Chelan County Shoreline Master Program Update

Buffer and Vegetation Conservation Proposal Review | Lisa Grueter, AICP, BERK Consulting, Inc.

Introduction

Chelan County is updating its Shoreline Master Program (SMP). A key topic for decision-makers is buffer widths and associated vegetation conservation provisions. This paper provides a planning review of the Chelan County SMP Working Adoption Draft dated October 10, 2017 in terms of:

- Current and draft SMP buffer and vegetation conservation standards;
- Comparable counties standards;
- Professional literature or resource agency guidance on buffers; and
- Considerations and options to assist Chelan County in its review of the proposed SMP buffers.

The document is organized into the following subsections:

Planning Context

Chelan County extends from the Cascade Mountain Range to the semi-arid Columbia River basin. As described in the County's Comprehensive Plan over 80% of the county (more than 1.5 million acres) is under federal or state management; likewise, most of the 133 shoreline waterbodies (70%) are entirely on federal lands. Private lands are focused along shorelines including the Wenatchee River, Columbia River, Entiat River, and Lake Chelan.

The four watersheds – Chelan, Entiat, Wenatchee, and Squilchuck/Stemilt – have been extensively studied and are priorities for conservation activities. Many of the rivers, streams and lakes contain priority fish species. Riparian and wetland habitats are found along county river and lake shorelines. Wildlife migration corridors are extensively mapped throughout the county within and beyond shoreline jurisdiction. Watershed plans identify areas of degradation and intactness, and enhancement opportunities for riparian areas and other fish and wildlife habitats. Retaining riparian areas and native shrubs and trees, and adding them through enhancement activities with willing landowners are implementation strategies identified in the watershed plans. In addition to voluntary watershed programs, Chelan County also applies regulations to protect shoreline ecological functions.

Current and Proposed Shoreline Vegetation Conservation and Buffer Standards

The Chelan County Code requires buffers to protect habitat, such as riparian areas, in its critical areas ordinance, including buffers along shorelines of the state:

> *11.78.090 Riparian buffers. (1) The area adjacent to the shoreline is the riparian buffer. The intent of the riparian buffer is to maintain riparian habitat functions, structure and value. … (2) Vegetation within the riparian buffer shall be maintained as riparian habitat. …*

Currently the County varies the width of shoreline buffers based on the shoreline environment designation and the intensity of the land uses. Due to the more intense development pattern along lower Lake Chelan, a reduced buffer is specified. See Exhibit 1.

With the SMP Update, Chelan County has considered amending its shoreline buffers, which are half or less of the current buffers. See Exhibit 1.

Exhibit 1. Chelan County Shoreline Buffers in Current Critical Areas Ordinance

Shoreline Environment	Current: Low Intensity (Feet)	Current: High Intensity (Feet)	Proposed: Low Intensity (Feet)	Proposed: High Intensity (Feet)
Natural	200	250	100	150
Conservancy	200	250	75	100
Rural	100	150	50	75
Urban	75	100	35	50
Lower Lake Chelan	25	50	25	25

Source: Chelan County Code Section11.78.090 Riparian Buffers

CURRENT BUFFER AND VEGETATION CONSERVATION FLEXIBILITY

While current buffers are relatively wide, the code provides flexibility with buffer averaging and buffer reductions:

- Buffer width averaging where the buffer may be reduced in places by 25% or 25 feet, whichever is less, provided the area is "made up" in other locations.
- Buffer reductions for lots less than 300 feet in depth where the riparian buffer may be reduced to a maximum of 25% of the lot depth, but can be no less than 25 feet in width or less than the common line setback, whichever is greater.[1]

[1] The County's SMP does not establish buffers in the same way as the County's critical areas ordinance, but includes a common line setback from the ordinary high-water mark determined by averaging the setbacks of structures existing on waterfront adjacent to the lot where development is to be built. (Section 7.2.170)

Further, the current code allows several exemptions from the buffer standards, such as: maintenance, repair, operation of existing facilities, education, research, nature trails, passive recreation, one access/view corridor per parcel (20 feet or less in width), fire management, agricultural irrigation, restoration projects, buildings on lots where other development intervenes, noxious weed control, change of 25% of existing structures where they are not located closer to the critical area. (Chelan County Code Section 11.78.020 Exemptions)

In addition to shoreline buffers, Chelan County applies critical areas regulations to protect the functions and values of wetlands, fish and wildlife habitat conservation areas including non-shoreline streams, critical aquifer recharge areas, flood hazards, and geologic hazards.

PROPOSED BUFFER AND VEGETATION CONSERVATION FLEXIBILITY

With the proposed SMP, buffer averaging and administrative reductions of shoreline buffers would be allowed but several would be new or amended as listed below. New or modified provisions that appear to differ meaningfully from current regulations are marked with an asterisk:

- Matching a common line setback of abutting existing development* (changed to lots less than 100 feet in width; buffer is measured to the first attached deck or eave, whichever is closer)
- Fire protection* (allowed now, but when an agency requires fire protection measures; criteria and extent increased)
- Site specific modifications where a 25% reduction of the buffers is allowed on natural, conservancy, or rural shoreline buffers if the remaining buffer is enhanced* (new)
- Buffer width averaging where the buffer may be reduced in places by 25%* (changed, no numeric cap)
- A 50% reduction in the buffer where an agricultural use is being converted to a non-agricultural use and buffer restoration is accomplished* (new)
- Limiting the buffer to the waterward side of a legally established road, open irrigation canal system, railway, or utility corridor, at least 20' wide* (changed, adds more linear facilities than roads and railroads)
- Limiting buffers to the waterward side of a property where other development intervenes* (changed criteria)
- Allowing legally established pre-existing development to modify a buffer with a mitigation plan* (changed for any use, not limited to which side the expansion occurs, requires a mitigation plan; currently allowed for existing single-family and limited to being no closer to critical area)
- Allowing fish enhancement or restoration
- Allowing lots of 300 feet or less to have a buffer reduction of 25%

Other standards would require that shoreline developments maintain vegetation in the required buffer and only remove vegetation when permitted by the County with a mitigation plan. Uses that may be allowed in a buffer include water dependent uses, passive activities, tree removal to address safety concerns, fire protection options, and residential view corridors of 25% of the lot frontage or 25 feet whichever is less* (increased over current; similar to other SMP examples).

Critical areas regulations would also be modified in the SMP Update as they pertain to critical areas within shoreline jurisdiction (e.g. wetlands). For the most part, proposed critical area regulations inside shoreline jurisdiction would be the same as current regulations in terms of buffers, but some buffer flexibility conditions would differ. For example, the wetland buffer averaging provisions would allow a reduction in one area of 50% rather than 25% allowed today, provided the area reduced is made up elsewhere.

In sum, the proposed October 2017 shoreline buffers would be half or less of current standards. In some cases, the buffer modification allowances have different qualifications that may lead to smaller buffers. Critical area regulations (e.g. wetlands) are similar in buffer widths, but some buffer flexibility measures are altered.

In the next section, we consider agency guidance and literature and other County examples for comparison.

Guidance and Examples

SMP GUIDELINES

SMP Guidelines require counties and cities with shorelines of the state to establish vegetation conservation standards that protect and restore the ecological functions and ecosystem-wide processes performed by vegetation along shorelines:

> *WAC 173-26-221(5)(c): 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.*

Vegetation conservation standards should address principles contained in the SMP Guidelines, such as, protect and restore the ecological functions and ecosystem-wide processes performed by vegetation along shorelines, avoid adverse impacts to soil hydrology, and reduce the hazard of slope failures or accelerated erosion. SMPs are to consider scientific information such as *Recommendations for Washington's Priority Habitats*, prepared by the Washington State Department of Fish and Wildlife (see Attachment for full WAC rules on vegetation conservation).

Additionally, SMPs are to "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)) Additional standards address requirements to have wetlands buffers and other protective measures for critical areas.

PROFESSIONAL LITERATURE & RESOURCE AGENCY GUIDANCE

The Washington Department of Ecology (Ecology) has prepared a SMP Handbook that helps counties and cities prepare SMPs that meet the Shoreline Management Act and implementing SMP Guidelines in WAC 173-26. Handbook Chapter 11 addresses "Vegetation Conservation, Buffers and Setbacks" (Ecology publication 11-06-010).

The 2011 Handbook summarizes literature cited in WAC 173-26-221(5), i.e. *Management Recommendations for Washington's Priority Habitats* by Washington State Department of Fish and Wildlife (WDFW).

WDFW prepared management recommendations for Riparian areas in 1997.[2] Buffer widths for Shorelines of the State are about 250 feet. See Exhibit 2.

Exhibit 2. WDFW Standard Recommended Riparian Habitat Area (RHA) widths 1997

Stream Type	Recommended RHA widths in meters (feet)
Type 1 and 2 streams; or Shorelines of the State, Shorelines of Statewide Significance	76 (250)
Type 3 streams; or other perennial or fish bearing streams 1.5-6.1 m (5-20 ft) wide	61 (200)
Type 3 streams; or other perennial or fish bearing streams <1.5 m (5 ft) wide	46 (150)
Type 4 and 5 streams; or intermittent streams and washes with low mass wasting* potential	46 (150)
Type 4 and 5 streams; or intermittent streams and washes with high mass wasting* potential	69 (225)

*Mass wasting is a general term for a variety of processes by which large masses of rock or earth material are moved downslope by gravity, either slowly or quickly.
Source: Knutson, K. L., and V. L. Naef. 1997

Per the Guidebook, SMPs need to protect the functions provided by shoreline vegetation, yet reflect local shoreline conditions. Shoreline buffers may differ than those in a critical areas ordinance where in addition to ecological functions, buffers should reflect development patterns and anticipated preferred uses (e.g. water dependent). At the same time, current scientific and technical information should be considered. SMP Guidelines do not require a return to pre-European settlement conditions.

The 2011 Handbook gives guidance on buffer widths based on the numerous SMPs approved across the state, as follows:

- **Undeveloped shorelines with largely intact ecological functions** should be protected with buffers of 150 feet to 200 feet. Shorelines with extensive critical areas, or within channel migration zones or floodplains, also will need protective buffers to protect life and property during flooding.
- **Rural residential development,** where houses and appurtenances such as garages and sheds cover about 25 – 35 percent of the ground, some area is landscaped, and the rest is in native vegetation, would likely need buffers of 150 feet to protect existing functions.
- **Small-lot residential development** in highly developed areas provides some ecological functions. Buffers or setbacks with vegetation conservation requirements of roughly 30 to 60 feet may be appropriate. If these areas include critical areas, larger buffers likely will be needed.

[2] Knutson, K. L., and V. L. Naef. 1997. Management recommendations for Washington's priority habitats: riparian. Wash. Dept. Fish and Wildlife., Olympia. 181pp. Available: http://wdfw.wa.gov/publications/pub.php?id=00029. Accessed: October 27, 2017.

- **Heavily developed waterfront areas** with port facilities, water-dependent industry, overwater structures such as docks for containerized shipping or other intensely developed areas may have limited ecological functions. In these areas, buffers or setbacks may not be appropriate. Regulations should address retention of any existing vegetation and encourage restoration where it is appropriate. Busy waterways still harbor fish and other species.

The Handbook also suggests that "uses in buffers should be minimal, because preserving shoreline functions is paramount." The Handbook indicates common exceptions are passive recreation such as trails.

The Handbook recognizes SMPs can offer flexibility, including buffer averaging, common line setbacks and administrative buffer reductions:

- **Buffer Averaging:** A strict limit to a reduced buffer depth should be set in the SMP; typically, this limit is no more than a 25% reduction and may not go below a set minimum buffer.
- **Administrative Buffer Reductions:** A strict limit (typically 25%) to a reduced buffer depth should be set in the SMP so that reductions may not go below a set minimum buffer. Incentive programs providing enhanced buffer vegetation are sometimes linked to the buffer reduction criteria. Ecology suggests that buffer reductions and alternative designs should be set up as shoreline Conditional Use Permits that would require approval by Ecology.
- **Common Line Setbacks:** Common line setbacks apply to small, undeveloped lots in areas where most lots are developed and vacant parcels are adjacent to and interspersed among developed lots. Criteria should take into account variations in shore contours, topography, geology, soils, vegetation and other physical characteristics on a case-by-case basis to ensure equitable treatment for the property owner while providing the optimum buffer functions considering the circumstances. Enhanced buffer vegetation or features are also sometimes linked to the buffer reduction criteria associated with a common line setback.
- **Other:** Existing houses within the standard buffer are often allowed some expansion, typically to the side or rear away from the water body.

The 2011 SMP Handbook recommends that counties and cities keep up with newer science. A literature review prepared in 2013 addresses semi-arid landscapes indicates that most studies (e.g. the 1997 study above) are more applicable to riparian conditions found in higher rainfall areas with forested, salmon-bearing rivers and streams. Thus, the buffers in Exhibit 2 may be more appropriate in the upper watersheds in Chelan County that have less disturbance and more intact ecological conditions.

The "Final Draft Semi-Arid Riparian Functions and Associated Regulatory Protections to Support Shoreline Master Program Updates" by Anchor QEA, LLC, June 2013 was commissioned by Grant County and funded by Ecology. It was designed to "aid in establishing riparian buffer protection provisions in upcoming SMP updates for counties, cities and towns in the Columbia Basin Plateau." That would include the eastern portion of Chelan County near Wenatchee.[3] The report described scenarios and buffer guidance:

[3] See maps available from USGS and Washington State Department of Natural Resources at, respectively: https://pubs.usgs.gov/fs/2015/3063/ and https://www.dnr.wa.gov/programs-and-services/geology/explore-popular-geology/geologic-provinces-washington/columbia-basin#.3.

- **Smaller stream and narrow riparian corridor, partially incised channel and limited habitat:** Recommend 50-foot buffer. Riparian buffer width should be based on water quality protection, which provides the greatest width of protection. Opportunity to reduce width if additional surface water quality BMPs [best management practices] and treatment measures employed and/or with habitat enhancements and demonstration of no net loss of ecological function.
- **River delta with wider riparian corridor, active floodplain and complex habitat:** Recommend 100-foot buffer. Riparian buffer width should be based on fish and wildlife habitat, and organic input, which provides the greatest width of protection. Limited opportunity to reduce buffer width except perhaps with habitat enhancements and demonstration of no net loss of ecological function. Wetland buffers will also apply in many areas and provide additional protection.
- **Large river with narrow riparian corridor and steep slopes/ cliffs dominate:** Recommend 65-foot buffer. Riparian buffer width should be based on water quality protection, which provides the greatest width of protection. In this example, regulations of geologic hazards likely to further require setback beyond the recommended riparian buffer.
- **Smaller river or larger stream with narrow riparian corridor, limited floodplain and less complex habitat:** Recommend 65-foot buffer. Riparian buffer width should be based on fish and wildlife habitat, and organic input, which provides the greatest width of protection. Opportunity to reduce width if additional surface water quality BMPs and treatment measures employed and/or with habitat enhancements and demonstration of no net loss of ecological function.
- **Lake with narrow riparian corridor and mix of developed shoreline with open space: Recommend 50-foot buffer.** Riparian buffer width should be based on water quality protection, which provides the greatest width of protection. Opportunity to reduce width if additional surface water quality BMPs and treatment measures employed and/or with habitat enhancements and demonstration of no net loss of ecological function.

This latter scenario with a lake having narrow riparian vegetation and a mix of development and open space was considered in the City of Chelan SMP Update.[4] Along Lake Chelan in the city limits, shoreline buffers vary 25-50 feet for residential and lower in downtown, given the developed conditions, narrow vegetation, water quality requirements, requirement to hook up to sewer, and the seasonally managed lake level. This is comparable to Chelan County's current Lower Lake Chelan buffer range of 25-50 feet.

[4] See City of Chelan SMP Update, Cumulative Impacts Analysis Appendices, including: City of Chelan Shoreline Master Program: Buffer Science, October 2012, The Watershed Company/BERK; and Updated Review of Buffers and Scientific Literature Relevant to Lake Chelan, The Watershed Company, September 26, 2014.

EXAMPLE COUNTIES

For the purposes of this white paper, three counties' SMP buffers and vegetation conservation conditions were reviewed – Kittitas, Spokane, and Yakima. All lie in Eastern Washington and have similar climates and terrains. Kittitas and Yakima are more like Chelan County extending from the Cascades east to Columbia River Basin. See Exhibit 3.

Kittitas County applies buffers of 100-150 feet, smaller than Chelan County's current buffers, but with relatively fewer buffer modifications than Chelan County. Yakima County has a 100-foot buffer with no modifications except through variance; water dependent uses or as bridges may locate in buffers. Spokane County's buffers are comparable to Chelan County's current buffers but simpler, and offer flexibility in buffer modifications. Kittitas and Spokane Counties do not have an Urban shoreline environment, while Yakima County does.

Exhibit 3. Example Shoreline Buffer and Vegetation Management Approaches

Provision	Kittitas County	Spokane County	Yakima County
Buffers (feet)	Natural: 150 Urban Conservancy, Shoreline Residential, Rural Conservancy: 100	Natural: 200 Rural Conservancy: 150 Urban Conservancy: 150 Shoreline Residential: 100 Certain uses have specific buffers similar in all use environments: ▪ Forest Practices: 50 ▪ Water dependent uses, boat ramps, marinas, bridges: no buffer ▪ Individual wastewater treatment: 100 ▪ Public trails:100	All shoreline environments, shorelines streams and lakes: 100 feet. Wetlands – additional buffers by type. Buffers for certain uses: ▪ Water Dependent: 0 feet but minimize buffer impacts. ▪ Water Related: 100 feet, unless use requirements make it unavoidable. ▪ Water Enjoyment: 100 feet, sensitive design next to buffer.
Buffer Conditions	Maintain in a well-vegetation condition that supports predominance of native plants that would occur in relatively undisturbed setting.	Clearing of vegetation, tillage and application of fertilizers and chemical pesticides is prohibited in shoreline buffers, except those activities which are specifically designed elements of ecological restoration, including removal of noxious weeds, and compensation and mitigation activities.	The adequacy of these standard buffer widths presumes the existence of a relatively intact native vegetation community in the buffer zone adequate to protect the stream functions and values at the time of the proposed activity. If the vegetation is degraded, then no adjustment to the buffer width should be granted and re-vegetation should be considered. Where the use is being intensified, a degraded buffer should be re-vegetated to maintain the standard width.

Provision	Kittitas County	Spokane County	Yakima County
Buffer Reductions/Modifications	Interrupted buffer – buffer ends at existing legal established public/private road with critical area report Buffer averaging (max reduction 25% less than required, no less than 25 feet, whichever is greater).	Common Line Setback (except in Natural): No less than 50 feet landward of ordinary high-water mark. Administrative Buffer Width Averaging on existing legal lots of record, no more than 25% reduction. Administrative Buffer Width Reduction for new single-family residences on existing legal lots of record, no more than 25% reduction. Residential development on existing lots (except in Shoreline Residential) for which the maximum lot depth dimension is less than 200 feet, may be constructed landward of a 100-foot buffer of undisturbed vegetation.	Buffers may only be reduced by variance.
Buffer Uses	Shoreline View Corridor (max 25 ft. or 25% of frontage) Public trails Private pathways Selective pruning Hazard tree removal Invasive species management Water-dependent, water related utilities and public facilities Irrigation structures	Shoreline View Corridor (max 25 ft. or 25% of frontage) Private trails (limited in width and other features) Access to watercraft launches Removing noxious weeds Maintain electrical transmission and distribution lines Hazard tree removal	Roads and railroads crossings Utility transmission lines and facilities crossings Shore stabilization projects necessary to respond to threats to property, etc. Fill only with water dependent use Reclamation

Comparison and Alternative Buffer Options

Exhibit 4 provides a comparison of buffers and modifications per literature reviewed, agency guidance, and example counties. Current Chelan County shoreline buffers are greater than Ecology Guidebook buffers and Kittitas and Yakima Counties' buffers. Current Chelan County shoreline buffers are similar to standards for Spokane County but more complex with the low-high land use intensity. The proposed Chelan County October 2017 buffers are lower than the examples.

The table includes two alternative buffer options. Option 1 is a simpler standard buffer (without low-high intensity) and a smaller list of exceptions given the reductions in the standard buffer. Option 2 retains Chelan County's low-high intensity range. It moderately reduces standard buffers, and includes potential buffer modifications with specific circumstances. Option 2 buffer reduction and flexibility measures are similar to the range of options allowed in either the current or proposed SMP, and other examples; however, there are specific limits and caps as suggested by Ecology guidance.

Exhibit 4. Comparison of Buffers

Shoreline Environment	WDFW 1997 Riparian Habitat Areas	Ecology Handbook 2011	Semi-Arid Riparian Functions and Associated Regulatory Protections 2013	Kittitas County	Spokane County	Yakima County	Chelan County Current	Chelan County Proposed October 2017	Option 1. Chelan County Buffer Alternative	Option 2. Chelan Buffer Alternative
Natural	Type 1 and 2 Streams (Shorelines of the State): 250	150-200	Depending on stream size, width of riparian area, floodplain, slopes, etc.: 50-65-100	150	200	100	200-250	100-150	150	150-200
Conservancy		150-200		--	--	100	200-250	75-100	100	150-200
Rural / Rural Conservancy		150-200 (Rural Residential 150)		100	150	100	100-150	50-75	100	100-150
Urban Conservancy		150-200		100	150	100	--	--	--	--
Shoreline Residential		Small Lot: 30-60		100	100	--	--	--	--	--
Urban		Water dependent, over water: 0 Small Lot: 30-60		--	--	100	75-100	35-50	50	50-75
Lower Lake Chelan	--	--	--	--	--	--	25-50	25	25-50	25-50
Buffer Averaging		25%, with set cap	--	25% less than required, no less than 25 feet	On legal lots of record, max. 25% reduction	--	25% or 25 feet max.	25%, no cap	Current code	Proposed code
Buffer Reductions		A strict limit (typically 25%), consider incentives like enhancement	--	--	25% Lots <200-foot depth, min 100-feet buffer	--		25%, no cap, with enhancement 50% ag conversion with restoration	New: Where a river/stream is incised with steep slopes (e.g. 40%+), and there is naturally a narrow riparian corridor and limited habitat, the buffer may be reduced to 50 feet minimum. *	General buffer modification: 25% reduction, with enhancement (except not in Natural) Buffer near incised shoreline with steep slopes and narrow riparian-same as at left. *
Common-line		Allow, consider physical characteristics (topo, soils, etc.)	--	--	Yes, 50 feet min	--	Lots < 300-foot depth, 25% of lot depth, and buffer is no less than 25 feet or common line, whichever is greater. May require mitigation plan.	Lots < 300-foot depth: Similar to current code. Reduce buffers to accommodate existing development with common line if lots are 100' or less in width	Shallower Lots < 300 feet – same as current code	Shallower Lots < 300 feet – same as current code Lots <100 ft. width, allow common line measurement; buffer is no less than 25 feet or common line, whichever is greater
Other		Existing home expansion, away from critical area		Interrupted buffer – buffer ends at existing legal established public/private road	--	--	Intervening development, roads, and railroads Existing home 25% expansion, away from critical area	Intervening development, roads, railroads, canals, utilities Existing development, no cap on size with mitigation	Current Code: Roads, railroads Intervening development proposed code Existing home 25% expansion, away from critical area, except for kitchen expansions or upper stories	Intervening development: where intervening lot is 50% developed Intervening roads, railroads, canals, utilities as proposed Proposed-modified: Existing development, 25% expansion, with mitigation

Note: *Similar to scenario in "Final Draft Semi-Arid Riparian Functions and Associated Regulatory Protections to Support Shoreline Master Program Updates" by Anchor QEA, LLC, June 2013. Geologic hazard or other shoreline standards may apply where shorelines are vulnerable to erosion so that structural improvements are not required.

Other Recommendations

VEGETATION CONSERVATION AND FIRE MANAGEMENT

Since the buffers are proposed for reduction, it is appropriate to review vegetation management allowances within buffers to ensure that the remaining buffer area can function as intended. This is to be balanced with health and safety issues such as fire management.

The vegetation management standards in proposed Section 4.5 allow a 30-foot building clearing area for structures similar to Wildland Urban Interface Codes and other professional recommendations (e.g. Firewise). We suggest that the code clearly state the 30-foot defensible space clearing is for existing structures.

The proposed code allows 100 feet of tree thinning from residences and garages to avoid the spread of fire at tree tops. The potential disturbance of 100 feet from structures means the proposed 25-150 foot buffers above could be reduced in their ecological functions and values. We suggest that criteria that require the retention of native plants in the understory be included similar to Spokane County's approach.

We also suggest that new structures and development be planned with a defensible space limit as part of their disturbance footprint outside the buffer similar to Spokane County's approach.

BUILDING SETBACK IN HAZARD AREAS

The County may wish to consider a provision that allows for the Shoreline Administrator to require a building setback upland of the shoreline buffer edge of 25 feet, or as otherwise recommended by a qualified professional, to protect public health and safety such as in channel migration zones or other geologic or flood hazard areas.

CRITICAL AREAS REGULATIONS IN SMP

The County appears to propose a more succinct set of critical areas regulations than applies today, but most standards continue current buffer widths that were developed to protect critical areas functions and values. Some allowed buffer reductions or averaging measures and caps differ in the proposed code compared to the County's current regulations. The County could consider retaining current caps similar to Ecology guidance on shoreline buffers.

Attachment: SMP Guideline Excerpt – Shoreline Vegetation conservation

WAC 173-26-221 (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).