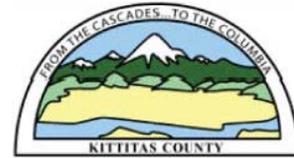


KITTITAS COUNTY SHORELINE MASTER PROGRAM UPDATE – NO NET LOSS REPORT

Ecology Grant No. G1200054



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SECTION 1. INTRODUCTION

The purpose of this report is to document how the Kittitas County Revised Final Draft Shoreline Master Program (SMP) (July 2014) would achieve “no net loss” of shoreline ecological functions. The concept of no net loss of shoreline ecological functions has been rooted in the Shoreline Management Act since its enactment by the citizens of the state of Washington in 1971. The Act states that “permitted uses in the shoreline shall be designed and conducted in a manner that minimizes in so far as practical, any resultant damage to the ecology and environment of the shoreline area...” (RCW 90.58.020). The SMP guidelines were updated in 2011, and now specifically require that updated SMPs include policies and regulations designed to achieve no net loss of ecological functions (WAC 173-26-186). The guidelines suggest that “no net loss” is achieved primarily through regulatory mechanisms including mitigation requirements, but that restoration incentives and voluntary actions are also critical to achieving the “no net loss” goal.

As recommended by the Washington State Department of Ecology (2010), this report explains how the information from the SMP supporting documents were applied in the development and revision of policies and regulations within the Final Draft SMP (January 2014) and Revised Final Draft SMP (July 2014) . To date, the Revised Final Draft SMP has not yet been reviewed by the Kittitas County Planning Commission or Board of County Commissioners.

SECTION 2. COUNTY SHORELINES

“Shorelines of the state” and their associated “shorelands” are regulated under the Shoreline Management Act. Shorelines of the state are defined as rivers and streams with a mean annual flow of 20 cubic feet per second or more and lakes greater than 20 acres. Shorelands refers to the lands extending landward for 200 feet in all directions from the ordinary water line; floodways and contiguous floodplains areas landward 200 feet from such floodways; and all associated wetlands.

The County spans over three major basins with the majority of County lands (78 percent) occurring within the Upper Yakima Basin, which drains to the Yakima River, and the remaining 22 percent occurring within the Little Naches River Basin and Columbia River Basin. There are approximately 680 miles of shoreline in Kittitas County subject to the SMA, which includes shorelines along 51 streams and 44 lakes and ponds. In total, there are approximately 46 square miles of adjacent shorelands in unincorporated Kittitas County that are regulated under the Shoreline Management Act. The streams and lakes occur on a mix of federal, state, and private land zoned for agriculture, forest and range, residential, and limited light industrial and commercial uses.

SECTION 3. SHORELINE INVENTORY AND CHARACTERIZATION REPORT

The Shoreline Inventory and Characterization Report (ESA, 2013a), prepared in support of the Kittitas County, City of Ellensburg, City of Cle Elum, and Town of South Cle Elum SMP update efforts, is an assessment of the lakes, streams, and rivers that are classified as shorelines of the state and their surroundings. The report was developed in collaboration with Central Washington University’s Center for Spatial Information and Research, and was reviewed by Ecology and the SMP Technical Advisory Committee.

During the SMP update process the report has served multiple purposes, such as:

- Identifying shoreline resources and areas that provide value to shoreline stakeholders, to ensure that they are managed according to the goals of the Shoreline Management Act;
- Assessing and documenting current shoreline conditions to establish a baseline against which future conditions can be compared;
- Providing a basis of information to assign Shoreline Environment Designations; and
- Informing the development of SMP policies and regulations related to shoreline use and development, shoreline ecology, and public access.

Key findings and recommendations from the Shoreline Inventory and Characterization Report that are applicable to the County SMP are presented in Table 1, along with brief descriptions of how the findings/recommendations are addressed in the Revised Final Draft SMP.

Table 1. Key findings and recommendations from the Shoreline Inventory and Characterization Report (ESA, 2013a) and corresponding provision(s) in the Revised Final Draft SMP.

Key Finding/Recommendation	Corresponding SMP Provision(s)
Channel migration zones are present along many County streams. Channel migration is a natural habitat-forming process, but it can be hazardous to people and structures.	<ul style="list-style-type: none"> • If County maps indicate that a potential channel migration zone exists on or adjacent to a proposed use or development site, the applicant must locate the proposed development landward of the channel migration zone, or demonstrate (by submitting a special study) that the proposed development has minimal risk of channel migration during the next 100 years (Section 4.2.P.7). Based upon the results of the study, the Administrator may prohibit or limit development within a channel migration zone (Section 4.2.P.8).
New development should be set back an adequate distance from shorelines to protect shoreline functions and vegetation.	<ul style="list-style-type: none"> • Shoreline buffers range from 75 feet in the High Intensity shoreline environment designation up to 150 feet for the Natural designation (Section 4.5.B.1). Buffers must be maintained in a well-vegetated condition (Section 4.5.B.2). In addition, a 15-foot building setback is required from the shoreline buffer (Section 5.21).

Key Finding/Recommendation	Corresponding SMP Provision(s)
	<ul style="list-style-type: none"> Alteration of the standard shoreline buffer is only allowed for certain uses/developments, including limited and selective tree removal/pruning to create a shoreline view corridor, construction of a private un-paved pathway, hazard tree removal, invasive species management, creation of public trails and other public access improvements, construction of water-dependent or water-related utilities and essential public facilities, and installation of new irrigation structures, provided that the structures are located within an of existing agricultural activities (Section 4.5.B.4). The Administrator may require vegetation enhancement outside of the disturbed area as compensation for buffer alteration.
Protect high-quality forest and shrub-steppe habitat.	<ul style="list-style-type: none"> Development and uses within the Urban Conservancy, Rural Conservancy and Natural designations shall be situated to avoid or minimize impacts to forest habitat and other relatively undisturbed native vegetation communities (Section 4.5.B.6).
Manage recreational activity to reduce impacts on vegetation and subsequent erosion.	<ul style="list-style-type: none"> Recreational facilities shall incorporate means to prevent erosion, control the amount of runoff and prevent harmful concentrations of chemicals and sediment from entering water bodies (Section 5.13.B.7).
Encourage new/existing docks to be joint-use structures designed to be fish-friendly.	<ul style="list-style-type: none"> New residential development of 2 or more dwellings must provide joint-use or community dock facilities, rather than allow individual docks for each residence (Section 5.5.B.5) Grating shall cover the entire surface area of the pier, ramp, and/or float. Pier and ramp construction shall meet or exceed the standards and/or requirements of the Washington State Departments of Ecology, Fish and Wildlife, and Natural Resources and the United States Army Corps of Engineers (Section 5.5.B.3).
Protect high-quality wetland habitat.	<ul style="list-style-type: none"> Proposed impacts to critical areas (including wetlands) must follow the mitigation sequencing criteria (Section 4.2.B.2). The first (and priority) action in the sequence is to avoid the impact altogether.
Encourage use of agricultural best management practices to reduce erosion and transport of legacy pesticides.	<ul style="list-style-type: none"> Use appropriate vegetation management and Natural Resources Conservation Service conservation practices to avoid and minimize water quality impacts from agricultural activities (Section 5.3.A.3) Encourage agricultural uses to maintain a buffer of permanent vegetation or other soil erosion control measures between tilled areas and associated water bodies that will restrict surface runoff, protect water quality, improve habitat, and reduce siltation (Section 5.3.A.4) New agricultural activities, equipment, and facilities shall utilize best management practices established by the USDA Natural Resources Conservation Service or other similar agency (Section 5.3.B.3)
There is significant undeveloped land that lies within flood-prone areas.	<ul style="list-style-type: none"> New uses and developments within frequently flooded areas shall comply with the County Flood Prevention Ordinance (Section 4.2.R.1).

Key Finding/Recommendation	Corresponding SMP Provision(s)
	<ul style="list-style-type: none"> • New uses or developments shall not reduce the effective flood storage volume within a frequently flooded area (Section 4.2.R.2).
<p>Educate shoreline property owners about measures to protect and restore riparian areas.</p>	<ul style="list-style-type: none"> • Encourage public and private shoreline owners to promote the proliferation of native, noninvasive wildlife, fish, and plants (Section 5.16.A.7). • The County should coordinate with state resources agencies to develop educational materials which promote the maintenance and restoration of shoreline functions (Section 5.16.A.11).
<p>Support programs such as the Yakima/Klickitat Fisheries Project, Yakima River Side Channels Project, and Yakima Tributary Access and Habitat Program.</p>	<ul style="list-style-type: none"> • Support voluntary and cooperative restoration efforts between local, state, and federal public agencies, tribes, non-profit organization, and landowners to improve shorelines with impaired ecological functions and/or processes (Section 5.16.A.9).

The identification of shoreline conditions, ecological functions, land use patterns and management recommendations in the Shoreline Inventory and Characterization Report was a primary consideration in developing and mapping the Shoreline Environment Designations. The following describes the purposes of the six environment designations specified in the Revised Final Draft SMP, and provides examples of how the information in the shoreline inventory report was used to designate specific shoreline areas.

- The purpose of the **Natural** designation is to protect or restore shoreline areas that are relatively free of human influence or include intact or minimally degraded shoreline functions intolerant of human use. It is the most protective of the six environment designations. The lower Cle Elum River is mapped as Natural because it was identified in the shoreline inventory report having an intact vegetation community, little human alteration, and is an important Chinook salmon spawning area.
- The purpose of the **Rural Conservancy** designation is to protect ecological functions and natural resources, in order to provide for sustained resource use, natural floodplain processes, and recreational opportunities. Much of the mainstem Teanaway River is mapped as Rural Conservancy because it has large area of intact riparian cover and provides important habitat for several salmonid species, but much of the floodplain area is used for agriculture and low density residential development.
- The purpose of the **Urban Conservancy** designation is to protect and restore ecological functions of open space, floodplain, and other sensitive lands where they exist in urban and developed settings, while allowing a variety of compatible uses. The forested Yakima River floodplain areas within the City of Cle Elum Urban Growth Area are mapped as Urban Conservancy because they provide important hydrologic and habitat functions, and are designated under the Growth Management Act as future growth areas for the City.

- The purpose of the **Shoreline Residential** designation is to accommodate residential development and recreational uses while maintaining the existing character of the shoreline in areas that are primarily developed, platted, or zoned for moderate- to high-density residential development. The residential areas in Vantage along the Columbia River are designated as Shoreline Residential because they are zoned and developed with urban residential.
- The purpose of the **High Intensity** designation is to provide for high intensity water-oriented commercial, transportation, and industrial uses while protecting existing ecological functions and restoring ecological functions in area that have been previously damaged. The parcels containing the City of Ellensburg Wastewater Treatment Plant within the Ellensburg Urban Growth Area (UGA) are designated as High Intensity because they are significantly altered and contain a high intensity use. These parcels are located outside of the minimum shoreline jurisdiction area.
- The purpose of the **Aquatic** designation is to protect, restore, and manage the unique characteristics and resources of aquatic areas. All areas waterward of the Ordinary High Water Mark are designated as Aquatic.

SECTION 4. CUMULATIVE IMPACTS ANALYSES

ESA (2013b) conducted a preliminary draft cumulative impact analysis on the January 2013 draft of the SMP. The purpose of the analysis was to evaluate the cumulative impacts of “reasonably foreseeable future development” within County shoreline jurisdiction, if the January 2013 Draft SMP was adopted as-is.

Reasonably foreseeable future development was estimated by conducting a parcel-based build-out analysis. Using Kittitas County Assessor records, zoning maps, and other data, parcels within shoreline jurisdiction were categorized based upon their eligibility for future subdivision and development. Next, the ecological functions (i.e. water quality, habitat, and hydrology) that would be at risk from the potential future development were analyzed. The protective regulations in the January 2013 Draft SMP that would serve to mitigate impacts from development were then compared to the ecological risk assessment, to determine if cumulative impacts to shoreline functions may occur in the future. Four questions guided this analysis:

- Are the proposed Shoreline Environment Designations protective of existing ecological functions?
- Are the allowed and conditionally allowed uses appropriate for each environment designation?
- Are the shoreline buffers, setbacks and critical area buffers protective of existing ecological functions?

- What other regulations in the SMP serve to protect ecological functions at risk and are they adequate to address all potential impacts?

Lastly, the various existing local, state, and federal laws and programs (such as the federal Endangered Species Act) were reviewed to determine if ecological functions and processes would be restored or improved when new development occurs.

In the process of assessing cumulative impacts, some provisions in the January 2013 Draft SMP were determined to be inadequate at preventing cumulative impacts, and potentially would result in a net loss of shoreline functions. These issues, which were revised in the January 2014 Final Draft SMP and July 2014 Revised Final Draft SMP, are summarized in Table 2.

Additionally, some revisions to the January 2013 Draft SMP resulted from agency and public comments. However, there were some public comments relating to the protection of shoreline functions that did not result in substantive changes to the SMP, as it was determined that the proposed regulations were sufficient to protect shoreline functions (Table 3).

Table 2. Key issues identified during development of the preliminary draft cumulative impact assessment (ESA, 2013b), and corresponding revisions to the Revised Final Draft SMP.

Issue	Corresponding SMP Revision
SMP did not adequately address vegetation retention outside of shoreline and critical area buffers, but still within shoreline jurisdiction.	Where possible, development and uses within the Rural Conservancy and Natural designations shall be situated to avoid or minimize impacts to forest habitat and other relatively undisturbed native vegetation communities (Section 4.5.B.6).
SMP did not limit buffer averaging and reduction for new residential subdivisions.	Critical area and shoreline buffer averaging and reduction are prohibited for residential subdivisions of 5 or more lots. Buffer averaging or reduction is only allowed when adherence to the standard buffer is infeasible or presents a substantial hardship because of site conditions, lot configuration or other circumstances (Sections 4.2 and 4.5).
SMP did not clearly specify that “common line” buffer reduction cannot be used for wetland and non-shoreline riparian buffers.	Common line shoreline buffers shall only be used for shoreline buffers, and only for the development of a single family dwelling on an undeveloped lot, where the lot is a legal lot of record in place on the date of the adoption of the SMP, is located adjacent to existing residential units on both adjacent shoreline lots, and is located within an urban growth area, planned units development, Limited Area of More Intense Rural Development, rural recreation zoning district, or cluster development. In addition, a management and mitigation plan must be submitted, which demonstrates no net loss of ecological functions (Section 5.20.B.7).

Table 3. Key public comments relating to the protection of shoreline functions that did not result in substantive SMP revisions.

Comment Summary	Justification for Maintaining the Existing SMP Provision(s)
<p>The proposed wetland buffers are inconsistent with the science provided by Ecology.</p>	<p>Ecology’s wetland buffer guidance, along with a review of other scientific and technical information, was used to develop wetland buffer ranges that are appropriate for conditions within Kittitas County. As stated in the Ecology wetland guidance document, “The recommendations on buffer widths....are general, and there may be some wetlands for which these recommendations are either too restrictive or not protective enough.”</p> <p>A detailed justification of the proposed buffer is available in the memo from ESA dated July 22, 2014.</p>
<p>The SMP does not adequately designate and protect hyporheic habitat.</p>	<p>Unlike floodplains, streams, and wetlands, there is no scientifically-accepted and prescribed method for identifying and mapping hyporheic habitat. There is no statutory requirement to designate and protect hyporheic habitat. With regard to hyporheic habitat, WAC 173-26-221(2)(c)(iv)(B) states, in part:</p> <p style="padding-left: 40px;">“...effective management of lake basins and river and stream corridors depends on:...regulating uses and development within lake basins and stream channels, associated channel migration zones, wetlands, and the floodplain...as necessary to assure no net loss of ecological functions, including where applicable the associated hyporheic zone, results from new development.”</p> <p>Therefore, in order to protect hyporheic habitat, channel migration zones, wetlands, and the floodplain should be managed and regulated. Buffer standards and the other SMP regulations applicable to channel migration zones, wetlands and the floodplain work in concert to protect hyporheic habitat, but regulations specific to the management and protection of hyporheic habitat are not a required component of SMPs.</p>
<p>The proposed shoreline buffers in the draft SMP are a substantial decrease from the existing SMP standards.</p>	<p>The proposed shoreline buffer widths were developed based on applicable statutory requirements, including scientific and technical information requirements of WAC 173-26-201, and the Kittitas County Regional Shoreline Inventory and Characterization Report. The impacts of reasonably foreseeable future development constructed in compliance with the proposed buffers have been evaluated in the County’s Cumulative Impact Analysis report. The report concluded that the SMP regulations, including the proposed buffers, are sufficient to ensure no net loss of shoreline ecological function.</p>
<p>The channel migration zone (CMZ) maps are inaccurate and lack sufficient detail to be useful.</p>	<p>WAC 173.26-201(3)(c) requires jurisdictions to inventory the “general location of channel migration zones.” The CMZ mapping was performed using the methodology that Ecology developed, and the mapping was reviewed and approved by Patricia Olson at Ecology. The mapping is course-scale and to be used for planning purposes only. As the methodology does not take into account changes in water regimes caused by dams and irrigation withdrawals, the mapping likely overestimates the actual extent of CMZs along County shorelines.</p>

Comment Summary	Justification for Maintaining the Existing SMP Provision(s)
	Project applicants may provide a special study, performed by a qualified professional, to refine the CMZ mapping at development sites.
The critical aquifer recharge area (CARA) regulations are not sufficient to protect water quantity and the critical recharging effects on stream, lakes, and wetlands that provide critical fish and wildlife habitat.	The proposed regulations establish performance standards in all CARAs and condition uses with the potential to adversely affect groundwater quality and/or quantity when located in a medium or high susceptibility CARAs. The CARA regulations and standards are consistent with statutory requirements and consistent with regulations approved by Ecology in recent SMPs.
The requirement that any proposed instream structure must be professionally engineered (Section 5.11.B.6) should not apply to restoration projects.	Streams are dynamic and complex systems and many restoration projects have failed to achieve their desired goals because they were not properly designed or engineered. Requiring professional engineering is one of the best ways to ensure that restoration investments are sound and successful. Improperly engineered structures can cause inadvertent environmental degradation (e.g. bank failure) and put people and property at risk. The County could have liability if a permitted in-stream structure associated with a restoration project causes property damage. This regulation is consistent with State law (RCW 77.85.050(5)). To help with the financial costs associated with restoration, the SMP contains provisions for reducing or waiving permitting fees associated with such projects.
Land divisions of any kind should not be eligible for shoreline and critical area buffer averaging and reduction. A concern is that lots may be created that will, of a necessity, require a variance or a department from protection standards in order to develop them.	<p>The standard to make sure newly created lots have suitable area located outside of critical areas and required buffer applies to all land divisions, regardless of number of lots. The four lot distinction allows for a minimal amount of buffer averaging (up to a 25% reduction) to allow flexibility to accommodate preferred residential uses when the applicant demonstrates there is no feasible site design that could be accomplished without buffer averaging. The standard to make sure all lots in a proposed land division have suitable area located outside of required buffer applies to all land divisions, regardless of number of lots. The four lot distinction relates to the size of a subdivision (five or more lots) that must adhere to standard buffers with no buffer averaging or reduction. Additionally, Section 4.2.B.4.a states that buffers that have been averaged or reduced by any prior actions administered by the County shall not be further averaged or reduced. Buffer averaging and reduction is tightly controlled and only allowed in limited circumstances, and must not result in adverse impacts to shoreline and critical area functions and values.</p> <p>The critical areas division regulation (Section 4.2.B) in the Final Revised Draft SMP has been modified slightly to increase clarity, but is substantively identical to the prior version contained the Final Draft SMP.</p>

The January 2014 cumulative impact analysis (ESA, 2014a) assessed the January 2014 Final Draft SMP, and concluded that the Final Draft SMP would be effective in preventing

cumulative impacts to shoreline functions within County shoreline jurisdiction. The Final Draft SMP was subsequently revised in July 2014 in response to comments from the public, County staff, and Ecology, as well as to address the issues described above. The cumulative impact analysis was also subsequently revised in July 2014 to incorporate Ecology comments, reference the July 2014 Revised Draft SMP, and update Appendix A based upon the Final Restoration Plan. The July 2014 cumulative impact analysis concluded that the Revised Final Draft SMP also would be effective in preventing cumulative impacts to shoreline functions within County shoreline jurisdiction. If substantial revisions are made to the policies and regulations proposed in the Revised Final Draft SMP, the analysis will be revised.

SECTION 5. SHORELINE RESTORATION PLAN

A County-wide shoreline restoration plan (ESA, 2014b) was prepared as part of the SMP update processes for Kittitas County, the City of Ellensburg, the City of Cle Elum, and the Town of South Cle Elum. The restoration plan will serve as a framework for the County, its municipalities, and their restoration partners to identify and implement opportunities to improve impaired ecological functions. The restoration plan contains the following elements:

- A summary of existing shoreline impairments (as identified in the Shoreline Inventory and Characterization Report [ESA, 2013a]);
- Identification of existing and ongoing restoration projects and programs, as well as previously unidentified potential restoration actions;
- Timelines and benchmarks for implementing restoration projects and programs; and
- Identification of partners and potential funding sources that can help the County and its municipalities achieve its shoreline restoration goals.

While the restoration planning component of the SMP update process is voluntary, the identified restoration projects could be undertaken to offset and compensate for unavoidable shoreline impacts, in order to achieve no net loss of shoreline ecological functions. For example, if a trend is occurring over time in which a net loss of riparian vegetation is occurring due to development activities, the County could stop or reverse this trend by undertaking shoreline revegetation projects. The shoreline restoration plan contains a list of potential sites where revegetation could occur, and identifies project partners and potential funding sources that could help the County undertake the projects.

In order to determine if no net loss of shoreline functions is occurring, a method is needed to track changes in shoreline conditions. The restoration plan contains a framework for tracking key environmental indicators over time, to determine if ecological functions are increasing, decreasing, or remaining the same, as compared to baseline conditions (as documented in the Shoreline Inventory and Characterization Report [ESA, 2013a]). Sample ecological indicators that could be tracked include clearing or revegetation of riparian

vegetation cover, creation or removal of impervious surfaces, and filling or creation of wetlands. The restoration plan contains a sample shoreline development checklist that could be completed by County staff for all use and development proposals; the checklist contains review questions to help identify and track changes in environmental indicators.

Based upon the compiled results of the shoreline development checklists, the County could assess SMP performance and restoration objectives in the future. Those ecological processes and functions that demonstrate a downward trend of impairment could be elevated for priority action, to prevent a net loss of critical shoreline resources.

SECTION 6. CONCLUSIONS

The baseline conditions of ecological functions and processes in the Shoreline Inventory and Characterization Report (ESA, 2013a) were used as the basis for decisions made throughout the County's SMP update process. The inventory was integral to the development of the shoreline designations, informed goal and policy development, and led to the establishment of proactive regulations. The preliminary cumulative impact analysis (ESA, 2013b) identified issues in the Draft SMP that may result in a net loss of shoreline functions; these issues were revised in the January 2014 Final Draft SMP and July 2014 Revised Final Draft SMP. The cumulative impact analysis (ESA, 2014a) determined that the Final Draft SMP and Revised Final Draft SMP would be effective in preventing cumulative impacts to shoreline functions within County jurisdiction. The shoreline restoration plan (ESA, 2014b) identifies potential restoration projects, partners, and funding sources, as well as timelines and benchmarks for implementing shoreline restoration in the County. The plan also describes a framework for tracking key environmental indicators over time, to verify if no net loss of shoreline ecological functions is occurring.

Based upon the SMP update supporting documents described above, our conclusion is that adoption of the County's July 2014 Revised Final Draft SMP would, over time, achieve no net loss of County shoreline ecological functions. This summary will need to be revised if substantial revisions are made to the policies and regulations proposed in the Kittitas County Revised Final Draft SMP.

SECTION 7. REFERENCES

ESA. 2013a. Kittitas County Regional Shoreline Master Program Update: Shoreline Inventory and Characterization Report (Final Revised).

ESA. 2013b. Kittitas County Shoreline Master Program Update: Cumulative Impacts Analysis (Preliminary Draft).

ESA. 2014a. Kittitas County Shoreline Master Program Update: Cumulative Impacts Analysis (revised January 2014 and July 2014).

ESA. 2014b. Kittitas County Regional Shoreline Master Program Update: Shoreline Restoration Plan (Final).

Kittitas County Draft Shoreline Master Program. January 2013. Kittitas County Regional Shoreline Master Program Update.

Kittitas County Final Draft Shoreline Master Program. January 2014. Kittitas County Regional Shoreline Master Program Update.

Kittitas County Revised Final Draft Shoreline Master Program. July 2014. Kittitas County Regional Shoreline Master Program Update.

Washington State Department of Ecology. 2010. SMP Handbook Chapter 4: No Net Loss of Shoreline Ecological Functions. Olympia, WA.