

Appendix X

Under Washington State Shoreline Management Act Guidelines [WAC 173-26-186(8) & WAC 173-26-201(2)(c)] all new development, activities and uses must meet the standard of no net loss of ecological functions and shoreline processes, and to meet no net loss, mitigate any adverse impacts of new development.

The Burien Shoreline Master Program (SMP), Title 20, has been updated and reviewed by the Department of Ecology for consistency with Chapter 90.58 RCW and WAC 173-26 and defines the policies and regulations that must be observed for new development within Burien's Shorelines.

Development activities within Shoreline Jurisdiction that are subject to review under the Shoreline Master Program include, but are not limited to,

- Addition or removal of impervious surface (e.g. structures, pathways, and driveways).
- Addition or removal of native vegetation (BMC 20.30.040)
- Addition or restoration of partially functioning areas (BMC 20.40.101)
- Installation or alteration of Flood Hazard reduction structures (BMC 20.30.030)
- Installation or alteration of Shoreline Stabilization Structures (BMC 20.30.070)
- Installation or alteration of Docks, Piers, and Floats (BMC 20.30.075)

An important component of the provisions that achieve the no net loss standard is the definition of a Shoreline Buffer adjacent to Ordinary High Water Mark (OHWM) in which new development is subject to additional review. The dimensions of this buffer are tailored to the varied conditions that are observed along Burien's shoreline at the time of the update.

Developments with significant impacts within Burien's regulated Shoreline are likely to require the assistance of a qualified professional to demonstrate that a proposed development meets the requirements of the Burien Shoreline Master Program. Examples of projects that are more likely to require this level of support include the construction of a new primary residence on a property that is currently undeveloped and projects that require the installation of, or the expansion of, structures for flood hazard reduction or shoreline stabilization.

Developments with less significant impacts may be able to demonstrate that the no-net-loss provisions can be met by reference to a worksheet that is included in Section X.3 of this appendix. It is particularly appropriate for the remodeling, renovation, and reconstruction of an existing structure, for minor expansions of existing structures, and for the construction of minor appurtenances. Use of this worksheet provides predictability and is intended to reduce cost and complexity in satisfying the permitting process.

X.1 Shoreline Buffers

The Burien SMP [BMC 20.30.050 and 20.30.055] defines a Shoreline Buffer adjacent to Ordinary High Water Mark (OHWM) in which new development is subject to enhanced review to assure no net loss. All development within this buffer must demonstrate that unavoidable adverse impacts are mitigated to achieve no-net loss.

Achieving no net loss can be done by avoiding an adverse impact, relocating the adverse impact to be outside the buffer, or by mitigating the impact. Demonstrating that the development will achieve the no net loss standard can be achieved by reference to an ecological impacts report developed by a qualified professional, or by reference to the worksheet in X.3. The Shoreline Administrator may define standards to guide the development of this report.

The Shoreline Buffer is further divided into two zones, Zone 1 and Zone 2, with Zone 1 adjacent to OWHM and Zone 2 adjacent to the landward edge of Zone 1. The depth of these zones is based on existing patterns of development and hence varies along the Shoreline. The dimensions of the buffer for a given site can be determined by reference to BMC 20.30.050 and subsection X.?

X.1.a Development Standards for Zone 1

It is intended that new development in Zone 1 will be primarily for the maintenance of existing structures, the restoration or remodeling of existing structures within the existing footprint, voluntary restoration activities, or required mitigation for adverse impacts in Zone 2.

The primary exception to this prohibition on adverse impacts is to develop an access path from Zone 2 to the line of OHWM. This access path should be the minimum size and design to serve this purpose and respect the safety of its intended users. Additional flexibility may be required to meet the needs of users with limited mobility.

X.1.b Development Standards for Zone 2

It is intended that new development in Zone 2 will be primarily for the maintenance of existing structures, the restoration or remodeling of existing structures within the existing footprint, or for voluntary restoration activities. However new developments that result in adverse impacts, for example a modest expansion of an existing structure, may occur so long as these impacts are mitigated to achieve no net loss. It is likely that successful mitigation will be more easily achieved in Zone 1 but it is also possible to mitigate adverse impacts by improvements in Zone 2.

X.1.c Additional considerations

BMC 20.30.030 (2.f) and BMC 20.30.070 (2.e) limit new shoreline development that require the need for shoreline stabilization and structural hazard reduction measures for the life of the development. This regulation must be considered if the development requires the installation of, or the expansion of, structures for flood hazard reduction or shoreline stabilization.

X.2 Mitigation Sequencing

Consistent with WAC 173-26-201(2.e) it is necessary that, where required, mitigation measures shall be applied in the following sequence of steps listed in order of priority, with (A) of this subsection being top priority.

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

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;

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

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

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

Monitoring the impact and the compensation projects and taking appropriate corrective measures.

X.3 Demonstrating successful mitigation of unavoidable adverse impacts

This section provides a work sheet that may be useful to demonstrate that typical developments associated with Single Family Residences will meet the no net loss standard without a professional impacts report.

This worksheet provides a model for evaluating the costs of certain adverse impacts and the benefits of certain improvements. The scope of adverse impacts that can be evaluated are limited to the creation or expansion of impervious surface and the removal of existing native vegetation. Improvements are the removal or reduction of impervious surface and the introduction or expansion of native vegetation. BMC 20.40.101 defines partially functioning areas as areas that provide one or more reduced ecological functions, and is neither native vegetation of impervious surface. Ecological functions may include sediment removal, erosion control, pollution removal, wildlife habitat, and infiltration. Partially functioning areas specifically include lawns, slat decks that allow infiltration, and non-native landscaped areas.

Measure of adverse impacts in Zone 2

- 1) Total square feet of new impervious surface _____ X 4 points = _____
- 2) Total square feet of cleared native vegetation _____ X 2 points = _____
- 3) Total cost (add 1 and 2) _____

Benefit of adding native vegetation in Zone 1

- 4) Total square feet of impervious surface eliminated _____ X 4 points = _____
- 5) Total square feet of partially functioning area improved _____ X 2 points = _____
- 6) Benefit of improvements in Zone 1 (add 4 and 5) _____

Benefit of improvements in Zone 2

- 7) Impervious surface to native vegetation (sq ft) _____ X 2 points = _____
- 8) Partially functioning area to native vegetation (sq ft) _____ X 1 points = _____
- 9) Impervious surface to partially functioning area (sq ft) _____ X 0.5 points = _____
- 10) Benefit of improvements in Zone 2 (add 7 – 9) _____

No Net Loss Indicator

- 11) Cost of adverse impacts (line 3) _____
- 12) Total benefit of improvements (add 6 and 10) _____

The project will meet the no net loss standard if line 11, the cost of adverse impacts, is less than or equal to line 12, the benefit of improvements.

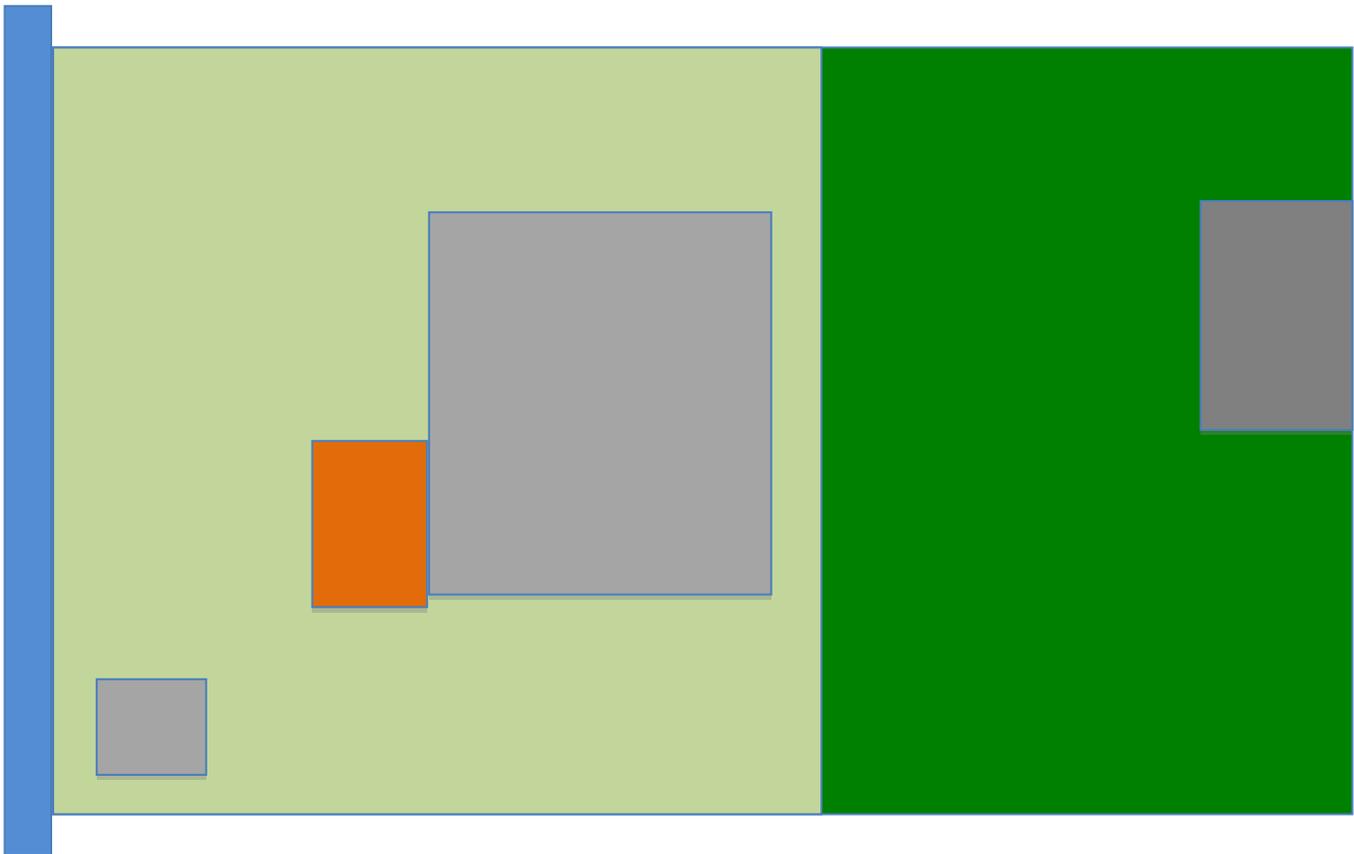
X.4 A worked example

A family is considering a new development in Burien's Marine shoreline within the SR-AL designation. This property is approximately 170' deep and 100' wide and stretches from the road to OHWM. There is a moderate slope towards the landward end of the parcel which is primarily native vegetation. There is a one car garage adjacent to the road and a residence a short distance water ward of the toe of the slope. This one story home was constructed in the early 1950's and is approximately 50' wide and 40' deep and is set back approximately 50' from the OHWM. A concrete patio, 20' wide and 15' deep, is attached to the water ward side of the home; this patio intrudes 10' into Zone 2 of the Shoreline Buffer. The land between the home and the bulkhead has been extensively landscaped with lawn and flower beds. There is a small, 15' by 15', cabana towards the bulkhead.

This family intends to expand the garage and update the primary structure; they plan to add a second story to the home and expand the footprint. The addition of the second floor will not exceed the 35' height limit. The slope at the rear of the home suggests that they expand the home towards OHWM. They decide to expand the home 15' towards OHWM by eliminating the patio and a 30' x 15' section of lawn.

They propose to remove the cabana and replace it with native vegetation. They will also revegetate a 15' x 30' section of landscaping adjacent to the cabana.

Figure 1: A graphic that depicts existing development conditions (Needs polish).



The existing garage is well outside the Shoreline Buffer and the proposed expansion will not require the removal of any vegetation and hence can be approved.

Adding a second story to the home does not increase the impervious surface area and will not exceed the 35' height limit. The expanded footprint will consume the concrete patio and replace 300 sq feet of lawn with new impervious surface

Measure of adverse impacts in Zone 2

1) Total square feet of new impervious surface	200	X 4 points	= 800
2) Total square feet of cleared native vegetation	_____	X 2 points	= _____
3) Total cost (add 1 and 2)			800

Benefit of adding native vegetation in Zone 1

4) Total square feet of impervious surface replaced	225	X 4 points	= 900
5) Total square feet of partially functioning area replaced	450	X 2 points	= 900
6) Benefit of improvements in Zone 1 (add 4 and 5)			1800

Benefit of improvements in Zone 2

7) Impervious surface to native vegetation (sq ft)	_____	X 2 points	= _____
8) Partially functioning area to native vegetation (sq ft)	_____	X 1 points	= _____
9) Impervious surface to partially functioning area (sq ft)	_____	X 0.5 points	= _____
10) Benefit of improvements in Zone 2 (add 7 – 9)			_____

No Net Loss Indicator

11) Cost of adverse impacts (line 3)			800
12) Total benefit of improvements (add 6 and 10)			1800

The use of this work sheet demonstrates that the proposed improvements in Zone 1 are sufficient to mitigate for the adverse impacts in Zone 2.

X.5 Shoreline Planning Areas

The Shoreline Inventory developed by Grette Associates partitioned the Burien Shoreline in to five (5) Inventory Reaches; four (4) along the Marine Shoreline and one (1) that encompasses the perimeter of Lake Burien. The Supplement to the Shoreline Inventory refined this coarse characterization in to nineteen (19) Shoreline Inventory Segments based on environment, existing development conditions, and well defined geographical markers. Finally the Supplement to the Shoreline Analysis and Characterization grouped the Inventory Segments in to four (4) Shoreline Planning Areas:

See BMC 20.30.050 Figure 6 for an image that indicates the location of these planning areas.

UC-NA The relatively natural conditions found in the Urban Conservancy designation

SR-LB Development around Lake Burien

SR-AL Altered portions of the Marine that generally include meaningful native vegetation

SR-HA Highly altered portions of the Marine with relatively little ecological function

See BMC 20.30.050 Figure 5 for the dimensions of Zone 1 and Zone 2 for the Shoreline Buffer in each Shoreline Planning Area.

See BMC 20.30.050 Figure 6 for an image that indicates the location of these planning areas.

The Urban Conservancy (UC-NA) planning area is bounded on the north by the northern end of Seahurst Park and on the south by the southern end of Eagle Landing Park.

The Shoreline Residential – Lake Burien (SR-LB) planning area encompasses all of Lake Burien

The Shoreline Residential – Altered (SR-AL) planning area groups 5 inventory segments along the Marine

- 1) A set of contiguous homes with addresses on SW Seola Lane at the northern border of Burien
- 2) A segment bounded on the north by the northern edge of the Shorewood Community Beach and at the south by the northern edge of those homes with addresses along Shorewood Lane SW
- 3) A substantial property at the mouth of Salmon Creek
- 4) An area bounded on the north by the southern end of Eagle Landing Park and at the south by the property at the tip of Three Tree Point
- 5) An area bounded on the north by the homes in the Seacoma Blvd development and the south by the City Limit with Normandy Park. The Seacoma Blvd development is a set of 9 waterfront homes in a small cul-de-sac off SW 172nd St at the point that this road begins to move away from Puget Sound.

The Shoreline Residential – Highly Altered (SR-HA) planning area consists of the final 5 inventory segments

- 1) A set of contiguous homes with addresses on 30 Ave SW and bounded at the south by the Shorewood Community Beach
- 2) A set of contiguous homes with addresses on Standring Lane SW along that portion of the roadway that runs generally parallel to Puget Sound.
- 3) A set of contiguous homes along the South Beach edge of SW 171st St and SW 172nd St up to and including the 9 homes in the Seacoma Blvd cul-de-sac but not including the home at the tip of Three Tree Point.