of the shoreline, to protect plant and animal species and their habitats, and to enhance shoreline uses.

Master programs shall include: Planning provisions that address vegetation conservation and restoration, and regulatory provisions that address conservation of vegetation, as necessary to assure no net loss of shoreline ecological functions and ecosystem-wide processes, to avoid adverse impacts to soil hydrology, and to reduce the hazard of slope failures or accelerated erosion.

Local governments should address ecological functions and ecosystem-wide processes provided by vegetation as described in WAC 173-26-201 (3)(d)(i).

Local governments may implement these objectives through a variety of measures, where consistent with Shoreline Management Act policy, including clearing and grading regulations, setback and buffer standards, critical area regulations, conditional use requirements for specific uses or areas, mitigation requirements, incentives and nonregulatory programs.

In establishing vegetation conservation regulations, local governments must use available scientific and technical information, as described in WAC 173-26-201 (2)(a). At a minimum, local governments should consult shoreline management assistance materials provided by the department and Management Recommendations for Washington's Priority Habitats, prepared by the Washington state department of fish and wildlife where applicable.

Current scientific evidence indicates that the length, width, and species composition of a shoreline vegetation community contribute substantively to the aquatic ecological functions. Likewise, the biota within the aquatic environment is essential to ecological functions of the adjacent upland vegetation. The ability of vegetated areas to provide critical ecological functions diminishes as the length and width of the vegetated area along shorelines is reduced. When shoreline vegetation is removed, the narrower the area of remaining vegetation, the greater the risk that the functions will not be performed.

In the Pacific Northwest, aquatic environments, as well as their associated upland vegetation and wetlands, provide significant habitat for a myriad of fish and wildlife species. Healthy environments for aquatic species are inseparably linked with the ecological integrity of the surrounding terrestrial ecosystem. For example, a nearly continuous corridor of mature forest characterizes the natural riparian conditions of the Pacific Northwest. Riparian corridors along marine shorelines provide many of the same functions as their freshwater counterparts. The most commonly recognized functions of the shoreline vegetation include, but are not limited to:

• Providing shade necessary to maintain the cool temperatures required by salmonids, spawning forage fish, and other aquatic biota.
• Providing organic inputs critical for aquatic life.
• Providing food in the form of various insects and other benthic macroinvertebrates.
• Stabilizing banks, minimizing erosion, and reducing the occurrence of landslides. The roots of trees and other riparian vegetation provide the bulk of this function.
• Reducing fine sediment input into the aquatic environment through stormwater retention and vegetative filtering.
• Filtering and vegetative uptake of nutrients and pollutants from ground water and surface runoff.
• Providing a source of large woody debris into the aquatic system. Large woody debris is the primary structural element that functions as a hydraulic roughness element to moderate flows. Large woody debris also serves a pool-forming function, providing critical salmonid rearing and refuge habitat. Abundant large woody debris increases aquatic diversity and stabilization.

• Regulation of microclimate in the stream-riparian and intertidal corridors.

• Providing critical wildlife habitat, including migration corridors and feeding, watering, rearing, and refugia areas.

Sustaining different individual functions requires different widths, compositions and densities of vegetation. The importance of the different functions, in turn, varies with the type of shoreline setting. For example, in forested shoreline settings, periodic recruitment of fallen trees, especially conifers, into the stream channel is an important attribute, critical to natural stream channel maintenance. Therefore, vegetated areas along streams which once supported or could in the future support mature trees should be wide enough to accomplish this periodic recruitment process.

Woody vegetation normally classed as trees may not be a natural component of plant communities in some environments, such as in arid climates and on coastal dunes. In these instances, the width of a vegetated area necessary to achieve the full suite of vegetation-related shoreline functions may not be related to vegetation height.

Local governments should identify which ecological processes and functions are important to the local aquatic and terrestrial ecology and conserve sufficient vegetation to maintain them. Such vegetation conservation areas are not necessarily intended to be closed to use and development but should provide for management of vegetation in a manner adequate to assure no net loss of shoreline ecological functions.

(c) Standards. Master programs shall implement the following requirements in shoreline jurisdiction.

Establish vegetation conservation standards that implement the principles in WAC 173-26-221 (5)(b). Methods to do this may include setback or buffer requirements, clearing and grading standards, regulatory incentives, environment designation standards, or other master program provisions. Selective pruning of trees for safety and view protection may be allowed and the removal of noxious weeds should be authorized.

Additional vegetation conservation standards for specific uses are included in WAC 173-26-241(3).
EXHIBIT B

Proposed revisions to Section 7.14.10 of the Draft SMP (Sept. 2017) for County Commissioner consideration
10. Channel Migration Zone Protection Standards: If County maps indicate that a potential channel migration hazard exists on or adjacent to a proposed use or development site, the applicant shall either:

a. Channel Migration Zone (CMZ) Mapping. Locate the proposal landward of the potential channel migration hazard area as indicated on the map which already includes an erosion hazard buffer; or Clallam County shall make available to the public maps and supporting documents (e.g., methodology) of the potential CMZ based on best available information. These maps currently include the following:

i. Delineation of the Dungeness River Channel Migration Zone—River Mouth to Canyon Creek; by Byron Rot and Pam Edens, Jamestown S’Klallam Tribe, October 1, 2008.

ii. Final Channel Migration Assessments for Clallam County, prepared by Cardno Ent Nexus – GeoEngineers, for Washington Department of Ecology.

These maps and supporting documentation shall be advisory and used by the Administrator to provide guidance in determining the applicability of the standards of this Program to a property. These maps shall be updated as new information becomes available.

b. CMZ Checklist and Review. Applicant’s that propose new shoreline uses and development in the mapped potential CMZ within the shoreline jurisdiction shall submit a completed CMZ checklist available from the Administrator with their shoreline application. The Administrator will perform and document the results of the following steps to determine whether to require the applicant to prepare a CMZ assessment report:

i. Review the submitted CMZ checklist and any other supporting information provided by the applicant;

ii. Consult maps and related supporting data bases and reports on the location and extent of the potential CMZ that are available to the public;

iii. Review whether any significant channel movement has occurred between available County aerial orthophoto data layers since Year 2000;

iv. Consult with state resource agencies of jurisdiction and/or expertise such as Department of Natural Resources, Department of Ecology and Department of Fish and Wildlife; and

v. Conduct a site visit to observe and document (e.g., photos) current conditions and evidence of channel migration.

c. CMZ Assessment Report. If required by the Administrator, the CMZ assessment report shall be prepared by a geologist, engineering geologist, or professional engineer licensed in the state of Washington, or other qualified professional with at least 5 years of experience in analyzing channel response in the fluvial systems of the Pacific Northwest, that demonstrates the following:

i. The parcel on which the development or use is proposed is effectively protected (disconnected) from the channel movement due to the existence of permanent levees maintained by public agencies (not all roads and levees will be considered disconnection points); or
ii. The proposed use or development site has minimal risk of channel migration as indicated by the existing channel type, land cover (and low likelihood of future alterations in land cover); surficial geology, low soil erosion potential; lack of evidence of likely avulsion pathways (including areas upstream of, but proximate to, the site); low inundation frequency(ies); whether channel movement has occurred between aerial photo years; and other available information. The assessment shall include a review of existing CMZ maps and studies; available data (e.g., aerial photos) regarding historical channel locations at the site; available topographic data (e.g., LiDAR, USGS topographic maps); identification of the site within a broader geomorphic reach of the river system, and the general characteristics of that reach; description of existing channel type, existing channel alterations and likelihood of future alterations with changes in land cover; surficial geology, soils and erosion potential; and geotechnical setbacks relating to erosion at the toe of adjacent slope(s). The approach to assessing local migration shall be generally equivalent to the methods detailed in "A Framework for Delineating Channel Migration Zones" (Ecology Publication # 03-06-027), or similar method approved or sanctioned by Ecology.

The determination of minimal risk shall also consider the typical lifespan of the proposed use and development (e.g., 100 years for a single-family home); the ability and ease of moving the use or development (e.g., RV or mobile home); whether the use or development is temporary or permanent; and the likely effectiveness of applicable shoreline and critical area (e.g., wetlands) buffers between the stream and the proposed location of the use and development. The CMZ assessment shall also evaluate the risk of whether it would be reasonably foreseeable that the proposed use or development would require new shoreline stabilization or interrupt the process of channel migration.

\[\text{CMZ Field Determination. If a qualified professional determines that the proposed use or development is at risk to channel migration based on the CMZ assessment above, a field review is required to confirm the presence of a CMZ, and field observations shall be documented in the CMZ assessment report. Field observation finding shall include:}
\]

\[\text{i. Date of the site visit;}
\]

\[\text{ii. Who conducted the field review and their title/position;}
\]

\[\text{iii. Distance and location of channel walked;}
\]

\[\text{iv. Length and location of CMZ boundary delineated;}
\]

\[\text{v. Presence of avulsion hazard and/or erosion hazard areas;}
\]

\[\text{vi. Description of method(s) used to determine CMZ presence, CMZ outer edge delineation and marking (flagging, other);}
\]

\[\text{vii. Description and location of required shoreline and critical area buffers (e.g., wetlands) pursuant to Chapter 6 and 7 of this Program between the ordinary high water mark and the proposed use and development; and}
\]

\[\text{viii. Other applicable information.}
\]

\[\text{e. New Uses and Development Inside CMZ. Based on the results and recommendations of the channel migration zone assessment, the Administrator may prohibit or limit use or development within a channel migration zone when such uses or development would likely be subject to channel migration or when it would be reasonably foreseeable that the}
\]
use or development would require shoreline stabilization or interrupt the process of channel migration. In addition, based on the findings and recommendations of the CMZ assessment report, or a habitat management plan required by this Program, the Administrator may and/or require a buffer of undisturbed natural vegetation from the edge of the channel migration zone to retain both a safety and habitat buffer if and when the channel migrates to the channel migration zone edge. The exception would be new uses and development that may be appropriate (e.g., water dependent uses, restoration projects, etc.) and/or may be necessary (e.g., roads, utilities) within the CMZ that are otherwise authorized and consistent with this Program, including providing mitigation to address impacted ecological functions and processes.

7.15 Regulations – Frequently Flooded Area Designation and Mapping

1. Designation and Mapping: All lands classified as floodway, floodplain or special flood hazard areas in the Federal Emergency Management Agency report titled “The Flood Insurance Study for Clallam County” dated February 23, 2001, as now and hereafter amended, with accompanying Flood Insurance Rate and Boundary Maps, are designated as frequently flooded areas. The study and maps are on file at Clallam County. When base flood elevation data has not been provided in the Flood Insurance Study, the Administrator shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from the Federal Emergency Management Agency, Washington State Department of Ecology, or other qualified source. Where base flood elevation data and floodway delineation are not available either through the Flood Insurance Study or from a qualified source, historical data, high water marks, photographs of past flooding, etc., shall be used to determine base flood elevations. Special Flood Hazard Areas shall be delineated by engineering studies that meet the specifications 44 CFR § 65 and approved by FEMA and then adopted by Clallam County. The only method to alter data or maps related to special flood hazard areas is through an officially processed map change, through a physical map revision, a county-wide remapping, or a Letter of Map Change (LOMC) submitted to FEMA and approved. Qualified professionals may submit these studies to FEMA to alter the location of the Special Flood Hazard Areas through the Letter of Map Change (LOMC) process, with the concurrence of the Administrator.

7.16 Regulations – Frequently Flooded Area Protection Standards

1. The standards of this Program, including this section, shall be implemented along with the International Building Code and Clallam County Code 21.01.040 to protect frequently flooded areas because the jurisdiction of the shoreline master program covers the full extent of the floodplain and is therefore coincident with the frequently flooded areas.

2. The standards of this section and other applicable provisions of this Program shall apply to all new uses and developments occurring within the floodway, floodplain or special flood hazard areas, including flood control structures regulated in Section 4.4 of this Program.

3. Critical facilities shall be prohibited within areas designated as frequently flooded. Where linear critical facilities must cross frequently flooded areas, reasonable and practicable alternative alignments which minimize flood hazard shall be considered and preferred; any necessary crossing for linear critical facilities shall be elevated and/o flood-proofed, sited to minimize hazard and ecological impacts, and otherwise designed and maintained to minimize flood hazards.
Date: August 1, 2018  
To: Board of Clallam County Commissioners  
From: Steve Gray, Planning Manager  
Re: Public Comments on Draft SMP Chapter 8—Mitigation and No Net Loss

The County Planning Commission (PC) recommended a Shoreline Master Program (SMP) to the Board of County Commissioners (BOCC) to update and replace: (1) the existing 1976 SMP (last amended 1992) and (2) the SMP administrative procedures in Chapter 35.01, Shoreline Management, Clallam County Code (CCC) under Title 35 CCC, Shorelines. The PC’s recommendation is represented by the Draft SMP (September 2017).

The BOCC held a public hearing on the PC’s recommended Draft SMP on December 12, 2017. Since the December 12 public hearing, the Board has held ten work sessions in 2018 on the Draft SMP (Sept. 2017) and public comments received.

Chapter 8 of the Draft SMP contains policies and regulations that provide the framework for ensuring that impacts of shoreline use and development are mitigated to achieve no net loss of ecological functions. Draft SMP Chapter 8, Mitigation and No Net Loss contain the following eight sections:

Section 8.1 Applicability  
Section 8.2 Policies  
Section 8.3 Regulations—General Mitigation Requirements  
Section 8.4 Regulations—Compensatory Mitigation Plan Contents  
Section 8.5 Regulations—Wetland Mitigation Plans  
Section 8.6 Regulations—Aquatic & Wildlife Habitat Conservation Areas Mitigation Plans  
Section 8.7 Regulations—Frequently Flooded Areas Mitigation Plans  
Section 8.8 Regulations—Critical Aquifer Recharge Areas Mitigation Plans

To assist with Board review of SMP Chapter 8 and public comments received, this staff report provides background on:

- State requirements related to no net loss of shoreline ecological functions.
- Methods for achieving no net loss.
- How the County’s SMP and supporting documents demonstrate no net loss.
- County monitoring and tracking of no net loss.

The staff report also summarizes and addresses public comments received on the Draft SMP (Sept. 2017) between September 20 thru December 12, 2017 (close of the public hearing on Draft SMP) that are specific to Draft SMP Chapter 8, Mitigation and No Net Loss. The staff response includes recommended amendments to the Draft SMP based on comments received.
MITIGATION AND NO NET LOSS - BACKGROUND

The Shoreline Management Act (SMA), RCW 90.58, provides a broad policy framework for protecting the natural resources and ecology of the shoreline environment. The state SMP Guidelines, WAC 173-26, establish the standard of "no net loss" of shoreline ecological functions as the means of implementing that framework through local SMPs. State rules in WAC 173-26-186(8)—see Attachment A—direct that SMPs:

"...include policies and regulations designed to achieve no net loss of those ecological functions."

"...include regulations and mitigation standards ensuring that each permitted development will not cause a net loss of ecological functions of the shoreline; local governments shall design and implement such regulations and mitigation standards in a manner consistent with all relevant constitutional and other legal limitations on the regulation of private property..."

"...include regulations ensuring that exempt development in the aggregate will not cause a net loss of ecological functions of the shoreline...."

"..."To ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts among development opportunities...."

What Does No Net Loss Mean?

No net loss means that as new shoreline use and development occurs; ecological functions stay the same (or are improved) over time. Both protection and restoration are needed to achieve no net loss. Restoration activities also may result in net improvements to shoreline ecological function over time. Most, if not all, shoreline development produces some impact to ecological functions. However, the recognition that future development will occur is basic to the no net loss (NNL) of shoreline ecological functions standard.

No net loss assumes that some impacts may occur but that adequate measures are in place within the overall SMP to offset them such that the post development conditions are no worse overall than pre-development conditions. The SMP only regulates new development along the shorelines. Development actions within the narrow ribbon of land and water within the shoreline jurisdiction are only a subset of the actions that can affect ecological functions. There will be impacts that cannot be fully mitigated either because they happened prior to the adoption of the updated SMP; are associated with established/grandfathered lots, structures, and uses; and/or will come from impacts outside of the SMP jurisdiction or from factors outside of the County’s control (e.g., climate change and sea level rise). The challenge is in maintaining shoreline functions while allowing for appropriate new shoreline development designed to avoid and minimize impacts to shoreline ecological functions.

Attachment B provides more information on the state standard of NNL of ecological functions.

Methods for Achieving No Net Loss

The following SMP update practices help to meet the no let loss requirement:

- Inventory and characterize shoreline ecosystem processes and functions to identify the best areas for future shoreline development and mitigation.

- Establish appropriate shoreline environmental designations based on the baseline conditions found in the shoreline inventory and characterization.

- Establish policies and regulations that will define what type of development can occur in each shoreline environmental designation, establish appropriate standards (e.g., vegetative buffers)
to avoid and minimize impacts to ecological functions for permitted uses, determine the level of review required through the type of shoreline permit, and appropriately mitigate adverse impacts.

- Prohibit uses that are not water-dependent or preferred shoreline uses. For example, office and multi-family housing buildings are not water-dependent or preferred uses. There is no requirement to provide a place for all types of uses within shoreline jurisdiction.

- Implement restoration actions to improve shoreline ecology. (Note: The Draft SMP Section 3.9 contains restoration policies and regulations. The County has also prepared a Countywide Shoreline Restoration Plan (February 2016). The County’s Shoreline Restoration Plan identifies opportunities and needs for shoreline restoration.)

- Monitor changes over time and adjust shoreline management protocols, as needed.

How County Demonstrates No Net Loss

The County demonstrates no net loss through the comprehensive SMP update planning process and over time, during the project review and permitting process, and through restoration actions. The SMP planning process includes the following County SMP supporting documents:

- 2012 Shoreline Inventory and Characterization (ICR) Reports. The shoreline inventory documents shoreline baseline conditions and the characterization analyzes shoreline functions and processes.

- 2016 Countywide Shoreline Restoration Plan. The restoration plan identifies goals, objectives and policies; opportunities and priorities; and implementation strategies.

- 2017 Final Cumulative Impacts Analysis and No Net Loss (CIA/NNL) Report. The CIA/NNL Report provides an analysis of cumulative impacts of reasonably foreseeable future shoreline development and how the County will achieve no net loss of shoreline ecological functions through implementation of the SMP.

The overall proposed SMP policies and regulations are designed to achieve no net loss on a programmatic scale. This includes standards (e.g., buffers) that each development must meet to achieve no net loss at the project scale.

The SMP includes standards, procedures and permitting for evaluating the effects of specific development actions on a case-by-case basis at the time individual shoreline development proposals are reviewed. Project-level analysis that are required at the time a development is proposed will allow site specific factors to be included in the assessment of baseline conditions to supplement shoreline inventory and characterization information available for the County as a whole. To achieve no net loss, the SMP requires each project to mitigate impacts by first avoiding, then minimizing adverse impacts, then replacing damaged resources through compensatory mitigation efforts (this mitigation sequence is addressed in SMP Section 8.3). The County is also required to implement restoration measures on a voluntary basis to supplement the project-level actions.

The SMP identifies uses that require a shoreline conditional use permit (CUP). CUPs are automatically required for unanticipated types of development (i.e., unclassified uses). The SMP also requires CUPs for developments in which the impacts cannot be fully known at the planning level. The CUP review process requires demonstrating compliance with the policies and regulations of the SMP, but also requires that consideration be given to the cumulative environmental impact of additional requests for similar actions in the area—See SMP Section 10.2.2.
Monitoring and Tracking No Net Loss

Maintaining ecological functions at a baseline level through SMP implementation presupposes several things:

1. That ecological functions can be ‘measured’ to establish a baseline for no net loss comparisons;

2. That linkages between specific shoreline development actions and changes in ecological function can be documented (i.e., armoring of feeder bluffs affects sediment supply, which affects beach structure and the productivity of beaches for forage fish spawning, etc.);

3. That the effects of actions that occur outside of the scope of the SMP can be differentiated from those that are directly tied to SMP decisions; and

4. That the conditions at some future point in time can be compared to existing conditions to determine whether the level of function has increased, decreased, or remained the same.

In order to document existing functions and track changes that occur over time, a set of measurable indicators is needed to help determine if ecological functions are increasing, decreasing, or remaining the same. The set of indicators must be specific enough to be tallied in a reliable and systematic way and data must be available through existing sources. To identify potential indicators, the County considered a wide range of characteristics that reflect the functionality of the shoreline; examined the list of suggested no net loss indicators in Chapter 4, No Net Loss of Shoreline Ecological Functions, of Ecology’s Shoreline Handbook (see Attachment B); and engaged a technical work group to provide guidance on the indicator selection.

The specific indicators identified by the County as noted in proposed SMP Policy 8.2.(3) are as follows:

- Percent of mapped feeder bluffs with armoring (percent classified as modified);
- Status of salmon stocks;
- Status of shellfish beds (frequency of closures);
- Length of stream bordered by/confined by levees, excluding setback levees;
- Number of overwater structures per mile of shore and number of overwater structures per mile of sediment transport zone;
- Number of tidal barriers;
- Percent of aquatic area supporting submerged aquatic vegetation (e.g., kelp, eelgrass);
- Percent closed canopy forest within two hundred (200) feet of the ordinary high water mark;
- Percent impervious surface within two hundred (200) feet of the ordinary high water mark; and
- Area of undeveloped floodplains/channel migration zone.

The above selected indicators and associated baseline conditions are documented in the County’s 2012 Shoreline Inventory and Characterization (ICR) Reports, and were selected to meet all of the following criteria:

- Theoretically sound;
- Directly relevant to SMP management decisions;
- Sensitive to change; and
- Trackable using available data.
The selected indicators includes at least one indicator for each major function category identified in the Shoreline Guidelines (habitat, water quality and hydrology) consistent with WAC 173-26-201(3)(d)(1)(C). Each function category has two components—marine (nearshore) and freshwater (both rivers and lakes). Each component is characterized by one or more indicators that serve as proxies for the conditions of key attributes. In other words, the indicators are not direct measures of function, but are indirect surrogates for direct functional measurements. For example, the presence of a feeder bluff within a shoreline reach is an indicator that the shoreline plays a role in sediment supply and habitat formation; and the presence of eelgrass is an indicator that the shoreline is important for primary productivity or food web functions.

The functions represented by the above selected indicators above are not the only functions important to the shoreline environment—they are simply indicators that can be relatively easily tracked given using available data and resources. The requirement for no net loss applies to all functions—and the County’s SMP is designed to protect all shoreline functions, not just certain ones. However, the County lacks the means, technology, and capacity to objectively measure all functions, or track their status in response to management actions.

Tracking these indicators over time allows for a more objective assessment of how and to what degree shoreline conditions and functions are changing. By taking note of the type, location and amount of change observed, the County can assess whether there is a link to actions governed by the SMP. The changes can be reviewed in light of specific shoreline management decisions to determine if the SMP is achieving no net loss.

To assist with monitoring SMP implementation over time, a development tracking checklist was created to help identify and track the implications of new shoreline use and development on shoreline ecological functions and processes. The checklist is found in the attachments to the Draft SMP and allows the County to consider the effects of development proposal on specific functions, record information pertaining to the selected function and show compliance with SMP standards. The goal is that by using the checklist the County can monitor its decision-making and provide transparency with respect to meeting the no net loss standard.

As part of the SMP update effort, the Olympic Natural Resources Center conducted a 2012 boat survey for the City of Forks of the shoreline stream reaches within both the city and its urban growth area that included a series of photographs of riparian areas. To qualitatively track changes in City shoreline conditions throughout time, the photo survey could be repeated in the future, and compared to the 2012 photos.

Other data useful for monitoring, are comparing available aerial photos taken of County marine and freshwater shoreline areas over-time.

**What is Mitigation Sequencing?**

Mitigation sequencing is one of the main mechanisms for achieving no net loss. Mitigation sequencing is a common hierarchical protocol for avoiding and minimizing impacts associated with individual development proposals and actions (WAC 173-26-201(2)(e)). Mitigation sequencing requires all proposed uses and developments to: 1) avoid adverse impacts, 2) include measures to minimize impacts, and 3) compensate for any impacts that cannot be avoided or minimized. The SMP (Section 8.3) specifies that the Administrator shall require compensatory mitigation for development proposals that:

- Do not fully conform to one or more of the dimensional requirements, performance standards, and/or design criteria in the SMP; or
• Result in measureable damage, loss and/or displacement of a wetland, aquatic habitat
conservation area, wildlife habitat conversation area, flood storage or conveyance area, or
critical aquifer recharge area; or

• Result in measureable damage, loss and/or displacement of kelp beds, eelgrass beds,
spawning and holding areas for forage fish, such as herring, smelt and sand lance; subsistence,
commercial and recreational shellfish beds; mudflats; intertidal habitats with vascular plants;
and areas with which priority species have a primary association.

In instances where impacts to ecological functions have the potential to occur all reasonable efforts
must be taken to avoid, and where unavoidable, minimize and mitigate impacts such that no net loss of
shoreline ecological functions is achieved.

In mitigation sequencing, possible adverse impacts are avoided altogether by not taking a certain action
or parts of an action, or by moving the action. For example, a development project adjacent to a
wetland would be required to avoid construction activities that could directly impact (vegetation removal
or draining) or indirectly impact (increased sedimentation or runoff) the wetland habitat.

When adverse impacts to ecological functions are unavoidable, the magnitude or severity of the impact
resulting from an activity must be minimized. This may include reducing or eliminating certain elements
of a development proposal (e.g., fewer lots within a subdivision), scaling back the size or scope of a
development proposal (e.g., building a smaller residential structure, re-aligning a road to avoid
damaging valuable habitats), implementing design alternatives or strategies that require less in-water
work, or are timed to avoid impacting sensitive species (e.g., “fish / salmon work windows”), and a
variety of other measures.

In most cases, development proponents develop plans and implement mitigation sequencing consistent
with the SMP and other land use standards, and by considering ways to avoid, minimize, and rectify
impacts based on the specific parcel characteristics, the functional needs of the development, and
other factors. County planning staff supports this effort by applying the County’s adopted SMP and
other (e.g., zoning) regulations, and reviewing proposals (applications and plans) to ensure that
minimum requirements are achieved.

When avoiding or minimizing impacts is unfeasible, the development proponent must provide
compensation for the impact. This may include includes replacing damaged resources (e.g., re-
establishing or enhancing a wetland), reseeded or replanting impacted areas, restoring water quality
and quantity, or otherwise improving the ecological functions such that there is no net loss for that
development proposal. Mitigation sites must be monitored and maintained until they achieve the
desired functions and fully compensate for the impacts.
**PUBLIC COMMENTS RELATED TO SPECIFIC SMP CHAPTER 8 POLICIES AND REGULATIONS**

Below is a summary of public comments received on specific proposed policies and regulations in SMP Chapter 8. A staff response/recommendation to the comment is also provided.

<table>
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<th>Section</th>
<th>Commenter</th>
<th>Summary of Comment</th>
<th>Staff Response</th>
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| 8.3.(1) | Quileute Tribe (A-1) | Regulation 8.3.1 of the Draft SMP requires that:  
"Proponents of new shoreline use and development shall employ measures to mitigate unavoidable adverse impacts to ensure no net loss of shoreline ecological functions and to sustain shoreline ecosystem processes. Required mitigation shall not exceed a level necessary to assure that proposed uses or development will result in a no net loss of shoreline ecological functions." (Draft SMP 8.3.(1))  
"Regulation 8.3.1 is unequivocal, makes no exceptions for specific types of use or development. The Quileute Tribe strongly supports the inclusion of Regulation 8.3.1 in the final SMP......" | Comment supports provision as written. See also related Tribe comment and staff response under "Other Comments" of this staff report related to applying the intent of Regulation 8.3.1 throughout the SMP. |
| 8.3.(1) | PABA (C-5) & Endorsed by Sequim Assoc. of Realtors (C-7); Gilles (E-5) | WAC 173-26-186(5) requires the county or Department of Ecology to conduct a "Process for Evaluation of Proposed Regulatory or Administrative Actions to Avoid Unconstitutional Takings of Private Property." Where is that evaluation? How are the subjective concerns and mitigation requirements that surround the "no net loss" concept considered?  
The standard in Section 8.3.1 of the SMP of "extraordinary hardship and denial of reasonable use of the property" is much too restrictive, as an unconstitutional taking without compensation can occur through a diminution in value of property far short of a complete "denial of reasonable use".  
Requested change: Prepare the property rights taking analysis required under state law. | No change recommended. The specific language of concern of "extraordinary hardship and denial of reasonable use of the property" was in the 2014 Draft SMP. It is removed from this regulation in the current Draft SMP (Sept. 2017).  
The revisions to the prior 2014 regulation that are incorporated into the current 8.3.(1) standard were as follows:  
1. Proponents of new shoreline use and development, including preferred uses and uses that are exempt from permit requirements, shall employ all reasonable measures to mitigate unavoidable adverse impacts on to ensure no net loss of shoreline ecological functions and to sustain shoreline ecosystem processes. Impacts can be mitigated if mitigation measures would not result in an extraordinary hardship and denial of reasonable use of the property. Required mitigation shall not exceed a level necessary to assure that proposed uses or development will result in a no net loss of shoreline ecological functions.  
The 2014 Draft SMP was subject to County legal review to address this requirement. Recommended changes by legal were incorporated into the revised draft before the County Commissioners. |
### Summary of Comments on Draft Regulation 8.3.(4)

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<td>OEC &amp; FMPSP (C-3a); PPF (C-6)</td>
<td>Commented in regards to the below regulation that new shoreline use and development should be kept from adverse impacts. Out-of-kind mitigation sanctions area impacts and net loss. Stick with the overall goal cited in 8.5.1 – no net loss of functions, acreage and values. “Compensatory mitigation measures shall occur in the vicinity of the impact or at an alternative location within the same watershed or appropriate sections of marine shoreline (e.g., reach or drift cell) that provides greater and more sustainable ecological benefits ….”</td>
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<tr>
<td>PABA (C-5) &amp; Endorsed by Sequim Assoc. of Realtors (C-7); Gilles (E-5)</td>
<td>The “no net loss” requirement in the draft plan requires mitigation beyond that in SEPA and in the WAC. This excessive mitigation is also required in Section 8.3.4 that states “Compensatory mitigation measures shall occur in the vicinity of the impact or at an alternative location within the same watershed or appropriate section of marine shoreline (e.g., reach or drift cell) that provides greater and more sustainable ecological benefits.”</td>
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| Bowen (E-1a) | In regards to last sentence:  
- “Recommends remove the requirement for approval and sanctioning by appropriate tribal authorities for alternative mitigation practices for citizens of the State. No constitutional based authority has been granted to tribal authorities to impose their authority of approving such on the citizens-themselves of the State…….”  
- “…Given this topic (requirement) was not addressed during any public forum or during other public meetings in the SMP Update process… the entire document (at large, all chapters and appendices) requires review to determine where else such approval and/or sanctioning is being called for by “appropriate tribal authorities” may exist and is not legally substantiated… and removed!”  
- “…A possible solution (though I am not in support because I don’t want my county plans to be confusing with such intentions and suggested requirements; it creates an environment of holding the citizen hostage to a difficult understanding what one’s rights, freedoms, privacy and privileges are) a provision for review and comment by such appropriate tribal authority to any State of Federal approval and sanctioning process would be the limit of representing the tribal interest (a provision as a result of court action that in itself is questionable but the citizens are forced to live within the current environment of influence).” Comment notes that this is demonstrated by such language in SMP Section 9.3.6 that reads as follows: “State and federal resource agencies, co-managers, and tribes, shall be consulted for development proposals that affect anadromous fish, shellfish, marine birds, and other shoreline resources.” (Draft SMP Policy 9.3.6) |

### Staff Response and Recommendation:

The mitigation sequence that includes “compensatory mitigation” in the Draft SMP Regulation 8.3.(2) is consistent with the state SMP Guidelines (WAC 173-26-201(2)(e)) and also with the definition of mitigation under the State Environmental Policy Act (SEPA) Rules (WAC 197-11-768), which includes compensatory mitigation. The SMP is intended as a whole to prevent no net loss of ecological functions. For example, a new single-family home within the shoreline jurisdiction located and developed consistent with applicable shoreline development standards (e.g., buffers) of the SMP would be determined as not resulting in a net loss of ecological functions and compensatory mitigation would not be required.

The last sentence of this Draft SMP Regulation 8.3.(4) allows the County to utilize alternative mitigation practices such as mitigation banks. These types of mitigation programs can be effective alternatives to restore ecological functions where on-site mitigation is not possible or would have low chance of success.

The idea of a mitigation bank or in-lieu fee program is an approach that directs mitigation for unavoidable impacts to sites where mitigation would provide for greater ecological functions and likely more sustainable. This provision was also in the earlier 2012 and 2014 Draft SMPs.
Currently, the County has not developed such alternative mitigation programs. An example of a state program in Clallam County is the Washington State Department of Transportation (WSDOT) wetland mitigation restoration and enhancement site near the Dungeness River to mitigate unavoidable loss of wetland loss related to state highway projects.

A word search of the SMP document did not find other standards requiring sanctioning by Tribal authorities. Many policies and standards do speak to coordinating or collaborating with Tribes.

Based on the comments received and the above response, staff recommends the following clarifications and amendments to Draft Regulation 8.3.(4):

4. When compensatory mitigation is required, measures it shall occur directly and in the immediate vicinity of the impact to ensure no net loss of ecological functions, or at an alternative Off-site, compensatory mitigation location within the same watershed or appropriate section of marine shoreline (e.g., reach or drift cell) that provides greater and more sustainable ecological benefits may be authorized when on-site mitigation to fully mitigate unavoidable adverse impacts is not possible. When determining whether to authorize offsite mitigation provides greater and more sustainable benefits, the Administrator or Hearing Examiner shall consider limiting factors, critical habitat needs, and other factors (e.g., provides equivalent or greater and more sustainable ecological functions) identified by the locally County’s, adopted shoreline restoration plan [insert date of adoption or resolution number], or an approved watershed or comprehensive resource management plan. Authorization of compensatory mitigation measures shall require appropriate safeguards, terms or conditions as necessary to ensure no net loss of ecological functions.

The Administrator or Hearing Examiner may also approve use of alternative mitigation practices programs for mitigation of impacts for permitted shorelines development such as in-lieu fee programs, mitigation banks, and other similar approaches provided they have been adopted by the county following a public review process and obtaining any required approved and sanctioned approvals by the appropriate state, and federal agency with jurisdiction, and tribal authorities. Clallam County shall consult with state and federal agencies with jurisdiction and Tribes in the development, adoption and administration of such alternative mitigation programs.

Summary of Comments on Draft Regulation 8.3.(7)

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<td>Bowen (E-1a)</td>
<td>In regards to sub-part (f) applicable to when compensatory mitigation requirements that reads: “... (f) The mitigation site will be protected through a conservation easement or similar mechanism to ensure that it is maintained and protected in perpetuity; and...” Comments as follows: “Is the conditional term used in regards to a conservation easement “perpetuity” a requirement of current law (RCW or WAC)? Could this be a determinable/negotiable period of time? If not a matter of law, the presence of any duration of time needs to be removed from any condition of establishing a conservation easement. And especially, if due compensation is not incorporated into the plan. Otherwise, any conservation easement is not a value of mitigation for both parties (the owner and the “government”) equally/fairly. Another example of holding the landowner hostage to an “undesirable scenario” when perpetuity creates little to no certainty for the landowner, especially given chance for changes and unknowns in the future.”</td>
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<tr>
<td>Quileute Tribe (A-1)</td>
<td>Comment supports standard in SMP Regulation 8.3.7(f) that requires mitigation sites to be protected in perpetuity.</td>
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</table>
**Staff Response and Recommendation:** No change recommended. Regulation 8.3.(7) and sub-part (f) only applies where compensatory mitigation is required. The requirement for compensatory mitigation means that adverse impacts to ecological functions will occur that have not been avoided or minimized for a proposed new shoreline use or development. This is determined by review of the proposal for conforming to the SMP regulations and the General Mitigation Requirements under SMP Section 8.3.

Where compensatory mitigation is determined necessary, this means the permitted shoreline use must be conditioned to provide for a compensatory mitigation site to replace, enhance, or provide substitute resources. If such compensatory mitigation site was allowed to be developed inconsistent with such mitigation after period of time, the County would not be complying with state requirement to ensure no net loss of ecological functions under WAC 173-26-186 (8)(b).

### Summary of Comments on Draft Regulation 8.3.(9)

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<td>Bowen (E-1a)</td>
<td>Concerned over fees and costs incurred by the landowner under Section 8.3. In regards to the wording in Section 8.3.(9), comments that this provision &quot;talks to such things as ANY cost incurred. This can quickly get abused and such appeal process must include appealing these subjective fee charges.&quot;</td>
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**Staff Response and Recommendation:** Fees for review and processing of County shoreline permits/approvals and special reports (e.g., mitigation plans) are not subjective. They are found under Section 5.100.300 of the County’s Consolidated Fee Schedule. These fee provisions were recently updated and effective May 1, 2018. Draft SMP Section 10.2.10, Fees, also addresses required fees for shoreline reviews.

Draft SMP Regulation 8.3.(9) provision allows the County engage and charge for costs of third party reviews of submitted mitigation plans. This may be necessary if the County determines that additional technical assistance is required to assess application and submitted technical reports. A similar provision is found in the Section 27.12.800 CCC of the County’s critical area code. Third party reviews are also addressed in Draft SMP Section 10.3.6.

Staff recommends amendments based on the comment received and related SMP provisions noted above as follows:

- Amend Draft SMP Regulation 8.3.(9) to clarify relation with fee requirements under SMP Chapter 10 as follows:
  9. The applicant shall pay for or reimburse the County for the costs incurred in the review of a mitigation plan and for any costs incurred by the County to engage technical consultants or staff for review and interpretation of data and findings submitted by or on behalf of the proponent consistent with Section 10.2.10, Fees, and Section 10.3.6, Third Party Review. Mitigation plan review and technical assistance fees are required under Chapter 5.100 Clallam County Code, as now or hereafter amended.

- Amend Draft SMP Section 10.2.10, Fees, to clarify fees related to review of mitigation plans and special reports as follows:
  1. Required fees for all shoreline substantial development permits, shoreline conditional use permits, shoreline variances, statements of exemption, appeals, pre-application conferences, review of required mitigation plans and critical area reports (e.g., wetland delineation/classification, habitat management plans, geotechnical reports, other) under this Program, and other required reviews and approvals shall be paid to the County at the time of application in accordance with the Clallam County Consolidated Fee Schedule, CCC 5.100, in effect at that time.
Amend Draft SMP Section 10.3.6, Third Party Review, to provide for agency consultations on mitigation plan and special report submittals and clarify the right to appeal Administrative determinations to require a third party review at the cost of the Applicant as follows:

10.3.6 Third-party Review

1. The Administrator may consult with qualified local, state or federal agency with outside expertise and jurisdiction to review a submitted mitigation plan, critical area report, or other technical information provided by the project proponent to comply with this Program.

4.2. The Administrator shall determine when third-party review shall be required. Third-party review allows any technical studies or inventories provided by the project proponent to be reviewed by an independent third party, paid for by the project proponent, but hired by the Administrator. The Administrator shall require third party review when he/she determines that such review is necessary to adequately evaluate a proposal’s potential impacts and accordance with the relevant provisions of this Program. A qualified professional shall conduct third-party review. The project proponent may appeal the Administrative determination to require an independent third party review.

Comments on SMP Section 8.4: Regulations—Compensatory Mitigation Plan Contents

SMP Section 8.4 addresses the requirements for “compensatory mitigation plans” when such plans are required (see Section 8.3). The required contents of compensatory mitigation plans include baseline information, performance criteria, detailed construction plans, monitoring program, monitoring report, contingency plan, performance bonds, and other information. Compensatory mitigation is intended to replace, enhance, or provide substitute resources or environments for unavoidable adverse impacts to shoreline and critical area functions and values at the project level.

Below is a summary of comments and staff response/recommendation on the standards for the contents of compensatory mitigation plans under SMP Section 8.4.1:

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<th>Section</th>
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<th>Summary of Comment</th>
<th>Staff Response/Recommendation</th>
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| 8.4.1(a)  | Noxious Weed Board (B-1) | Request below revision and perhaps what measures will be taken to mitigate presence of invasive plants:  
  a. Baseline Information: A written assessment and accompanying maps of the following:  
     i. Impacted critical area including, at a minimum, existing wetland/stream acreage; vegetative, fauna and hydrologic characteristics; soil and substrate conditions; and topographic elevations.  
     ii. Mitigation site, if different from the impacted site, including at a minimum: existing acreage; vegetative, invasive plant inventory; faunal and hydrologic conditions; relationship within watershed and to existing water bodies; soil and substrate conditions; topographic elevations; existing and proposed adjacent site conditions; buffers; and ownership. | Support revisions. Recommend:  
  - Revise sub-part "(a)(ii)", as requested.  
  - Amend sub-part "(c)" as follows:  
    c. Performance Standards: Specific and measureable criteria shall be provided for evaluating whether or not the goals and objectives of the mitigation plan are being achieved at various stages in the project and for beginning remedial action or contingency measures. Such criteria may include water quality standards, survival rates of planted vegetation, in-stream habitat conditions, species abundance and diversity targets, habitat diversity indices, measures for removal invasive plants, or other ecological, geological, or hydrological criteria. |
| 8.4.1(d) Pg. 8-6 | Noxious Weed Board (B-1) | Request below revision to require information about material sources, they may be weed contaminated or otherwise undesirable:

d. Detailed Construction Plans: Written specifications and descriptions of compensation techniques shall be provided, including the proposed construction sequence; grading and excavation details; erosion and sediment control features needed for construction and long-term operation; a planting plan specifying plant species, quantities, locations, size, spacing, and density; source of plant materials, propagules, or seeds, soil, mulch or material source; 

......

Recommend suggested revision to sub-part "(d)". |
| 8.4.1(e) Pg. 8-6 | Noxious Weed Board (B-1) | Request amend (or equivalent language) as follows:
e. Monitoring Program: A program outlining the approach for monitoring construction of the compensation project and for assessing a completed project shall be provided. Monitoring may include, but is not limited to:

i. Establishing vegetation plots to track plant establishment/survival, and changes in plant species composition and density, including invasive plant species and likelihood of persistence, over time;......

Recommend suggested revision to sub-part "(e)(i)". |
| 8.4.1(f) Pg. 8-7 | Quileute Tribe (A-1) | Concerns that this standard only requires that compensatory mitigation projects need only be monitored in most cases for a period of three years. Believes that meeting the no net loss standard and the other policy and legal requirements of the SMA and the SMP requires a more rigorous minimum monitoring regime and schedule to be established in SMP Regulation 8.4.1.f

As written, the standard requires a minimum of 3 years of monitoring and reporting, and for projects intended to establish forested conditions up to 15 years (minimum of 7 years). The Tribe recommends more than the proposed minimum 3 years, but did not specify how many more years. For comparison, Ecology's 2016 Wetland Guidance recommends minimum monitoring of 5 years, and 10-years or more for restoration of scrub-shrub and forested vegetative communities.

Recommend the following revisions:
f. Monitoring and Reporting: Following construction, a monitoring report shall be submitted annually, at a minimum, documenting milestones, successes, problems, and contingency actions of the compensation project. The compensation project shall be monitored for a period necessary to establish that performance standards have been met, but not for a period less than three (3) years, five (5) years. Mitigation projects that are intended to establish forested conditions (e.g., forested wetland or forested riparian area) shall be monitored for up to fifteen (15) years.
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<td>8.4.1(h)</td>
<td>Quileute Tribe (A-1)</td>
<td>See above related comment on duration of monitoring. Concerned also that this standard allows portions of mitigation performance bonds may be released at specific performance milestones without any express requirement that such milestones be measured after the minimum three year monitoring milestone. Believes that bonding requirements in sub-part (h) be directly tied to a more rigorous minimum monitoring regime in sub-part (f) and that no portion of the bond may be released until after the minimum monitoring period has been complied with, at the least.</td>
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Recommend the following revisions:

h. Performance Bonds and Demonstration of Competence: A demonstration of financial resources, administrative, supervisory, and technical competence and scientific expertise of sufficient standing to successfully execute the compensation project shall be provided. A compensation project manager shall be named, and the qualifications of each team member involved in preparing the mitigation plan and implementing and supervising the project shall be provided, including educational background and areas of expertise, training and experience with comparable projects. In addition, bonds ensuring fulfillment of the compensation project, monitoring program, and any contingency measures shall be posted in the amount of one hundred and fifty percent (150%) of the expected cost of compensation. The bond shall be held until monitoring indicates that the performance standards have been achieved and the site is fulfilling its intended goals as defined in the mitigation plan. The Administrator may release portions of the bond at specific performance milestones provided the site is meeting the milestone objectives set forth in the approved mitigation plan and provided that sufficient funds to complete the monitoring remain. Administration costs incurred by Clallam County that are associated with bond administration and/or enforcement shall be paid for by the applicant."

*If the mitigation objectives are not obtained within the minimum monitoring period, the applicant and/or proponent remains responsible for mitigation of ecological functions until the mitigation goals and objectives agreed to in the mitigation plan are achieved.*
OTHER PUBLIC COMMENTS RELATED TO SMP CHAPTER 8

Below is a summary of other comments received by the Board on Draft SMP no net loss of ecological functions and mitigation requirements. A staff response/recommendation to the comment is also provided. Refer also to the background sections of this staff report and Attachments A and B.

<table>
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<td>Quileute Tribe (A-1)</td>
<td>Regulation 8.3.1 of the Draft SMP requires that:</td>
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<td>&quot;Proponents of new shoreline use and development shall employ measures to mitigate</td>
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<td>unavoidable adverse impacts to ensure no net loss of shoreline ecological functions</td>
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<td>and to sustain shoreline ecosystem processes. Required mitigation shall not exceed</td>
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<td>a level necessary to assure that proposed uses or development will result in a no</td>
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<td>net loss of shoreline ecological functions.&quot;</td>
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<td>&quot;Regulation 8.3.1 is unequivocal, makes no exceptions for specific types of use or</td>
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<td>development. The Quileute Tribe strongly supports the inclusion of Regulation 8.3.1</td>
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<td>in the final SMP...&quot;</td>
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<td>&quot;The drafting problem the Tribe has identified is that the various sections of</td>
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<td>Chapters 3, 4 and 5 make inconsistent cross-references to the requirements of</td>
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<td>Section 8.3. Many sections express a Chapter 8 by cross-reference. &quot;...However,</td>
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<td>sections of the draft SMP addressing some of the most harmful activities do not</td>
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<td>cross-reference Chapter 8 or do so in a way that could cause confusion as to</td>
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<td>whether the no net loss standard applies...&quot;</td>
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<td>&quot;As the County’s own No Net Loss Report firmly establishes, the no net loss</td>
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<td>standard will only be met if the County requires that each and every development</td>
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<td>project and use achieve no net loss through the mitigation sequence, including the</td>
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<td>provision of compensatory mitigation. The Quileute Tribe believes that the</td>
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<td>language of regulation 3.12.2.(5) regarding utilities presents the clearest,</td>
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<td>simplest, and most accurate statement in the draft SMP concerning this no net</td>
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<td>loss requirement. We therefore recommend that chapters 3, 4, and 5 each begin</td>
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<td>with the statement that this standard applies to each use or development addressed</td>
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<td>in that chapter. Thus, we recommend chapters 3, 4 and 5 should each begin with</td>
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<td>the statement that:</td>
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<td>Notwithstanding any other statement or omission in this chapter, each use and</td>
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<td>development described in this chapter, and the construction, operation and</td>
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<td>maintenance of any facilities associated therewith, shall not cause a net loss</td>
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<td>of shoreline ecological functions or processes or adversely impact other</td>
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<td>shoreline resources and values. The proponent shall provide compensatory</td>
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<td>mitigation for any unavoidable impacts to the shoreline environment in</td>
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<td>accordance with Section 8.3 of this Program.</td>
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<td>Absent the addition of this language at the beginning of each of these chapters,</td>
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<td>language of this nature should at the very least be added to Sections 3.5 and 4.6.</td>
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Staff Response and Recommendation: This concern appears already covered in the statement in the note at the beginning of Chapter 8 that reads as follows:

"Note: The policies and regulations in this section provide a framework for ensuring that impacts of shoreline use and development are mitigated to achieve no net loss. State rules in WAC 173-26-186(8) state: "Local master programs shall include regulations and mitigation standards ensuring that each permitted development will not cause a net loss of ecological functions of the shoreline… local government shall design and implement such regulations and mitigation standards in a manner consistent with all relevant constitutional and other legal limitations on the regulation of private property." It is important to note that the policies and regulations of the Program as a whole are structured to help achieve the no net loss requirement. This section outlines actions that apply to individual development projects. The County has prepared a draft shoreline restoration plan that will also help improve ecological functions such that there is a net gain overall. The County has also prepared a draft approach and strategy (see Exhibit B) to track the effects of shoreline development on a programmatic scale to ensure that the no net loss requirement is met." [Draft SMP (September 2017), Chapter 8 (page 8-1)]
The referenced SMP provision 3.12.2.(5) under utility general regulations standard that the Tribe supports to draft their recommended statement to add to SMP Chapters 3, 4 and 5 reads as follows:

"The construction, operation and maintenance of utilities shall not cause a net loss of shoreline ecological functions or processes or adversely impact other shoreline resources and values. The proponent shall provide compensatory mitigation for any unavoidable impacts to the shoreline environment in accordance with Section 8.3 of this Program." (Draft SMP Section 3.12.2.(5))

Standards of the SMP are intended as a whole to prevent NNL combined with restoration efforts. For example, residential development is a permitted use (conditional use in Natural designation). Where such residential development complies with all applicable regulations (e.g., buffers) the residential use within the shoreline jurisdiction would not result in a net loss of ecological functions at the project level and compensatory mitigation would not be required.

Although addressed in Chapter 8 and in other locations of the SMP, staff supports making the no net loss requirement more explicit in the SMP. However, we do not believe it needs to be repeated in multiple sections, but would recommend add the following statement upfront in the SMP document under SMP Section 1.13, Governing Principles, as a new provision as follows:

8. Unless expressly stated to the contrary, each use and development described in this chapter, and the construction, operation and maintenance of any facilities associated therewith, shall not cause a net loss of shoreline ecological functions or processes or adversely impact other shoreline resources and values. The proponent shall provide compensatory mitigation for any unavoidable adverse impacts to the shoreline environment in accordance with Section 8.3 of this Program.

The inclusion of the “unless expressly stated to the contrary” in the above draft standard is recommended because as directed under the Shoreline Management Act, RCW 90.58 RCW and SMP Guidelines, WAC 173-26, the proposed Draft SMP plans for and accommodates new shoreline uses and development within the shoreline jurisdiction consistent with the proposed shoreline environmental designations (SED), policies and regulations of the SMP. In some cases, certain type of permitted uses (e.g., boat launch) can result in unavoidable adverse impacts after all appropriate avoidance and minimization measures have been implemented for an otherwise permitted use. See also SMP Chapter 11 definitions of “adverse impact” and “unavoidable” as well as definitions for related supporting terms “substantially degrade”, “no net loss” and ecological functions.

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<tr>
<th>Commenter</th>
<th>Summary of Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PABA (C-5) &amp;</td>
<td>Ecology guidance in the Washington Administrative Code regarding “No Net Loss of</td>
</tr>
<tr>
<td>Endorsed by</td>
<td>Ecological Function’ is administrative in nature. The term has not been defined in</td>
</tr>
<tr>
<td>Sequim Assoc.</td>
<td>by the Washington State Legislature. To our knowledge, this term has yet been</td>
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<tr>
<td>of Realtors (C-7);</td>
<td>adjudicated either in the State court system or in a Pollution Control Hearings</td>
</tr>
<tr>
<td>Gilles (E-5)</td>
<td>Board action. To prevent needless court challenges to Clallam’s future SMP, a prudent,</td>
</tr>
<tr>
<td></td>
<td>cautious approach should be taken in applying Ecology guidance limiting future</td>
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<tr>
<td></td>
<td>loss of ‘ecological function’ to the County’s SMP. For example, what is a shoreline</td>
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<tr>
<td></td>
<td>“ecosystem” – where does it start and stop on County shorelines, and what does an</td>
</tr>
<tr>
<td></td>
<td>“ecosystem” contain? We have not seen a good explanation of what this term means and</td>
</tr>
<tr>
<td></td>
<td>what the impact of applying it to Clallam County is.</td>
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</tbody>
</table>

**Staff Response:** The Shoreline Management Act (SMA), RCW 90.58, directed the Department of Ecology to adopt guidelines to implement the Act. RCW 90.58.060. These adopted state SMP Guidelines under WAC 173-26 translate the broad policies and elements of the SMA into standards for SMPs. The Guidelines are minimum standards for SMPs, not just suggestions. The Guidelines are “guiding parameters, standards, and review criteria for SMPs.” WAC 173-26-171(3)(a).

A local governments new or amended SMP and, Ecology’s state approval of such SMPs, must be based on consistency with the SMA and the Guidelines [RCW 90.58.030(3)(b), RCW 90.58.080(1), and
RCW 90.58.090 (3)]. The Guidelines are also the standards and criteria used by the state hearings boards in adjudicating appeals of SMPs. Ecology's major update to the SMP Guidelines in 2003 was preceded by a lengthy update process and appeals. Parties to the appeal (58 in all) including trade, environmental and government groups statewide endorsed the current Guidelines.

The terms "ecological functions or shoreline functions", "ecosystem processes" and "no net loss", are defined in Draft SMP Chapter 11 (see Definitions 11.102, 11.104, and 11.215).

Clallam County shoreline conditions and ecological processes are described in the County's 2012 Shoreline Inventory and Characterization Reports (ICRs) prepared for WRIA 17, 18 and 19 and WRIA 20. In addition, conditions and relevant ecological processes in terms of specific shoreline functions are addressed in the County's Final Cumulative Impacts Analysis and No Net Loss (CIANNL) Report (June 2017) for the proposed SMP.

The background section above in this staff report and Attachment B provide additional information on the "no net loss of shoreline ecological functions" standard.

<table>
<thead>
<tr>
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</table>
| PABA (C-5) & Endorsed by Sequim Assoc. of Realtors (C-7); Gilles (E-5) | The "no net loss of ecological functions" concept is stated as one of the "Governing Principles" of the State Guidelines (in the Washington Administrative Code but not the RCW), WAC of RCW 90.58.020, for example, priority for single family uses and recreational moorage. The mitigation sequence can stop at the "minimize" step without mitigation for the impacts that could not be minimized. Under the State Environmental Policy Act ("SEPA") a declaration of non-significance can be issued for non-material impacts. Requested changes:  
- Consider "no net loss of ecological functions" on an aggregate basis for the County shoreline as a whole and require such net loss to be material before an applicant is required to mitigate.  
- Establish a clear recognition that minimizing impacts to ecological functions is all an applicant is required to do if there is no material net loss for the County shoreline as a whole.  
- Ensure that the SMP requirements are not more onerous on the applicant than those currently existing under SEPA. |

Staff Response: No change recommended. The SMP is intended as a whole to prevent no net loss of ecological functions. For example, a new single-family home within the shoreline jurisdiction located and developed consistent with applicable shoreline development standards (e.g., buffers) of the SMP would be determined as not resulting in a net loss of ecological functions.

The SMP must include regulations and mitigation standards ensuring that each permitted development will not cause a net loss of ecological functions. WAC 173-26-186 (8)(b). This includes requiring individual uses and developments to analyze environmental impacts of the proposal and include measures to mitigate impacts not otherwise avoided or mitigated by compliance with the SMP and other applicable regulations. WAC 173-26-201(2)(e)(i).

In terms of mitigation sequencing, avoiding and minimizing impacts are the first priorities. However, stopping the analysis of environmental impacts for all projects at "minimizing impacts" would not be consistent with WAC 173-26-201(2)(e) and would result in the County not meeting the state policy under RCW 90.58.020 of the state Shoreline Management Act. The mitigation sequence in Draft SMP Regulation 8.3.(2) is consistent with the state SMP Guidelines (WAC 173-26-201(2)(e)) and also with the definition of mitigation under state SEPA Rules (WAC 197-11-768). In addition, the County currently applies a similar mitigation sequence under its existing Critical Area Code (see CCC 27.12.840).

Not all shoreline projects require SEPA. Shoreline uses and development that are also subject to SEPA will be reviewed consistent with SEPA requirements for review of environmental impact mitigation. In such cases, the SEPA rules define and apply mitigation sequencing equivalent to what is proposed in
Draft SMP under Section 8.3.(2) and SMP Definition 11.203. Compliance with the County's SMP, critical areas, and other regulations (e.g., zoning) regulations address environmental impacts and compliance with such development standards may be sufficient to obtaining a SEPA determination of non-significance (i.e., no probable significant impacts).

Draft SMP Regulation 8.3.(3) establishes criteria when compensatory mitigation is required that includes "measurable damage." Also, the SMP Definition 11.215, No Net Loss (NNL), defines NNL to mean "the maintenance of the aggregate total of the County shoreline ecological functions over time."

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| Sequim Assoc. of Realtors (C-7); Gilles (E-5) | "The concept of "No Net Loss" is proposed to be measured against a county-wide 2012 baseline. How then, does the Administrator measure mitigation measures that occur in the vicinity of the impact? We believe the whole concept of "No Net Loss" is not clearly defined or stated and will be unenforceable. This places extreme liability not only on property owners but also on county government. At that point, the county will require additional employees to become so thoroughly educated and informed on the regulation as to be able to "interpret" the regulations. Furthermore, "interpretation" opens the county to litigation by property owners that might easily entertain a distinctly different "interpretation.""

**Staff Response:** The SMP defines "no net loss (NNL)" in Chapter 11 (see Definition 11.215). Draft SMP Policy 8.2.(3) establishes measurable environmental indicators for the County to monitor and track gains and losses and compare to the 2012 baseline conditions inventoried and characterized in the County's inventory and characterization Reports (ICR).

Exhibit B of the Draft SMP contains a shoreline development tracking checklist to use while administering the Draft SMP. The checklist is intended to allow the County to consider the effects of development proposal on specific functions, record information pertaining to the selected indicators of function and show compliance with SMP standards. The goal is that by using the checklist the County can monitor their decision-making and provide transparency with respect to meeting the NNL standard.

<table>
<thead>
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<th>Staff Response</th>
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<tbody>
<tr>
<td>Sequim Assoc. of Realtors (C-7); Gilles (E-5)</td>
<td>Commented in response to the following SMP Comment received from the U.S. Department of Interior Fish and Wildlife Service (USFWS) dated February 24, 2015: &quot;Unlike many other areas around Puget Sound, Clallam County has many pristine aquatic areas and shorelines that are in great condition or have been restored, and provide many benefits to the people and wildlife in the area. Recognizing this fact, we suggest the SMP follow a higher standard than is required by the Shoreline Management Act’s minimum protection requirement&quot;. (USFWS, Feb. 24, 2015) We believe that to follow a higher standard flies in the face of the Administrative Procedures Act that requires ecological rules adopt the Least Burdensome Alternative that achieve stated goals and objectives.</td>
<td>These comments are in relation to the noted comment by USFWS, which is not a policy or regulation of the Draft SMP. The Draft SMP thru the proposed shoreline environmental designations, policies and regulations allows for shoreline use and development.</td>
</tr>
<tr>
<td>Clark (E-2); Hewett (E-7); Hewett (E-8i)</td>
<td>Oppose draft SMP. Also, commented in relation to the USFWS SMP Comment noted above as follows: &quot;Why do you need more and additional regulations (e.g., an update) unless you are going for a higher; untouched by human hand. Is that where the EPA wants to take this eventually? Just setback the properties until they are no more? Restrict them until they have no human use? One foot at a time.... Why not celebrate the &quot;Pristine&quot; nature of the shoreline and the caretakers of the land. Isn't this the very definition of man and the biosphere? Isn't this the standard we are looking for and already have with the existing SMP and existing Evidence?....&quot;</td>
<td>-</td>
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ATTACHMENT A

Excerpts from Washington State Shoreline Master Program Guidelines, WAC 173-26-186, Governing Principles of the Guidelines, Specifically Addressing No Net Loss:

“(8) Through numerous references to and emphasis on the maintenance, protection, restoration, and preservation of "fragile" shoreline "natural resources," "public health," "the land and its vegetation and wildlife," "the waters and their aquatic life," "ecology," and "environment," the act makes protection of the shoreline environment an essential statewide policy goal consistent with the other policy goals of the act. It is recognized that shoreline ecological functions may be impaired not only by shoreline development subject to the substantial development permit requirement of the act but also by past actions, unregulated activities, and development that is exempt from the act's permit requirements. The principle regarding protecting shoreline ecological systems is accomplished by these guidelines in several ways, and in the context of related principles. These include:

(a) Local government is guided in its review and amendment of local master programs so that it uses a process that identifies, inventories, and ensures meaningful understanding of current and potential ecological functions provided by affected shorelines.

(b) Local master programs shall include policies and regulations designed to achieve no net loss of those ecological functions.

(i) Local master programs shall include regulations and mitigation standards ensuring that each permitted development will not cause a net loss of ecological functions of the shoreline; local government shall design and implement such regulations and mitigation standards in a manner consistent with all relevant constitutional and other legal limitations on the regulation of private property.

(ii) Local master programs shall include regulations ensuring that exempt development in the aggregate will not cause a net loss of ecological functions of the shoreline.

(c) For counties and cities containing any shorelines with impaired ecological functions, master programs shall include goals and policies that provide for restoration of such impaired ecological functions. These master program provisions shall identify existing policies and programs that contribute to planned restoration goals and identify any additional policies and programs that local government will implement to achieve its goals. These master program elements regarding restoration should make real and meaningful use of established or funded nonregulatory policies and programs that contribute to restoration of ecological functions, and should appropriately consider the direct or indirect effects of other regulatory or nonregulatory programs under other local, state, and federal laws, as well as any restoration effects that may flow indirectly from shoreline development regulations and mitigation standards.

(d) Local master programs shall evaluate and consider cumulative impacts of reasonably foreseeable future development on shoreline ecological functions and other shoreline functions fostered by the policy goals of the act. To ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts among development opportunities. Evaluation of such cumulative impacts should consider:

(i) Current circumstances affecting the shorelines and relevant natural processes;

(ii) Reasonably foreseeable future development and use of the shoreline; and

(iii) Beneficial effects of any established regulatory programs under other local, state, and federal laws.

It is recognized that methods of determining reasonably foreseeable future development may vary according to local circumstances, including demographic and economic characteristics and the nature and extent of local shorelines.

(e) The guidelines are not intended to limit the use of regulatory incentives, voluntary modification of development proposals, and voluntary mitigation measures that are designed to restore as well as protect shoreline ecological functions.”
ATTACHMENT B

Chapter 4, No Net Loss of Shoreline Ecological Functions, Taken from Department of Ecology SMP Handbook (Publication # 11-06-010)
Chapter 4
No Net Loss of Shoreline Ecological Functions

All phases
Shoreline Master Program Planning Process

Introduction

The Shoreline Management Act (SMA) provides a broad policy framework for protecting the natural resources and ecology of the shoreline environment. The SMP Guidelines establish the standard of "no net loss" of shoreline ecological functions as the means of implementing that framework through shoreline master programs. WAC 173-26-186(8) directs that master programs “include policies and regulations designed to achieve no net loss of those ecological functions.” (The specific sections of the Guidelines addressing the NNL requirement are included at the end of this chapter.)

The SMP Guidelines, adopted in 2003, constitute the first actual rule (WAC) in Washington State to incorporate the no net loss requirement. The concept of no net loss in this State originated with earlier efforts to protect wetlands. In 1989, Governor Booth Gardner signed an Executive Order establishing a statewide goal regarding wetlands protection. "It is the interim goal...to achieve no overall net loss in acreage and function of Washington's remaining wetlands base. It is further the long-term goal to increase the quantity and quality of Washington's wetlands resource base." (E.O. 89-10).

What does no net loss mean?

Over time, the existing condition of shoreline ecological functions should remain the same as the SMP is implemented. Simply stated, the no net loss standard is designed to halt the introduction of new impacts to shoreline ecological functions resulting from new development. Both protection and restoration are needed to achieve no net loss. Restoration activities also may result in improvements to shoreline ecological functions over time.

Local governments must achieve this standard through both the SMP planning process and by appropriately regulating individual developments as they are proposed in the future. No net loss
should be achieved over time by establishing environment designations, implementing SMP policies and regulations that protect the shoreline, and restoring sections of the shoreline. Based on past practice, current science tells us that most, if not all, shoreline development produces some impact to ecological functions. However, the recognition that future development will occur is basic to the no net loss standard. The challenge is in maintaining shoreline ecological functions while allowing appropriate new development, ensuring adequate land for preferred shoreline uses and public access. With due diligence, local governments can properly locate and design development projects and require conditions to avoid or minimize impacts.

No net loss incorporates the following concepts:

- The existing condition of shoreline ecological functions should not deteriorate due to permitted development. The existing condition or baseline is documented in the shoreline inventory and characterization. (See Chapter 7.) Shoreline functions may improve through shoreline restoration.
- New adverse impacts to the shoreline environment that result from planned development should be avoided. When this is not possible, impacts should be minimized through mitigation sequencing.
- Mitigation for development projects alone cannot prevent all cumulative adverse impacts to the shoreline environment, so restoration is also needed.

**Practices that help achieve no net loss**

The following SMP update practices will help to meet the no net loss requirement:

- **Locate, design and mitigate development within a watershed context.** During the SMP update process, use the characterization of ecosystem processes and functions to identify the best areas for future development and mitigation. The characterization can provide important information regarding areas that have a high potential for restoration and can be used for offsite mitigation. Such an approach can use a combination of onsite and offsite mitigation that helps restore critical processes and generates a greater "lift" in ecosystem functions.
- **Prohibit uses** that are not water-dependent or preferred shoreline uses. For example, office and multi-family housing buildings are not water-dependent or preferred uses. There is no requirement to provide a place for all types of uses within shoreline jurisdiction.
- **Require that all future shoreline development**, including water-dependent and preferred uses, is carried out in a manner that limits future degradation of the shoreline environment. No uses or activities, including preferred uses, are exempt from the requirement to protect shoreline ecological functions.
- **Require buffers and setbacks.** Vegetated buffers and building setbacks from those buffers reduce the impacts of development on the shoreline environment.
- **Establish appropriate shoreline environment designations.** The environment designations must reflect the inventory and characterization. A shoreline landscape that is relatively unaltered should be designated Natural and protected from any use that would
degrade the natural character of the shoreline. (In practice, this would avoid future impacts, the first objective of no net loss.) New shoreline development in such environs is limited, resulting in avoidance of new impacts.)

- **Establish strong policies and regulations.** Policies and regulations will define what type of development can occur in each shoreline environment designation, determine the level of review required through the type of shoreline permit, and set up mitigation measures and restoration requirements.

- **Develop policies and requirements for restoration.** These should be consistent with the shoreline restoration plan prepared during the SMP planning process.

- **Recommend actions outside shoreline jurisdiction.** The master program or an SMP supporting document can recommend actions for properties that are outside shoreline jurisdiction but have impacts on shorelands. For example, the SMP could call for improved stormwater treatment of runoff from roads, or replacement of septic systems with sewers. Recommending these actions could help create awareness of problems and provide support for them, although outside the authority of the SMP. Such recommendations could be included in the shoreline management strategy or in a brief chapter within the SMP. This would also satisfy the SMA adjacent lands policy (RCW 90-58.340) that local governments are obligated to meet.

- **In all cases, require mitigation sequencing.** The SMP must include regulations that require developers to follow mitigation sequencing: avoid impacts, minimize impacts, rectify impacts, reduce impacts over time, compensate for impacts, monitor impacts and take corrective measures. Avoiding impacts means not taking an action or part of an action in order to prevent impacts to ecological functions. Impacts can be avoided in many different ways: structures may be sited further from properly functioning shoreline areas; different landscaping plants or techniques may be used; a less impactful use may be substituted; or a proposal may be redesigned altogether.

### How to demonstrate no net loss

Local governments demonstrate no net loss at two levels -- through the comprehensive SMP update planning process and over time, during the project review and permitting processes (in other words, during SMP implementation).

### No net loss in the SMP planning process

The following graphic provides a visual description of the role of the SMP update in achieving no net loss. Through mitigation and restoration, a jurisdiction would achieve no net loss of shoreline ecological functions.
SMP updates: Achieving no net loss of ecological function

Local governments show that their updated SMP will result in no net loss of ecological function by completing several tasks in the comprehensive SMP update process, including:

- **Shoreline inventory and characterization.** The shoreline inventory documents shoreline baseline conditions and the characterization analyzes shoreline functions and processes. (See SMP Handbook Chapter 7.)
- **Shoreline use analysis.** The use analysis estimates the future demand for shoreline space and potential use conflicts over a minimum 20-year planning period and projects future trends.
- **Shoreline management recommendations.** Management recommendations translate the inventory and characterization findings into SMP policies, regulations, environment designations and protection strategies for each shoreline planning unit.
- **Restoration plan.** The restoration plan includes restoration opportunities, priorities and timelines for shoreline restoration.
- **Cumulative impacts analysis.** This analysis assesses the cumulative impacts on shoreline ecological functions from “reasonably foreseeable future development” allowed by the SMP, considering at a minimum habitat, hydrology and water quality functions.
Analyzing cumulative impacts is necessary to identify and compensate for the total predictable, incremental effects on shoreline functions after applying mitigation measures and restoration.

- **No net loss summary.** This narrative provides an overall picture of how the jurisdiction will meet the NNL requirement. This “executive summary” will explain how information from the supporting documents listed above was applied in developing and revising policies and regulations within the updated SMP. The summary should compare the conclusions of the supporting documents with the environment designations and use regulations to demonstrate how these provisions avoid, reduce, and mitigate reasonably foreseeable impacts in order to achieve NNL. This summary should provide a general chronology of the update while providing reference to the specific chronology captured in the SMP checklist. The purpose of this summary and other supporting documents is to ensure that the SMP environment designations, policies, regulations and shoreline restoration plan are based on the findings of the inventory and characterization and the cumulative impacts analysis and will achieve NNL. Documentation of this information will also provide a record of the jurisdiction’s decisions on SMP policies and regulations in relation to NNL.

To approve a comprehensive SMP update, Ecology’s Director must formally conclude that the proposed SMP, when implemented over its planning horizon, typically 20 years, will result in “no net loss of ecological functions necessary to sustain shoreline natural resources.” This conclusion will be based upon the documents listed above, a completed SMP submittal checklist and supporting map portfolio.

**No net loss in the permit process**

When the SMP goes into effect, careful and thorough implementation will be necessary to achieve no net loss. For example, if the SMP prohibits office buildings and condominiums in the Conservancy environment, then your jurisdiction should not approve these uses in that environment. The cumulative impacts analysis would have shown that no net loss would be achieved if office buildings and condominiums are prohibited in the Conservancy environment. Allowing offices and condominiums under this scenario would result in a loss of shoreline functions.

When implementing the updated SMP, no net loss principles (first avoiding, then minimizing and compensating for ecological impacts) are applied again as individual shoreline project applications are reviewed and approved, conditioned, or denied. The following graphic demonstrates how the no net loss requirement is partially achieved during the permit process.
Achieving no net loss of ecological functions at the project level

1. Unavoidable impacts from development projects

2. Mitigation: onsite, offsite & advance

3. Compliance strategy

No Net Loss – Current Baseline

SMP Restoration Plan

Net Gain Restoration

Higher

Non-Regulatory

Lower

Regulatory

Implementation Over Time

Key:

More Degraded

More Improved

1. Impacts from shoreline development projects, after mitigation and restoration measures. SMP should encourage appropriate use of innovative measures such as clustering, TDRs, site specific BMPs, etc. to reduce impacts.

2. On-site, off-site and advance mitigation. SMPS should lay out the conditions when off-site mitigation will be allowed or preferred. Innovative techniques such as wetland banking (advance mitigation) should be addressed in SMPS. SMP restoration plans should help identify priority sites and types of sites for the most effective off-site restoration activities.

3. A compliance strategy should include a mechanism to document project review actions and a method to periodically evaluate the cumulative effects of authorized shoreline development. The compliance strategy should include inspection of development projects, and identify priorities for enforcement to improve protection of the most significant shoreline features and functions.

Figure 4-2: SMPS must include regulations that require developers to follow mitigation sequencing. Restoration will also be needed in order to achieve no net loss.

During the planning process, incomplete information about a potential future development and its impacts limits your ability to address no net loss. To close this information gap, unanticipated development impacts are identified through more detailed, site-specific information received at the permit review level.

Project review completes the Guidelines’ combined planning and permit review framework for achieving no net loss. It assures that unanticipated impacts will still be subject to a cumulative impacts evaluation as applications for shoreline exemptions, conditional uses, and shoreline permits are reviewed.

One way to comply with the SMP Guidelines requirement is to apply an established mitigation sequence such as that in the State

WAC 173-26-201(3)(d)(iii): For development projects that may have unanticipatable or uncommon impacts that cannot be reasonably identified at the time of master program development, the master program policies and regulations should use the permitting or conditional use permitting processes to ensure that all impacts are addressed and that there is no net loss of ecological function of the shoreline after mitigation.
Environmental Policy Act (SEPA - WAC 197-11-768) on a case-by-case basis during project review.

Another way is through a conditional use permit (CUP). CUPs are automatically required for unanticipated types of development ("unclassified" uses). The SMP also may require CUPS for developments in which the impacts cannot be fully known at the planning level. Through the CUP review process, "consideration shall be given to the cumulative impact of additional requests for like actions in the area" [WAC 173-27-160(2)].

Potential no net loss indicators

Local planners working on SMP updates have asked for a tool to measure no net loss. In response, Ecology staff scientists and planners, with input from several state agencies and local governments, developed a list of potential No Net Loss indicators for Shoreline Master Programs (Table 4-1, below). This table of indicators can be used by local governments to help track the status of shoreline functions. Tracking several indicators can help to meet the "no net loss" of shoreline ecological functions standard of the SMP Guidelines.

The table shows 15 potential indicators and the type of measurement for each, such as acres, linear feet, number, percent cover, etc. The table shows the shoreline functions – water quality, water quantity and habitat – that are affected by the indicator, as well as specific impairments related to the indicator. Other columns include limitations for using the indicators, where the indicators are best used, and the availability of data. The indicators are limited to the area within shoreline jurisdiction where SMP regulations are implemented.

Measuring and continuing to track these indicators can give you a picture of shoreline conditions and ecological functions. The indicators can be measured to track loss or gain. For example, the length of shoreline stabilization may increase or decrease, or the acreage of riparian vegetation may increase or decrease. As conditions change over time, you may need to make changes to your SMP if tracking the indicators shows that your community is not achieving "no net loss" of shoreline ecological functions.

Figure 4-3: The linear length or area of bulkheads may be used as an indicator of no net loss of shoreline ecological functions. Photo by Hugh Shipman.
### TABLE 4-1: POTENTIAL NO NET LOSS INDICATORS for SHORELINE MASTER PROGRAMS

<table>
<thead>
<tr>
<th>Indicator (all in shoreline jurisdiction)</th>
<th>Functions affected – key categories – water quality, water quantity and habitat</th>
<th>Type of Impairment**</th>
<th>Limitations of indicator</th>
<th>Where</th>
<th>Is data available or reasonable to obtain</th>
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<tbody>
<tr>
<td>Forest cover: Acres converted from forest land to other land uses.</td>
<td>Water quality-sediment, nutrients &amp; toxic filtration, conversion, and/or retention; temperature regulation. Water quantity-flow regulation. Habitat-structure for habitat life needs; input of organics &amp; LWM*.</td>
<td>Reduces forest buffers and decreases filtering, conversion, and/or retention of pollutants from surface &amp; subsurface flow; increases quantity of pollutants to aquatic habitats. Alters the delivery and timing of water to aquatic areas; increasing quantity of water delivered to aquatic habitats during high and low flows, which affects habitat structures. Increases water temperature. Loss of nesting sites, rearing, refuge &amp; foraging areas.</td>
<td>Doesn't identify future land use. May be difficult to determine acres in shoreline jurisdiction without finer scale analysis.</td>
<td>Rural.***</td>
<td>Details of application available from DNR and local government. Class IV forest practice applications. CCAP data.</td>
</tr>
<tr>
<td>Shoreline stabilization: Length or area of bulkheads, revetments, bioengineering, seawalls, groins, retaining walls.</td>
<td>Habitat-Riparian and aquatic habitat, sediment supply. Input of organics, prey base, &amp; LWM. Structure for habitat life needs.</td>
<td>Interrupts habitat-forming processes, such as beaches &amp; channel migration, by impacting sediment supply and transport. Loss of nesting sites, rearing, refuge &amp; foraging areas. Loss of prey base with</td>
<td>Combines different types of stabilization measures into one general category; impacts may vary.</td>
<td>Rural, urban.</td>
<td>Is data available from local government, including permits &amp; SDP exempt projects? Can locals track over time? HPA information can supplement other data, but is not sufficient on</td>
</tr>
<tr>
<td>Indicator (all in shoreline jurisdiction)</td>
<td>Functions affected - key categories - water quality, water quantity and habitat</td>
<td>Type of Impairment**</td>
<td>Limitations of indicator</td>
<td>Where</td>
<td>Is data available or reasonable to obtain</td>
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<td>gabion (Includes decrease in length, change to soft structure)</td>
<td>associating loss of riparian vegetation.</td>
<td></td>
<td></td>
<td>Rural, urban</td>
<td>its own. Detailed aerial photos may also show stabilization changes.</td>
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<tr>
<td>Marine &amp; freshwater riparian vegetation: Linear measurement of mature native riparian vegetation of a given width (buffer width) or percent cover of different vegetation classes.</td>
<td>Water quality - sediment, phosphorus &amp; toxic filtration, conversion, and/or retention; temperature regulation; water quantity - flow regulation. Habitat - input of organics, prey base, &amp; LWM. Structure for habitat life needs.</td>
<td>Removes capacity of riparian vegetation to filter surface flows, sediment, phosphorus and toxics; subsurface removal or conversion of nitrogen, pathogens. Increases overland and subsurface flows. Increases water temperature. Reduces prey base. Loss of LWM that provides instream structure. Loss of nesting sites, rearing, refuge &amp; foraging areas.</td>
<td>No permit, no record of change. Focused project needed to track. Useful only if a baseline exists. Methodology needs to be able to measure change. May be difficult to measure over short time frame.</td>
<td>Rural, urban</td>
<td>Can locals measure and track? Use sample areas, aerial photos. Puget Sound LIDAR consortium has some data.</td>
</tr>
<tr>
<td>Acres of permanently protected areas, with no or limited development: Public ownership, current use/PBRS, conservation</td>
<td>Water quality - sediment, phosphorus &amp; toxic filtration, conversion, and/or retention; temperature regulation; water quantity - flow regulation.</td>
<td>Loss of nesting sites, rearing, refuge &amp; foraging areas.</td>
<td>How measure degree of protection? Limit to protected areas with no development? Difficult to connect with specific functions.</td>
<td>Rural, urban</td>
<td>Need info on ownership, PBRS, easements. Other info available from county auditor and assessor? Land trusts, NRCS and state agencies are also</td>
</tr>
<tr>
<td>Indicator (all in shoreline jurisdiction)</td>
<td>Functions affected – key categories – water quality, water quantity and habitat</td>
<td>Type of Impairment**</td>
<td>Limitations of indicator</td>
<td>Where</td>
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<td>Easements, fee ownerships, NGOs,</td>
<td>Habitat - Riparian and aquatic habitat, sediment supply, input of organics, prey base, &amp; LWM. Structure for habitat life needs.</td>
<td>Habitat. Water quality-toxics.</td>
<td>Increase in predation, reduction in light and aquatic vegetation and simplification of food web.</td>
<td>Rural, urban.</td>
<td>Sources for permanently protected lands.</td>
</tr>
<tr>
<td>Piers/docks/floats, overwater structures: Number of structures, square footage of new and replacement, Or track grading, piling, construction materials,</td>
<td>Habitat. Water quality-toxics.</td>
<td>Habitat. Water quality-toxics.</td>
<td>Increase in predation, reduction in light and aquatic vegetation and simplification of food web.</td>
<td>Rural, urban.</td>
<td>Is data available from local government, including permits and SDP exempt projects? Can locals track over time? Use DNR data – number of and area over water. HPA information can supplement other data, but is not sufficient on its own. Good to monitor late spring/early summer.</td>
</tr>
<tr>
<td>Road lengths (feet) within 200 feet of water body,</td>
<td>Water quantity. Water quality. Habitat - connectivity.</td>
<td>Intercepts and changes timing of flows to aquatic habitat. Increases sediment and toxics.</td>
<td>Is there much new road development in shoreline jurisdiction?</td>
<td>Rural, urban.</td>
<td>Data available from DNR, local governments and WSDOT. CCAP data needs analysis to provide relevant information.</td>
</tr>
<tr>
<td>Number of road crossings of water bodies - bridges, culverts,</td>
<td>Habitat - Instream functions. Water quality.</td>
<td>Simplifies stream habitat structure, increases channel confinement and interrupts habitat forming processes.</td>
<td>Is there much new road development in shoreline jurisdiction? Distinguishing between fish friendly crossings</td>
<td>Rural, urban.</td>
<td>Culvert inventories vary in quality. WDFW has fish passage barrier data, but it is incomplete. Remote sensing data? SHIAPP</td>
</tr>
<tr>
<td>Indicator (all in shoreline jurisdiction)</td>
<td>Functions affected - key categories - water quality, water quantity and habitat</td>
<td>Type of Impairment**</td>
<td>Limitations of indicator</td>
<td>Where</td>
<td>Is data available or reasonable to obtain</td>
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<tr>
<td>Water quality: 303(d) list.</td>
<td>Water quality.</td>
<td>Impairment is specific to type of listed 303(d) issue (e.g. increased temperature, low dissolved oxygen, increased fecal coliform, heavy metals and toxic organics.)</td>
<td>How relate to functions? Some impacts from outside shoreline jurisdiction. Only impaired waters are listed &amp; measured; no WQ improvement project in place. No criteria to remove from list. Sampling methodology changes, not always comparable. Marine &amp; fresh water lists updated in alternating 2-year cycles. Some impacts from outside shoreline jurisdiction and municipality. Emergency closures updated regularly. Uneven data. Changes may be too frequent for NNL purposes. Limited to</td>
<td>Rural, urban.</td>
<td>Accessible data from Ecology. Is water body on or off list? In some cases, only a portion (e.g., reach) of a water body is listed. 303(d) - comprehensive, Dept of Health Shellfish Program.</td>
</tr>
<tr>
<td>Shellfish listings closures.</td>
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<tr>
<td>Indicator (all in shoreline jurisdiction)</td>
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<tr>
<td>Levees/dikes: Linear feet, floodplain area gained from levee setbacks.</td>
<td>Water quality - sediment removal, temperature regulation. Water quantity - water storage, flooding. Habitat - structure for habitat life needs (e.g., low LWM, stream bed aggradation, river mouth progradation).</td>
<td>Impairs natural flooding regime. Reduces floodplain sediment retention, denitrification and hyporheic functions. Decreases groundwater storage and base flows. Interferes with formation of habitat structure such as distributary channels in tidal and riparian and in-channel and off-channel habitat in freshwater settings. Removes habitat structure for nesting, rearing, refuge and foraging.</td>
<td>Can change in habitat quality as a result of levees/dikes be easily measured? Various types and locations of levees &amp; dikes are lumped together. Types of openings in levees and dikes vary: impacts may vary.</td>
<td>Rural, urban.</td>
<td>Measure increase/decrease in linear feet, quality of levees related to riparian vegetation &amp; slope. Is data from local governments or FEMA?</td>
</tr>
<tr>
<td>Floodplain area: Acres allowed to flood -tidal and river (lack of flood control and lack of other structures such as houses.)</td>
<td>Water quality - removal of toxics, sediment, phosphorus and pathogens through adsorption, filtration and retention. Removal of nitrogen through</td>
<td>Impairment similar to that for levees &amp; dikes with loss of floodplain from diking &amp; filling.</td>
<td>Availability of data, maintenance of data.</td>
<td>Rural, urban.</td>
<td>Do local governments measure this for shoreline inventory? FEMA floodplain info available.</td>
</tr>
<tr>
<td>Indicator (all in shoreline jurisdiction)</td>
<td>Functions affected - key categories - water quality, water quantity and habitat</td>
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<td>denitrification. Temperature regulation. Water quantity - water storage and flow regulation and reduction in downstream flooding. Habitat - formation of habitat structure from LWM, vegetation communities and sediment type/channel configuration that support habitat life needs. Input of organics and prey base.</td>
<td></td>
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<tr>
<td>Number of bald eagle &amp; osprey nests &amp; roosts &amp; Great blue heron rookeries.</td>
<td>Habitat - structure for habitat life needs.</td>
<td>Indicator of impaired habitat.</td>
<td>More suitable for counties than cities.</td>
<td>Rural.</td>
<td>WDFW data - most up-to-date for eagles.</td>
</tr>
<tr>
<td>Impervious surface area</td>
<td>Water quality - removal of toxics, sediment, phosphorous and</td>
<td>Reduces vegetative buffers and decreases filtering of</td>
<td>Covered by other indicators? Percentage increase in developed</td>
<td>Urban</td>
<td>Aerial photos or other remote sensing techniques show</td>
</tr>
<tr>
<td>Indicator (all in shoreline jurisdiction)</td>
<td>Functions affected - key categories - water quality, water quantity and habitat</td>
<td>Type of Impairment**</td>
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<tr>
<td>Wetlands acreage: Fill of natural wetlands and constructed or engineered wetlands. This includes nearshore tidal estuaries.</td>
<td>pathogen adsorption, filtration and retention. Removal of nitrogen through denitrification. Temperature regulation. Water quantity - water storage and flow regulation and reduction in downstream flooding. Habitat - formation of habitat structure from LWM, vegetation, communities and sediment type/channel configuration that support habitat life needs. Input of organics.</td>
<td>pollutants from surface &amp; subsurface flow. Alters the delivery and timing of water to aquatic areas, increasing quantity of water and pollutants delivered to aquatic habitats during high and low flows, which affects habitat structure. Increases water temperature. Reduces prey base (by associated removal of vegetation). Loss of nesting sites, rearing, refuge &amp; foraging areas.</td>
<td>Urban areas would be small and may not be useful indicator. Some land surface cover layers are inaccurate, e.g. showing impervious for clearcut forest.</td>
<td>Impervious cover. Local governments require new impervious information in permit applications.</td>
<td></td>
</tr>
<tr>
<td>Indicator (all in shoreline jurisdiction)</td>
<td>Functions affected - key categories - water quality, water quantity and habitat</td>
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<tr>
<td>Area of seagrasses, kelp, and emergent aquatic vegetation</td>
<td>Habitat - structure for habitat life needs, including food and shelter for many species.</td>
<td>Decreases in aquatic vegetation such as eelgrass and kelp results in loss of food and shelter for many species.</td>
<td>Multiple factors affect growth and sustainability of aquatic vegetation.</td>
<td>Aquatic</td>
<td>Seagrass, kelp and emergent aquatic vegetation data along shoreline available from DNR Shorezone, (1994-2000) More recent local data available at those sites that are among the stratified randomly sampled sites.</td>
</tr>
</tbody>
</table>

* LWM - Large Woody Material

** For some indicators, decreasing the length or area of the indicator would result in a benefit to shoreline functions (e.g., shoreline stabilization, piers & docks.) For other indicators, increasing the length or area of the indicator would result in a benefit to functions (e.g., forest cover, riparian vegetation.)

*** Rural includes rural residential, agricultural and forestry areas.

CCAP - Coastal Change Analysis Program  
NGO - Non-government organization  
PBR5 - Public Benefit Rating System  
NRCS - National Resource Conservation Service
Inventory provides baseline

A baseline of shoreline ecological conditions is necessary in order to use indicators. You need a starting point. Fortunately, the shoreline inventory and characterization provide the baseline for measuring no net loss. The best time to collect data related to the indicators is during the shoreline inventory.

Some local governments have completed their inventory, and don’t plan on collecting new data in the near future. Existing inventory data should provide good information for some of the indicators – impervious surfaces, levees and dikes, shoreline stabilization, floodplains, vegetation, overwater structures – as they are required as part of the inventory, to the extent that such information is available.

If you are working on the inventory now or will be in the future

Look at the indicators list. Consider what you now know about your shorelines. Are you aware of extensive riparian vegetation, a large number of eagle nests, water quality problems or limited shoreline armoring? Would these indicators be able to be counted as part of the inventory and tracked over time? What about other indicators? As you work on the inventory, keep the potential indicators in mind. If you find out there aren’t any eagle nests, they would not be a good indicator for your community. If you learn there are many feet of roads in shoreline jurisdiction, and there are also long-term plans to remove some road lengths, road length may be a good indicator. Keep in mind that data about the indicators needs to be available now and in the future.

If your inventory is complete

Look at the indicators list. Consider your shoreline conditions and the inventory information that you have available. Are several of the indicators on the list reflected in your inventory? Does your inventory include the amount of shoreline stabilization or overwater structures such as piers and docks (this information is commonly included in inventories.) If so, you can choose several indicators from the list. If Ecology’s potential indicators are not applicable to your shorelines, what inventory information could be useful as one or more indicators?

Selecting other indicators

If Ecology’s potential indicators are not appropriate for your shoreline, you may develop your own. Your local government may have data specific to your shorelines that could be useful for indicators. These indicators should be relevant to the regulatory authority that your local government has over factors that affect the indicators. If an upstream city’s activities have significant effects on water quality along your shoreline, then water quality is not an appropriate indicator to measure net loss or gain that can be attributed to your local government’s actions. When determining what indicators to use, consider the following criteria:

- Data are available, reliable and can be gathered in a consistent manner over time. Note that data may be specific for some areas and not available for other areas
within your jurisdiction. Example, current eelgrass data are available for some nearshore areas and not others.

- The data selected for measurement provide an indication of ecological function within shoreline jurisdiction.
- Indicators are relevant to implementation of local policies and regulations. The number of orcas that pass by offshore is not a reflection of your local SMP’s effectiveness, as orcas can range through the waters of many jurisdictions, even going out of state or country.
- Data have the potential to show change over a relatively short time period.
- Indicators are used by other agencies such as the Puget Sound Partnership.

An indicator may be present throughout your shoreline jurisdiction, such as impervious surfaces in urban areas, or limited to one or several shoreline reaches, such as freshwater riparian vegetation. A small percent reduction of impervious surfaces throughout shoreline jurisdiction could have significant positive effects on shoreline functions. On the other hand, the loss of riparian vegetation in one or several reaches could have significant detrimental impacts on shoreline functions. You could choose one or two indicators that occur throughout shoreline jurisdiction and several other indicators that occur in one or several reaches where a gain or loss represents a substantial change to shoreline functions.

**Choosing appropriate indicators**

Choose indicators that represent habitat, water quantity and water quality in your community. For example, shoreline stabilization affects habitat; forest cover affects habitat, water quantity and water quality; and the 303(d) list reflects water quality. This combination of indicators, if they adequately represent your shorelines, would be good to track.

The indicators you choose should take into account the anticipated future development along your shorelines. Projecting “reasonably foreseeable future development and use of the shoreline” is part of the Cumulative Impacts Analysis. If you expect that urban, suburban or high intensity development will occur along the shoreline, consider indicators related to such development. These may include impervious surface area, shoreline stabilization, overwater structures, riparian vegetation, road lengths or invasive species, among others.

![Figure 4-4: Riparian vegetation, overwater structures and impervious surfaces are potential indicators of no net loss.](image)
Keep in mind any restoration that you expect to occur. If your plans call for removing bulkheads and restoring habitat, appropriate indicators might be riparian vegetation, eagle and osprey nests, and the length of shoreline armoring.

Avoid choosing an indicator that does not represent your shoreline, for example, forest cover if forest cover would not occur naturally. Avoid choosing several indicators that may represent the same impacts on ecological function – e.g., riparian vegetation in a relatively undeveloped area, and acres of permanently protected areas in the same location.

**Tracking indicators**

Develop a process and method to track the indicators. The SMP Guidelines state, “Master programs or other local permit review ordinances addressing shoreline project review shall include a mechanism for documenting all project review actions in shoreline areas. Local governments shall also identify a process for periodically evaluating the cumulative effects of authorized development on shoreline conditions. This process could involve a joint effort by local governments, state resource agencies, affected Indian tribes, and other parties” [WAC 173-26-191(2)(a)(iii)(D)].

Tracking your indicators can help you determine whether you are achieving no net loss. Determine how often you will measure your indicators – annually, when you update your SMP, or something in between? What do the indicators tell you compared with the baseline? How will the information be analyzed? Figure out early what you will be looking for, how it will be measured, and what it might mean.

Some options for tracking indicators:

- Track through the permit process. This may work for some development features, such as impervious surface coverage, length of bulkheads, and vegetation clearing. Developments that are exempt from the requirements for a Shoreline Substantial Development permit usually need local building or other permits. How often will these be checked? Can you keep a running tally, or run a software program annually?
- Track through local data that is updated regularly.
- Track through state or federal or other data sources. Who in your department will follow up, and when should that happen? (Refer to the indicators table for potential data sources.)
- Track changes through aerial photos or shoreline field visits, on land and water. Identify the process you will use.
Reporting use of indicators

The SMP Guidelines require local governments to show how NNL will be achieved, although specific indicators are not required. However, you are required to show in the Cumulative Impacts Analysis and No Net Loss report how the SMP will achieve no net loss when implemented over time. Your choice of indicators, rationale for choosing them, and explanation of how they will be tracked and evaluated should be discussed in these reports. Your SMP also can discuss how you will use indicators to show whether you are achieving no net loss.
Shoreline Master Program Guidelines

SMP Guidelines specifically addressing No Net Loss

WAC 173-26-186

(8) Through numerous references to and emphasis on the maintenance, protection, restoration, and preservation of "fragile" shoreline "natural resources," "public health," "the land and its vegetation and wildlife," "the waters and their aquatic life," "ecology," and "environment," the act makes protection of the shoreline environment an essential statewide policy goal consistent with the other policy goals of the act. It is recognized that shoreline ecological functions may be impaired not only by shoreline development subject to the substantial development permit requirement of the act but also by past actions, unregulated activities, and development that is exempt from the act's permit requirements. The principle regarding protecting shoreline ecological systems is accomplished by these guidelines in several ways, and in the context of related principles. These include:

   (a) Local government is guided in its review and amendment of local master programs so that it uses a process that identifies, inventories, and ensures meaningful understanding of current and potential ecological functions provided by affected shorelines.

   (b) Local master programs shall include policies and regulations designed to achieve no net loss of those ecological functions.

      (i) Local master programs shall include regulations and mitigation standards ensuring that each permitted development will not cause a net loss of ecological functions of the shoreline; local government shall design and implement such regulations and mitigation standards in a manner consistent with all relevant constitutional and other legal limitations on the regulation of private property.

      (ii) Local master programs shall include regulations ensuring that exempt development in the aggregate will not cause a net loss of ecological functions of the shoreline.

SMP Guidelines generally addressing environmental protection and related to No Net Loss

Scientific and technical information

WAC 173-26-201(2)(a)

(a) Use of scientific and technical information. To satisfy the requirements for the use of scientific and technical information in RCW 90.58.100(1), local governments shall incorporate the following two steps into their master program development and amendment process.
First, identify and assemble the most current, accurate, and complete scientific and technical information available that is applicable to the issues of concern. The context, scope, magnitude, significance, and potential limitations of the scientific information should be considered. At a minimum, make use of and, where applicable, incorporate all available scientific information, aerial photography, inventory data, technical assistance materials, manuals and services from reliable sources of science....

Second, base master program provisions on an analysis incorporating the most current, accurate, and complete scientific or technical information available. Local governments should be prepared to identify the following:

(i) Scientific information and management recommendations on which the master program provisions are based;

(ii) Assumptions made concerning, and data gaps in, the scientific information; and

(iii) Risks to ecological functions associated with master program provisions. Address potential risks as described in WAC 173-26-201 (3)(d).

**Shoreline ecological functions**

**WAC 173-26-201(3)(d)(i):**
(C) Shoreline ecological functions include, but are not limited to:

In rivers and streams and associated flood plains:

Hydrologic: Transport of water and sediment across the natural range of flow variability; attenuating flow energy; developing pools, riffles, gravel bars, recruitment and transport of large woody debris and other organic material.

Shoreline vegetation: Maintaining temperature; removing excessive nutrients and toxic compound, sediment removal and stabilization; attenuation of flow energy; and provision of large woody debris and other organic matter.

Hyporheic functions: Removing excessive nutrients and toxic compound, water storage, support of vegetation, and sediment storage and maintenance of base flows.

Habitat for native aquatic and shoreline-dependent birds, invertebrates, mammals; amphibians; and anadromous and resident native fish: Habitat functions may include, but are not limited to, space or conditions for reproduction; resting, hiding and migration; and food production and delivery.

In lakes:

Hydrologic: Storing water and sediment, attenuating wave energy, removing excessive nutrients and toxic compounds, recruitment of large woody debris and other organic material.
Shoreline vegetation: Maintaining temperature; removing excessive nutrients and toxic compound, attenuating wave energy, sediment removal and stabilization; and providing woody debris and other organic matter.

Hyporheic functions: Removing excessive nutrients and toxic compound, water storage, support of vegetation, and sediment storage and maintenance of base flows.

Habitat for aquatic and shoreline-dependent birds, invertebrates, mammals; amphibians; and anadromous and resident native fish: Habitat functions may include, but are not limited to, space or conditions for reproduction, resting, hiding and migration; and food production and delivery.

In marine waters:

Hydrologic: Transporting and stabilizing sediment, attenuating wave and tidal energy, removing excessive nutrients and toxic compounds; recruitment, redistribution and reduction of woody debris and other organic material.

Vegetation: Maintaining temperature; removing excessive nutrients and toxic compound, attenuating wave energy, sediment removal and stabilization; and providing woody debris and other organic matter.

Habitat for aquatic and shoreline-dependent birds, invertebrates, mammals; amphibians; and anadromous and resident native fish: Habitat functions may include, but are not limited to, space or conditions for reproduction, resting, hiding and migration; and food production and delivery.

Wetlands:

Hydrological: Storing water and sediment, attenuating wave energy, removing excessive nutrients and toxic compounds, recruiting woody debris and other organic material.

Vegetation: Maintaining temperature; removing excessive nutrients and toxic compound, attenuating wave energy, removing and stabilizing sediment; and providing woody debris and other organic matter.

Hyporheic functions: Removing excessive nutrients and toxic compound, storing water and maintaining base flows, storing sediment and support of vegetation.

Habitat for aquatic and shoreline-dependent birds, invertebrates, mammals; amphibians; and anadromous and resident native fish: Habitat functions may include, but are not limited to, space or conditions for reproduction, resting, hiding and migration; and food production and delivery.

(D) The overall condition of habitat and shoreline resources are determined by the following ecosystem-wide processes and ecological functions:
The distribution, diversity, and complexity of the watersheds, marine environments, and landscape-scale features that form the aquatic systems to which species, populations, and communities are uniquely adapted.

The spatial and temporal connectivity within and between watersheds and along marine shorelines. Drainage network connections include flood plains, wetlands, upslope areas, headwater tributaries, and naturally functioning routes to areas critical for fulfilling life history requirements of aquatic and riverine-dependent species.

The shorelines, beaches, banks, marine near-shore habitats, and bottom configurations that provide the physical framework of the aquatic system.

The timing, volume, and distribution of woody debris recruitment in rivers, streams and marine habitat areas.

The water quality necessary to maintain the biological, physical, and chemical integrity of the system and support survival, growth, reproduction, and migration of individuals composing aquatic and riverine communities.

The sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

The range of flow variability sufficient to create and sustain fluvial, aquatic, and wetland habitats, the patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows, and duration of flood plain inundation and water table elevation in meadows and wetlands.

The species composition and structural diversity of plant communities in river and stream areas and wetlands that provides summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of woody debris sufficient to sustain physical complexity and stability.

(E) Local governments should use the characterization and analysis called for in this section to prepare master program policies and regulations designed to achieve no net loss of ecological functions necessary to support shoreline resources and to plan for the restoration of the ecosystem-wide processes and individual ecological functions on a comprehensive basis over time.

Precautionary principle

WAC 173-26-201(3)(g)
The level of detail of inventory information and planning analysis will be a consideration in setting shoreline regulations. As a general rule, the less known about existing resources, the more protective shoreline master program provisions should be to avoid unanticipated impacts to shoreline resources. If there is a question about the extent or condition of an existing ecological
resource, then the master program provisions shall be sufficient to reasonably assure that the resource is protected in a manner consistent with the policies of these guidelines.

**Mitigation sequencing**

**WAC 173-26-201(2)**

*(c) Environmental impact mitigation.*

(i) To assure **no net loss** of shoreline ecological functions, master programs shall include provisions that require proposed individual uses and developments to analyze environmental impacts of the proposal and include measures to mitigate environmental impacts not otherwise avoided or mitigated by compliance with the master program and other applicable regulations. To the extent Washington's State Environmental Policy Act of 1971 (SEPA), chapter 43.21C RCW, is applicable, the analysis of such environmental impacts shall be conducted consistent with the rules implementing SEPA, which also address environmental impact mitigation in WAC 197-11-660 and define mitigation in WAC 197-11-768. Master programs shall indicate that, where required, mitigation measures shall be applied in the following sequence of steps listed in order of priority, with (e)(i)(A) of this subsection being top priority.

(A) Avoiding the impact altogether by not taking a certain action or parts of an action;

(B) Minimizing impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts;

(C) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

(D) Reducing or eliminating the impact over time by preservation and maintenance operations;

(E) Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and

(F) Monitoring the impact and the compensation projects and taking appropriate corrective measures.

(ii) In determining appropriate mitigation measures applicable to shoreline development, lower priority measures shall be applied only where higher priority measures are determined to be infeasible or inapplicable.

Consistent with WAC 173-26-186 (5) and (8), master programs shall also provide direction with regard to mitigation for the impact of the development so that:

(A) Application of the mitigation sequence achieves **no net loss** of ecological functions for each new development and does not result in required mitigation in excess of that necessary to assure that development will result in **no net loss** of shoreline ecological functions and not have a significant adverse impact on other shoreline functions fostered by the policy of the act.
(B) When compensatory measures are appropriate pursuant to the mitigation priority sequence above, preferential consideration shall be given to measures that replace the impacted functions directly and in the immediate vicinity of the impact. However, alternative compensatory mitigation within the watershed that addresses limiting factors or identified critical needs for shoreline resource conservation based on watershed or comprehensive resource management plans applicable to the area of impact may be authorized. Authorization of compensatory mitigation measures may require appropriate safeguards, terms or conditions as necessary to ensure no net loss of ecological functions.

**Shoreline inventory and characterization**

**WAC 173-26-201(3)c**
Local government shall, at a minimum, and to the extent such information is relevant and reasonably available, collect the following information:

(i) Shoreline and adjacent land use patterns and transportation and utility facilities, including the extent of existing structures, impervious surfaces, vegetation and shoreline modifications in shoreline jurisdiction. Special attention should be paid to identification of water-oriented uses and related navigation, transportation and utility facilities.

(ii) Critical areas, including wetlands, aquifer recharge areas, fish and wildlife conservation areas, geologically hazardous areas, and frequently flooded areas. See also WAC 173-26-221.

(iii) Degraded areas and sites with potential for ecological restoration.

(iv) Areas of special interest, such as priority habitats, developing or redeveloping harbors and waterfronts, previously identified toxic or hazardous material clean-up sites, dredged material disposal sites, or eroding shorelines, to be addressed through new master program provisions.

(v) Conditions and regulations in shoreland and adjacent areas that affect shorelines, such as surface water management and land use regulations. This information may be useful in achieving mutual consistency between the master program and other development regulations.

(vi) Existing and potential shoreline public access sites, including public rights of way and utility corridors.

(vii) General location of channel migration zones, and flood plains.

(viii) Gaps in existing information. During the initial inventory, local governments should identify what additional information may be necessary for more effective shoreline management.

(ix) If the shoreline is rapidly developing or subject to substantial human changes such as clearing and grading, past and current records or historical aerial photographs may be necessary to identify cumulative impacts, such as bulkhead construction, intrusive development on priority
habitats, and conversion of harbor areas to nonwater-oriented uses.

(x) If archaeological or historic resources have been identified in shoreline jurisdiction, consult with the state historic preservation office and local affected Indian tribes regarding existing archaeological and historical information.

WAC 173-26-201(3)(d)

Analyze shoreline issues of concern. Before establishing specific master program provisions, local governments shall analyze the information gathered in (c) of this subsection and as necessary to ensure effective shoreline management provisions, address the topics below, where applicable.

(i) Characterization of functions and ecosystem-wide processes.

(A) Prepare a characterization of shoreline ecosystems and their associated ecological functions. The characterization consists of three steps:

(I) Identify the ecosystem-wide processes and ecological functions based on the list in (d)(i)(C) of this subsection that apply to the shoreline(s) of the jurisdiction.

(II) Assess the ecosystem-wide processes to determine their relationship to ecological functions present within the jurisdiction and identify which ecological functions are healthy, which have been significantly altered and/or adversely impacted and which functions may have previously existed and are missing based on the values identified in (d)(i)(D) of this subsection; and

(III) Identify specific measures necessary to protect and/or restore the ecological functions and ecosystem-wide processes.

Use analysis

WAC 173-26-201(3)(d)

(ii) Shoreline use analysis and priorities. Conduct an analysis to estimate the future demand for shoreline space and potential use conflicts. Characterize current shoreline use patterns and projected trends to ensure appropriate uses consistent with chapter 90.58 RCW and WAC 173-26-201 (2)(d) and 173-26-211(5).

If the jurisdiction includes a designated harbor area or urban waterfront with intensive uses or significant development or redevelopment issues, work with the Washington state department of natural resources and port authorities to ensure consistency with harbor area statutes and regulations, and to address port plans. Identify measures and strategies to encourage appropriate use of these shoreline areas in accordance with the use priorities of chapter 90.58 RCW and WAC 173-26-201 (2)(d) while pursuing opportunities for ecological restoration.

Cumulative Impacts

WAC 173-26-186
(d) Local master programs shall evaluate and consider cumulative impacts of reasonably foreseeable future development on shoreline ecological functions and other shoreline functions fostered by the policy goals of the act. To ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts among development opportunities. Evaluation of such cumulative impacts should consider:

(i) Current circumstances affecting the shorelines and relevant natural processes;

(ii) Reasonably foreseeable future development and use of the shoreline; and

(iii) Beneficial effects of any established regulatory programs under other local, state, and federal laws.

It is recognized that methods of determining reasonably foreseeable future development may vary according to local circumstances, including demographic and economic characteristics and the nature and extent of local shorelines.

(e) The guidelines are not intended to limit the use of regulatory incentives, voluntary modification of development proposals, and voluntary mitigation measures that are designed to restore as well as protect shoreline ecological functions.

Restoration Planning

WAC 173-26-186(8)

(c) For counties and cities containing any shorelines with impaired ecological functions, master programs shall include goals and policies that provide for restoration of such impaired ecological functions. These master program provisions shall identify existing policies and programs that contribute to planned restoration goals and identify any additional policies and programs that local government will implement to achieve its goals. These master program elements regarding restoration should make real and meaningful use of established or funded nonregulatory policies and programs that contribute to restoration of ecological functions, and should appropriately consider the direct or indirect effects of other regulatory or nonregulatory programs under other local, state, and federal laws, as well as any restoration efforts that may flow indirectly from shoreline development regulations and mitigation standards.

WAC 173-26-201(2)(f)

Shoreline restoration planning. Consistent with principle WAC 173-26-186 (8)(c), master programs shall include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program. The approach to restoration planning may vary significantly among local jurisdictions, depending on:

- The size of the jurisdiction;
• The extent and condition of shorelines in the jurisdiction;

• The availability of grants, volunteer programs or other tools for restoration; and

• The nature of the ecological functions to be addressed by restoration planning.

Master program restoration plans shall consider and address the following subjects:

(i) Identify degraded areas, impaired ecological functions, and sites with potential for ecological restoration;

(ii) Establish overall goals and priorities for restoration of degraded areas and impaired ecological functions;

(iii) Identify existing and ongoing projects and programs that are currently being implemented, or are reasonably assured of being implemented (based on an evaluation of funding likely in the foreseeable future), which are designed to contribute to local restoration goals;

(iv) Identify additional projects and programs needed to achieve local restoration goals, and implementation strategies including identifying prospective funding sources for those projects and programs;

(v) Identify timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals;

(vi) Provide for mechanisms or strategies to ensure that restoration projects and programs will be implemented according to plans and to appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals.

Specific Shoreline Activity and Use Standards

Numerous additional specific references exist in the SMP Guidelines, requiring SMP regulations resulting in no net loss of shoreline ecological functions. Specific shoreline activity standards referencing NNL are located at:

WAC 173-26-221(2)(c)(ii)(C) and (D): Geologically hazardous areas.
WAC 173-26-221(2)(c)(iii)(C): Critical saltwater habitats
WAC 173-26-221(2)(c)(iv)(C): Critical freshwater habitats
WAC 173-26-221(3): Flood hazard reduction
WAC 173-26-221(4)(d): Public access
WAC 173-26-221(5): Shoreline vegetation conservation
WAC 173-26-221(6): Water quality, storm water and nonpoint pollution
WAC 173-26-231: Shoreline modifications, including shoreline stabilization, piers and docks, fill, breakwaters, jetties, groins and weirs, beach and dunes management, dredging and dredge material disposal, shoreline habitat and natural systems-enhancement projects.

Specific shoreline use standards referencing NNL are located at:

WAC 173-26-241(2)(a)(iv), addressing the following uses:
- Agriculture
- Aquaculture
- Boating facilities
- Commercial development
- Forest practices
- Industry
- In-stream structural uses
- Mining
- Recreational development
- Residential development
- Transportation and parking
- Utilities