

APPENDIX A

Washington Department of Ecology Discussion of No Net Loss

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.)

RCW 90.58.020: The legislature finds that the shorelines of the state are among the most valuable and fragile of its natural resources and that there is great concern throughout the state relating to their utilization, protection, restoration, and preservation...This policy contemplates protecting against adverse effects to the public health, the land and its vegetation and wildlife, and the waters of the state and their aquatic life...

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 further 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 for Task 4.1 of 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 (Task 3.1) 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

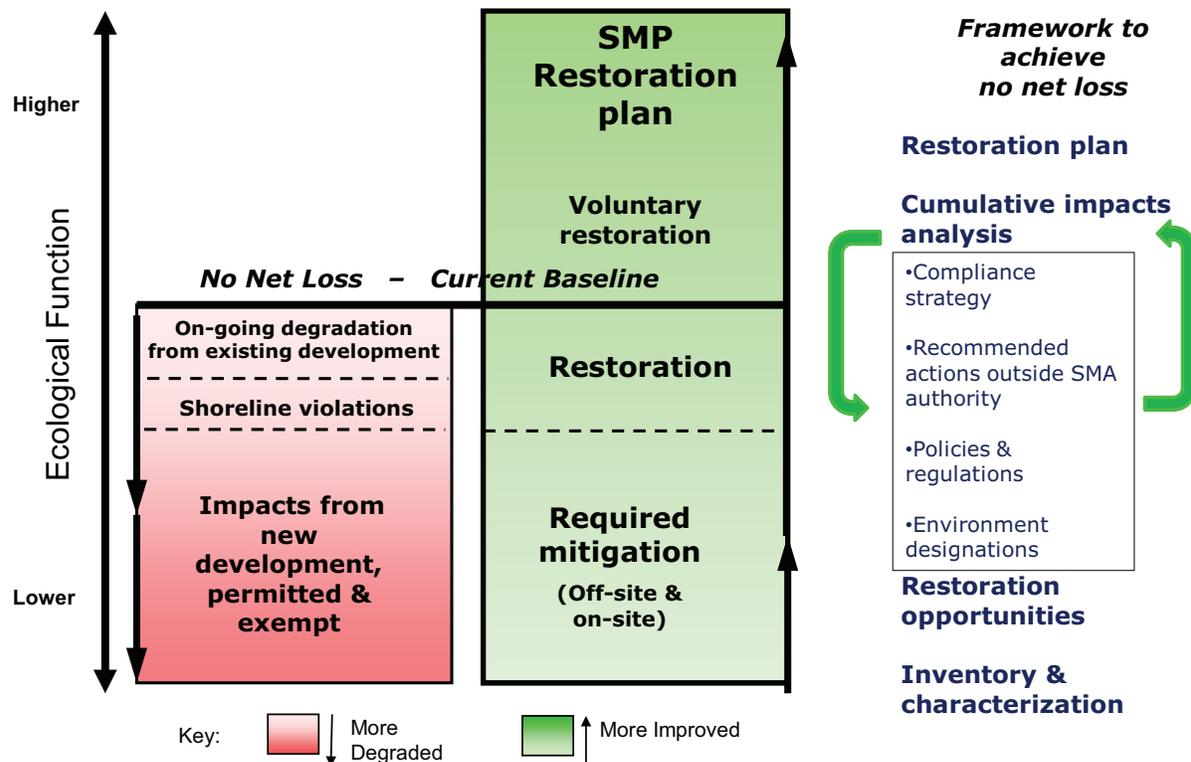


Figure 4-1: During the SMP update process, local governments should use existing shoreline conditions as the baseline for measuring no net loss of shoreline ecological functions.

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 at http://www.ecy.wa.gov/programs/sea/sma/st_guide/SMP/inven_analysis/index.html.)
- **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.

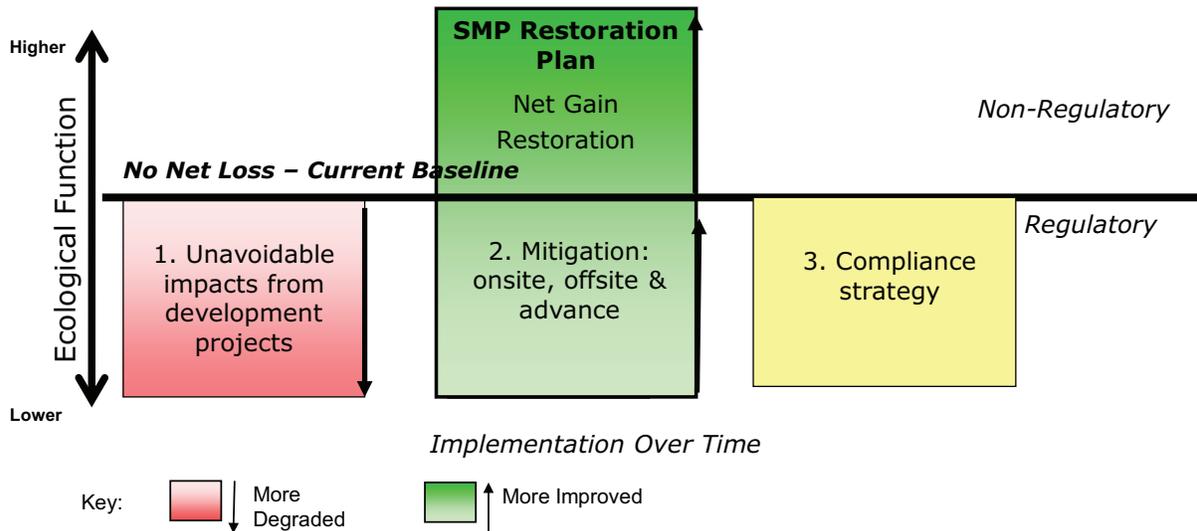
To approve a comprehensive SMP update, Ecology’s Director must formally conclude that the proposed SMP, when implemented over its planning horizon, typically 20 years, will result in “no net loss of ecological functions necessary to sustain shoreline natural resources.” This conclusion will be based 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. 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 Environmental Policy

WAC 173-26-201(3)(d)(iii): For development projects that may have unanticipated 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.”

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” (see [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.



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.

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.