Technical Memorandum for Proposed Kitsap County SMP Buffers

Introduction

Shoreline Master Program (SMP) updates are required to integrate critical area regulations for those critical areas within shoreline jurisdiction. SMPs must also consider Vegetation Conservation Buffers as a method to protect existing shoreline ecological functions. This memorandum will provide a review of critical area protection measures and proposed buffers for Kitsap County’s draft SMP. A science summary of the various buffer functions considered is also included in this report.

Critical Area regulations, including shoreline buffer standards, are currently located in Kitsap County Code Title 19 (Critical Areas Ordinance or “CAO”), which was last updated in 2005 and amended in 2007. Upon review of the science utilized for the 2005 CAO update, it was determined that the following critical area chapters conform to “most current, accurate and complete scientific and technical information” and thus may be incorporated into the SMP without significant revisions:

- Wetlands,
- Critical Aquifer Recharge Areas,
- Frequently Flooded Areas, and
- Geologically Hazardous Areas.

It was also determined that the Fish and Wildlife Habitat Conservation Areas chapter required further review, specifically related to Critical Saltwater and Freshwater Habitats, and Vegetation Conservation Buffers. As a result, the Draft SMP includes provisions to address these features.

Critical Saltwater and Freshwater Habitat protection is addressed in each individual Use and Modification section of the Draft SMP. For example, new piers and docks must account for such habitats when considering appropriate location and design. Appendix A describes which regulations and development standards specifically address such habitats. In addition, the general requirement for “no net loss of shoreline ecological functions” further ensures habitat protection for all new development activities.

The remainder of this memorandum will address Vegetation Conservation Buffers, with a brief background on Shoreline Environment Designations.

Existing vs. New Shoreline Environment Designations

The Shoreline Environment Designations have changed in name and definition from those in the current SMP to those recommended in section 173-26-211 of the Washington Administrative Code (WAC). While Kitsap County had the option to retain the existing designation names, they would still need to be analyzed for compatibility with the intent of the new designations. As such, the County has chosen to utilize the recommended WAC designations.

While the existing and new designations share some similarities, comparing them directly is not recommended. However, the ‘colors’ on the existing and new Designation Maps are generally comparable. As an example, brown
shading on the current map indicates ‘Semi-Rural’ shorelines. Those same areas are likely to be brown on the revised map, but will typically have the new ‘Shoreline Residential’ designation instead. The definitions for ‘Semi-Rural’ (old map) and ‘Shoreline Residential’ (new map) are different, but similar enough to allow for very general comparisons between colors on the current and proposed maps.

**Existing Buffers**

Each Shoreline Environment Designation has an associated buffer for new development activity along the shorelines. The existing shoreline buffers were adopted in 2007 as a result of a Growth Board decision which determined that previously proposed smaller buffers for certain designations were not supported by “best available science”. As the Growth Board case focused solely on the Urban, Rural and Semi-Rural designations, the Conservancy and Natural Designations were not addressed at the time, resulting in a situation where the more heavily developed residential and urban settings had buffers equal to or greater than those in the more natural areas. An across the board review of shoreline buffers would need to wait for the SMP process that is currently underway.

Existing buffers are shown by designation in the table below:

<table>
<thead>
<tr>
<th>Existing Shoreline Environment Designation</th>
<th>Existing Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>50’</td>
</tr>
<tr>
<td>Semi-Rural</td>
<td>100’</td>
</tr>
<tr>
<td>Rural</td>
<td>100’</td>
</tr>
<tr>
<td>Conservancy</td>
<td>50’</td>
</tr>
<tr>
<td>Natural</td>
<td>100’</td>
</tr>
</tbody>
</table>

**Average Setbacks for Existing Development**

In an effort to determine existing development patterns along the shoreline, a GIS analysis was conducted to determine the current average distance from the shoreline to the primary structure in each Environment Designation. These numbers are approximate, but provide a reasonable comparison of existing development patterns to the proposed buffers in Table 5 below.

**Table 2 Proposed Designations and Existing Primary Structure Distance from OHWM**

<table>
<thead>
<tr>
<th>Proposed Shoreline Environment Designation</th>
<th>Existing Primary Structure Distance from OHWM Averages and the Number in Each Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Intensity</td>
<td>108’*</td>
</tr>
<tr>
<td>Shoreline Residential</td>
<td>81’</td>
</tr>
<tr>
<td>Urban Conservancy</td>
<td>105’</td>
</tr>
<tr>
<td>Rural Conservancy</td>
<td>96’</td>
</tr>
<tr>
<td>Natural</td>
<td>141’</td>
</tr>
</tbody>
</table>

*The existing primary structure setback average for High-Intensity may not be a good measure due to the types of activities found on the shorelines in this Designation. For example, High-Intensity areas tend to be ferry terminals or industrial areas with primary structures set back much further to allow for the actual primary activity close to the shoreline.
Buffer Approach
As discussed above, an across the board review of current shoreline buffers was undertaken for this SMP update process. As a result of this review, Kitsap County is proposing a range of buffers intended to recognize site-specific shoreline functions, while still maintaining flexibility for appropriate shoreline development. Each individual Shoreline Environment Designation has been analyzed for the most appropriate buffers. Under this proposal, each Designation will have the following:

- **Standard Buffer**: the starting line from which most development activity should occur outside of; provides optimum buffer functions for the Environment Designation.
- **Reduced Standard Buffer**: development activity between the Standard Buffer and this line could occur with site-appropriate mitigation measures from the Mitigation Table (Appendix B);
- **Below Reduced Standard Buffer**: non-water dependent development activity below this line would require some form of variance.

Science Summary
This section includes a review of the science considered for the various buffer functions. Multiple buffer functions were considered to help facilitate meeting the ‘no net loss of shoreline ecological functions’ requirement under the WAC guidelines.

Some functions may not be as critical in certain designations due to existing conditions. For example, microclimate and corridors for some wildlife may not be obtainable in the High-Intensity or Shoreline Residential Designations due to existing structures and uses. However, functions such as sediment or nutrient filtration may be most important in those environments. Therefore, Kitsap County has strived to meet the highest level of function for the most buffer functions in each Designation.

Each of the documents in Table 3 below have been reviewed under the Kitsap County SMP Science Policy (Resolution 022-2010) and the guidelines at WAC 173-26-201(2)(a), and found to be consistent with both unless otherwise noted.

<table>
<thead>
<tr>
<th>Buffer Function</th>
<th>References</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microclimate</td>
<td>Knutson and Naef, 1997</td>
<td>412’</td>
</tr>
<tr>
<td></td>
<td>May, 2003</td>
<td>100-328’</td>
</tr>
<tr>
<td>Shade</td>
<td>Brennan, et al., 2009</td>
<td>56-125’</td>
</tr>
<tr>
<td></td>
<td>May, 2003</td>
<td>98-262’</td>
</tr>
<tr>
<td></td>
<td>FEMAT</td>
<td>121’</td>
</tr>
<tr>
<td>Sediment Filtration</td>
<td>Brennan, et al., 2009</td>
<td>92-299’</td>
</tr>
<tr>
<td></td>
<td>May, 2003</td>
<td>100’</td>
</tr>
<tr>
<td></td>
<td>FEMAT</td>
<td>82-197’</td>
</tr>
<tr>
<td></td>
<td>Knutson and Naef, 1997</td>
<td>78’</td>
</tr>
<tr>
<td></td>
<td>Neibling and Alberts, 1979*</td>
<td>7.9’</td>
</tr>
<tr>
<td></td>
<td>Desbonnet, et al., 1994</td>
<td>82’ (80%)</td>
</tr>
<tr>
<td>Pollutant Filtration</td>
<td>Brennan, et al., 2009</td>
<td>16-1,968’</td>
</tr>
<tr>
<td></td>
<td>May, 2003</td>
<td>66-196’</td>
</tr>
<tr>
<td></td>
<td>Knutson and Naef, 1997</td>
<td>78’</td>
</tr>
<tr>
<td></td>
<td>Desbonnet, et al., 1994</td>
<td>148’ (“adequate”)</td>
</tr>
<tr>
<td>Buffer Function</td>
<td>Average Buffer</td>
<td>Average minus outliers</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Microclimate</td>
<td>280’</td>
<td>100’</td>
</tr>
<tr>
<td>Shade</td>
<td>132’</td>
<td>115’</td>
</tr>
<tr>
<td>Sediment Filtration</td>
<td>117’ [133’]</td>
<td>105’ [111’]</td>
</tr>
<tr>
<td>Pollutant Filtration</td>
<td>231’ [412’]</td>
<td>63’ [122’]</td>
</tr>
<tr>
<td>Large Woody Debris</td>
<td>161’</td>
<td>147’</td>
</tr>
<tr>
<td>Wildlife Habitat</td>
<td>318’</td>
<td>239’</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>197’ [211’]</strong></td>
<td><strong>157’ [172’]</strong></td>
</tr>
</tbody>
</table>

*Numbers in brackets indicate the results when (*) documents were not considered based on their applicability to Kitsap County shorelines.*

**Analysis of Proposed Buffers**

In general, the Shoreline Environment Designations below are listed in order from those with the least sensitive to the most sensitive shoreline habitat and functions. Proposed buffer widths are also summarized in Table 5 below.

**High Intensity**

The proposed Standard Buffer is 50’, with no Reduced Standard Buffer for this designation. This buffer width represents the minimum recommended for basic wildlife functions with 60% pollution removal, is within the range of recommended values for sediment filtration and large woody debris functions, but is not quite to the minimum...
recommendation for shade functions. It is also the lower-median for all buffer function widths recommended in the documents listed in Table 3.

Shoreline Residential
The proposed Standard Buffer is 85’. This buffer width represents the median buffer recommended for sediment filtration, is inclusive of the median recommended buffer for pollutant filtration, and is inclusive of the minimum recommendations for all buffer functions except microclimate. The average setback for existing primary structures located within this Designation is approximately 81’.

The proposed Reduced Standard Buffer is 50’ (see explanation for High-Intensity). To reduce the full 35’, the applicant would need to choose three mitigation options from the Mitigation Standards Table or complete a site-specific Shoreline Mitigation Plan.

Urban Conservancy
The proposed Standard Buffer is 100’. This buffer represents the median recommended buffer width for all functions, and is the average or median buffer width for microclimate, sediment filtration, and pollutant filtration. The average setback for existing primary structures located within this Designation is 105’.

The proposed Reduced Standard Buffer is 85’ (see explanation for Shoreline Residential).

Rural Conservancy
The proposed Standard Buffer is 130’. This buffer represents the approximate average and median buffer recommendation for shade cover functions. It is also inclusive of microclimate, sediment filtration, and pollutant filtration functions, and meets the Forest Ecosystem Management Assessment Team (FEMAT) recommendation for large woody debris input.

The proposed Reduced Standard Buffer is 100’ (see explanation for Urban Conservancy). The approximate average setback for existing primary structures located within this Designation is 96’.

Natural
The proposed Standard Buffer is 200’. This buffer represents the total average (197’) and upper median (196’) recommended buffer width for all functions. Had the full recommended average for wildlife habitat been required, the buffer would have been beyond the 200’ SMP jurisdiction. However, 200’ does provide protection for the greatest number of functions while ensuring that ‘no net loss’ is being achieved within the shoreline jurisdiction.

The proposed Reduced Standard Buffer is 150’. This buffer still captures the total average and median recommended buffers for all functions (minus outliers). The average setback of existing primary structures located within this Designation is 141’. A 50’ buffer reduction would require the applicant to choose three mitigation options from the Mitigation Standards Table, or complete a site-specific Shoreline Mitigation Plan.
### Table 5 Proposed Buffer Widths by Designation

<table>
<thead>
<tr>
<th>Shoreline Environment Designation</th>
<th>Proposed Standard Buffer</th>
<th>Proposed Reduced Standard Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Intensity</td>
<td>50’</td>
<td>50’ (no reduction)</td>
</tr>
<tr>
<td>Shoreline Residential</td>
<td>85’</td>
<td>50’</td>
</tr>
<tr>
<td>Urban Conservancy</td>
<td>100’</td>
<td>85’</td>
</tr>
<tr>
<td>Rural Conservancy</td>
<td>130’</td>
<td>100’</td>
</tr>
<tr>
<td>Natural</td>
<td>200’</td>
<td>150’</td>
</tr>
</tbody>
</table>

### Bibliography – Specific Buffer Recommendations


**Bibliography - General Buffer References**

*In addition to the references above which provide specific buffer width recommendations, the following references provided general guidance on the functions and applicability of vegetated buffers.*


Pentec Environmental. Use of Best Available Science in City of Everett Buffer Regulations. Project Number 253-003. 2001. Edmonds, WA.


APPENDIX A

How Critical Saltwater Habitats and Critical Freshwater Habitats are Addressed in the Draft SMP Update

These are a summary of some of the regulations which are specific to critical habitats. Other regulations may be protective of such habitats, but are more general to meet the “no net loss” requirement.

Agriculture
- Lot wastes and manure solids are not to be stored with the SMP jurisdiction, including floodways and floodplains.

Aquaculture
- Must be located and designed to avoid, minimize, etc. impacts to critical habitats
- Non-structural methods preferred over structural methods
- Species which have not been previously cultivated in Washington must receive approval from WDFW and WDOH and comment from applicable tribes.
- Predator exclusion order of preference and standards

Barrier Structures
- Prohibited in Natural Designations, CUP in all others, and SDP only for restoration purposes

Boating Facilities
- CUP where adjacent to the Natural Designation
- Dredging which modifies the littoral drift of sediment are required to supply beach nourishment
- Same location and design mitigation sequencing as Mooring Structures

Commercial Development
- Prohibited in the Aquatic Designation, except for water-dependent appurtenances to commercial development

Dredging
- Prohibited in Natural Designation, CUP in all others
- Allowed only for the safety of existing uses and is restricted to previously dredged channels

Filling
- Prohibited in Natural, except for restoration; CUP in other Designations, SDP for restoration

Forest Practices
- CUP in the Natural Designation
- “30% rule” on shorelines of statewide significance

Industrial Development
- Prohibited in the Natural and Rural Conservancy designations, CUP if water-oriented in the Urban Conservancy and Shoreline Residential designations.
- Prohibited in the Aquatic designation unless water-dependent and allowed in the upland designation, and then with a CUP
- Located and designed according to mitigation sequencing

Mining
- Prohibited water-ward of the ordinary high water mark.

Mooring Structures
- Prohibited in the Natural Designation for single-use; CUP for joint-use or public access
- Existing covered moorage associated with single family residences must be removed at the end of the life of the structure, or relocated away from CSH when greater than 50% of the structure is repaired.
- Non-motorized uses shall provide the greater of 25’ horizontal buffer from eelgrass, a horizontal buffer equal to the distance of the shadow cast by the structure and vessel, or a 4’ vertical buffer from relevant aquatic
vegetation. Motorized uses also have the option of a buffer equal to the 3.5X the turning radius of the longest vessel to use the structure.

- Areas documented, or potential habitat for, forage fish shall either be surveyed over a period of two years to show no forage fish presence, or develop the structure with the standards required for forage fish habitat; Work-window restrictions and buffers.
- Double the piling spacing (40’) for structures built in forage fish habitat or with aquatic vegetation.
- Buoys must have helical anchors with a mid-line float and located in deep waters to avoid impacts to aquatic vegetation
- No over-water structures allowed within 100’ of a stream mouth, in either lakes or marine shoreline.

Recreation
- Located and designed according to mitigation sequencing

Residential Development
- New overwater residences prohibited
- New residential development must be located to not need future shoreline stabilization

Shoreline Stabilization
- If demonstrated necessary, CUP required in all designations for hard shoreline stabilization
- Soft shoreline stabilization permitted with a SDP (SFRs may be exempt from SDP)
- If the ordinary high water mark has been reestablished, the replacement structure will need to be relocated accordingly
- Habitat surveys required
- Junk materials or those with certain chemical treatments may not be used

Transportation
- Bridges and culverts must be large enough to pass the 100 yr. flood waters and consideration for associated debris flows.

Utilities
- Sewage treatment plants should be located where the treated effluent will have the least impact on critical habitats, including recreational shellfish beds.

APPENDIX B

[Refer to Mitigation Standards Table]