Thurston County Board Briefing

Briefing Date/Time:	**June 14, 2023 9:00-10:00 AM**
Office/Department & Staff Contact:	**Community Planning & Economic Development** **Andrew Deffobis, Senior Planner, ext. 5467** **Jeremy Davis, Operations Manager, ext. 2103** **Joshua Cummings, Director, ext. 4995**
Topic:	**SMP Public Hearing Follow-up**
Purpose: (check all that apply)	☑ Information only ☐ Decision needed — Optimal Time Frame for Decision is: (dd/mm/yyyy) ☐ Follow up from previous briefing

Synopsis/Request/Recommendation:

This briefing is a follow-up from the May 24, 2023 briefing, where the Board of County Commissioners (Board) began to discuss public comments received on the Shoreline Master Program (SMP) update. Staff will present information to facilitate Board discussion and decisions on elements of the draft SMP.

Background

Staff have prepared information on several topics discussed during the SMP public hearing and requested by the Board at its May 24, 2023 briefing. Additional topics will be reviewed at future briefings, including:

- Review of select proposed Shoreline Environment Designations
- Sea level rise, including shoreline armoring
- Aquaculture, including standards employed by other jurisdictions and County's role in aquaculture permitting
- Flooding issues/regulation of frequently flooded areas and connection to SMP
- Mooring structures, such as docks
- How to address remaining items in SMP decision matrix presented to Board in February 2023
- Review of substantive public comments

The following topics will be explored during the June 14, 2023 briefing. Staff have prepared some background information on each topic to facilitate Board discussion.

Use of Conforming vs. Nonconforming Terminology

The Board received numerous public comments from shoreline property owners relating to how legally existing structures in SMP jurisdiction are referenced in the draft SMP. Previous versions of the draft used the term "nonconforming" to describe structures, lots or uses that complied with existing

regulations when they were developed, but do not meet current codes.

The draft SMP allows such structures to remain, and to be modified or replaced in the same footprint. The draft increases the flexibility for such structures to expand, compared to the existing SMP. The main issue discussed during public comments is the term "nonconforming" itself, with many comments advocating use of the term "conforming".

RCW 90.58.620 authorizes local jurisdictions to refer to residential structures and certain appurtenances as conforming structures, even though they do not meet current standards. The Board's public hearing draft of the SMP uses the term "conforming", as authorized in state law, to refer to residential structures and appurtenances. The draft uses the term "legally nonconforming" to refer to other development and uses.

No Net Loss

Several comments were made regarding 'No Net Loss', a concept which means that there will be no net loss of ecological function as a result of implementing the SMP. WAC 173-26-186(8) directs that master programs "include policies and regulations designed to achieve no net loss of those ecological functions." The draft SMP addresses this concept in several areas, including but not limited to:

- Shoreline Environment Designations which reflect ecological conditions of specific shorelines
- Identification of ecological goals and policies early in the SMP update process, which guide development of regulations
- Permit standards that require demonstration of consistency of a proposal with the SMP and Shoreline Management Act, evaluation of cumulative impacts, and determination that no net loss will occur
- Development standards which seek to avoid or minimize detrimental impacts to the shoreline
- Mitigation requirements for unavoidable impacts to the shoreline
- A voluntary restoration plan to encourage and support restoration efforts on a reach scale

The updated SMP will track shoreline permits and exemption activities to evaluate whether it is achieving no net loss of ecological functions. Many parameters to be tracked are consistent with those recommended by the Department of Ecology in its Shoreline Master Program Handbook.

Project monitoring is required for restoration and mitigation projects, and the SMP requires system-wide monitoring of shoreline conditions and development activity that occur in shoreline jurisdiction, to the degree practical. The draft includes several parameters that will be tracked, including new shoreline development, shoreline variances, compliance issues, and net changes in impervious surface, fill, armoring, and vegetation. The draft is written so that specific parameters may be amended over time as new information becomes available.

Shoreline Buffers

Many comments discussed shoreline buffers. There was much support for Shoreline Residential buffers to remain at the proposed 50 foot width, which is also the current buffer for the most heavily developed shorelines. A significant amount of support was expressed for the Planning Commission recommendation as a whole. Additionally, there were several comments advocating for larger buffers in order to achieve no net loss of ecological function, such as those recommended by the Washington Department of Fish & Wildlife.

Buffers were also a focus area in the Planning Commission's review of the draft SMP, and proposed buffers have changed over time. A background memo prepared for the Planning Commission is attached to this briefing to provide more information. (Note: The buffer widths attributed to the draft SMP in this memo have changed since the memo was produced.) The best available science literature utilized in the 2012 Critical Areas Ordinance update is also attached, for the Board's reference.

Assessment of Matrix Items Without Direct Public Comment

The Board directed staff to include items from the February 2023 SMP decision matrix in the Board's public hearing draft, in order to facilitate public comment on these items. At its May 24, 2023 briefing, the Board discussed possibilities for addressing the items in the decision matrix. One question raised was whether any items from the decision matrix did not receive public comment.

Staff reviewed public comments and the decision matrix to determine which items did not specifically receive public comment. While some comments generally addressed the *topics* covered by items in the decision matrix, the following items from the matrix do not appear to have received specific public comment: 8-11, 13, 18-19, 21, 23, 27-30 from the list of "Ecology indicated required items", and comments 31-37, 39-47, 49-58, 60-66, 68 from the "Ecology indicated helpful items".

The Board received at least one comment on the remaining 21 items in the decision matrix. Some comments were substantive, and some expressed support for either the Planning Commission recommendation or for the included changes, depending on the issue. Additionally, the Board received several comments in support of the Planning Commission's recommendation, which does not incorporate any items from the decision matrix.

Documents Attached:

- Attachment A: May 2019 Planning Commission Memo – Shoreline Buffers
- Attachment B: Best Available Science Bibliography from Critical Areas Ordinance
- Attchment C: Board SMP Decision Matrix – February 2023

Summary & Financial Impact:

The Board has received public comments on several topic areas of the SMP update. The Board will provide guidance to staff for preparation of the final SMP draft.

Affected Parties:

County residents, CPED, Public Works

Decision Points:

1. Whether to retain use of term "conforming" for legally existing residential structures and appurtenances as authorized by state law, as reflected in Board public hearing SMP draft:

Considerations:

- Retaining use of "conforming" for residential structures is consistent with state law, and would address concerns expressed by many residents
- There is no state law provision to apply the term "conforming" to nonresidential structures and uses.

2. Does the Board wish to modify no net loss monitoring standards:

Considerations:

- The draft SMP incorporates several elements designed to achieve no net loss of ecological function.
- Impacts occurring from implementation of the SMP will be tracked in order to meet the goal of 'no net loss of ecological function'.
- The Board received comments on this topic requesting for additional elements to prevent net loss.

3. Does the Board wish to modify buffer standards:

Considerations:

- The Board received comments advocating for increased buffers.
- The Board received comments in support of the Planning Commission's recommended buffers.

4. Whether to retain changes reflected in Board's SMP public hearing draft which received no public comment:

Considerations:

- The Board directed staff to incorporate changes identified in the February 2023 SMP decision matrix to allow public comment.
- Proposed changes increase consistency of the draft SMP with state law, and improve internal consistency, clarity, implementation. Some specific changes increase flexibility for landowners or enhance protection of shoreline resources.
- Many residents expressed support for the Planning Commission recommendation as a whole.

Board Direction:

Prepare information on several topics in the SMP for Board consideration.

Next Steps/Timeframe:

The next Board briefing is scheduled for August 3, 2023.

THURSTON COUNTY
WASHINGTON
SINCE 1852

COUNTY COMMISSIONERS

John Hutchings
District One
Gary Edwards
District Two
Tye Menser
District Three

COMMUNITY PLANNING &
ECONOMIC DEVELOPMENT DEPARTMENT

Creating Solutions for Our Future

Joshua Cummings, Director

MEMORANDUM

TO: Planning Commission

FROM: Andy Deffobis, Associate Planner,

DATE: **May 9, 2019**

SUBJECT: Shoreline Master Program Buffers

Introduction

As part of the overall Shoreline Master Program update, staff have been gathering and analyzing information about shoreline buffers to provide the Planning Commission and Board of County Commissioners (Board) with information to make buffer decisions. This includes research on best available science for shoreline buffers (Appendix A), what other jurisdictions in western Washington have proposed, and what has been approved by the Department of Ecology (Appendix B).

Vegetation along the shoreline provides a myriad of benefits for the water body, the upland area and shoreline residents and users. Vegetation helps to stabilize soils, which filter pollutants and fine sediments, contributing to improved water quality. Trees and shrubs provide habitat for many species and provide food for aquatic species. More stable banks reduce occurrences of landslides, damage to structures and threats to life safety (Ecology SMP Handbook, Chapter 11).

Marine vs. Freshwater Riparian Areas
Shorelines of the state include both marine and freshwater shorelines. Research suggests that freshwater and marine riparian areas adjacent to the water share ecological functions. The Department of Ecology's Shoreline Master Program handbook states:

> "Research on freshwater riparian areas is relevant to marine riparian areas and vice versa. A panel of 14 scientists with expertise related to riparian ecosystems generally agreed that "findings from studies of freshwater riparian areas are transferable to marine riparian areas, although some processes and functions are unique to marine riparian areas." (*Protection of Marine Riparian Functions in Puget Sound, Washington*, Appendix H, 2009.) This document also concludes that "riparian areas provide ecological functions regardless of whether they are

adjacent to freshwater or marine water bodies" (Section 1). (Ecology SMP Handbook Chapter 11)

What does science say about buffers?

The legislature requires SMP provisions to be based on an analysis incorporating the most current, accurate, and complete scientific or technical information available (WAC 173-26-201(2)(a)). Recommended buffer widths vary, depending on shoreline environment designation and which functions the shoreline is provided in a given area. In order to support conversations about buffers during the SMP update, staff analyzed recommendations from scientific literature and the master programs adopted by other jurisdictions.

The following was adapted from the literature. See Appendix A for more complete documentation.

Function	Recommended Buffer Width (includes literature averages)	Study
Wildlife	100-1,000 ft 287 ft 318 ft 571 ft	Ecology 2013, citing Environmental Law Institute WDFW 1997 Kitsap County Brennan & Culverwell 2009
Sediment removal Fine sediment control Erosion control Sediment filtration	30-100 ft 112 ft 117 ft 190 ft	Ecology 2013, citing Environmental Law Institute WDFW 1997 Kitsap County Brennan & Culverwell 2009
Nitrogen removal	100-180 ft	Ecology 2013, citing Environmental Law Institute
Phosphorus removal	30-100 ft	Ecology 2013, citing Environmental Law Institute
Water quality	358 ft	Brennan & Culverwell 2009
Pollution filtration	78 ft 231 ft	WDFW 1997 Kitsap County
Shade	79 ft 132 ft	Brennan & Culverwell 2009 Kitsap County
Temperature control	90 ft	WDFW 1997
Microclimate	280 ft 412 ft	Kitsap County WDFW 1997
Large woody debris	147 ft 161 ft 180 ft	WDFW 1997 Kitsap County Brennan & Culverwell 2009

Current Buffers in Thurston County SMP/CAO

The existing SMP was adopted in 1990. At that time, buffers established in the adopted SMP were as follows:

1990 Shoreline Environment Designation*	Standard Buffer Width
Urban Environment	20 feet or width prescribed in local zoning ordinance
Suburban Environment	50 feet
Rural	50 feet
Conservancy	100 feet
Natural	100 feet

*The current SMP also contains provisions for special management areas.

In 2010, Substitute House Bill 1653 clarified that critical area regulations adopted under the GMA apply within shoreline areas until Ecology approves either a comprehensively updated SMP, or a SMP amendment specifically related to critical areas. The County's CAO update was adopted in 2012. It currently prescribes 250' buffers for marine shorelines and for Type S streams, with an additional 50 foot vegetation management zone in which vegetation removal must be limited. The CAO defers to the SMP on lakes, and on marine shorelines with the "Rural" environmental designation.

2012 Shoreline Environment Designation*	Standard Buffer Width		
	Marine	Lakes	Streams
Urban Environment	250 feet	20 feet	250 ft
Suburban Environment	250 feet	50 feet	250 ft
Rural	50 feet	50 feet	250 ft
Conservancy	250 feet	100 feet	250 ft
Natural	250 feet	100 feet	250 ft

*The current SMP/CAO also contains provisions for special habitat management areas. See Chapters 24.25.045-060 TCC.

Proposed Buffers in Thurston County Draft Shoreline Master Program Update

In 2018, staff were directed by the Board to propose buffers in line with those adopted by other jurisdictions and approved by the Washington Department of Ecology. The proposed buffers are intended to represent a moderate risk approach for protecting shoreline function, based on a review of the literature. This means there is a moderate risk that shoreline functions will be impacted by the adoption of the proposed buffer widths. This is the approach that the Washington Department of Ecology used for its recommendations on wetlands in Washington State (see Bunten et al., 2016). The current buffers proposed are:

Designation	Marine (Standard/Reduced Buffer)	Freshwater Lakes (Standard/Reduced Buffer)
Shoreline Residential	50 feet*	50 feet*
Urban Conservancy	125 feet/75-90 feet	125 feet/75-90 feet
Rural Conservancy	150 feet/110 feet	150 feet/110 feet
Natural	200 feet/150 feet	200 feet/150 feet
*No reduction without Type III variance		

		Streams
		250 feet**

**Freshwater stream buffers may be administratively reduced by 10-25% via a Type I or II administrative variance. Reductions greater than 25% require a Type III variance.

Additional Buffer Options

The County has latitude in how it structures its approach to buffers. Currently, buffers are proposed by shoreline environment designation for marine shorelines and lakes, while streams have a proposed fixed buffer width of 250 feet.

One option the Planning Commission could consider is to propose varying buffers for streams, based on shoreline environment designation. They may also consider proposing a fixed buffer width on marine shorelines. This is the approach taken for freshwater and marine riparian areas in the Critical Areas Ordinance.

What buffers have been adopted by other jurisdictions?

As part of the Thurston County SMP update process, staff reviewed buffers adopted by other jurisdictions. Buffer widths discussed here have been approved by Ecology, with the exception of Clallam County, which is currently under review by Ecology.

The SMPs of other jurisdictions take varying approaches to prescribing buffers. Below are a few comparisons of buffer widths in the region. Please refer to Appendix B for more information.

Jurisdictional Buffer Comparison, by Shoreline Environment Designation:

	Thurston County 1990 SMP/2012 CAO	DRAFT Thurston County SMP	Kitsap County SMP	Mason County SMP	Lewis County SMP	Pierce County SMP
Shoreline Residential	Marine/lakes 50 feet	50 feet	85 feet	Marine /lakes 100ft/100ft	150 feet	75 feet
Urban Conservancy	Marine/lakes 250ft/100ft	125 feet (90)	100 feet	Marine/lakes 100ft/100ft	150 feet	100 feet
Rural Conservancy	Marine/lakes 250ft/100ft	150 feet (110)	130 feet	Marine/lakes 150ft/100ft	150 feet	100 feet
Natural	Marine/lakes 250ft/100ft	200 feet (150)	200 feet	Marine/ lakes 150ft/100ft	200 feet	150 feet
Streams	250 feet*	250 feet*	200 feet*	150 feet**	150-200 feet***	100-150 feet**

- * Or the flood hazard area (whichever is larger)
- ** Or the outer extent of the Channel Migration Zone (whichever is larger)
- *** Within the CMZ, SMP flood course or floodway, new development or uses, including subdivision of land, shall not be established when it would be reasonably foreseeable that the development or use would require new structural flood hazard reduction measures.

Jurisdictional Buffer Comparison, by Shoreline Type (if specified):

Jurisdiction	Streams Buffer Width Range (in feet)	Marine Buffer Width Range (in feet)	Lake Buffer Width Range (in feet)
Thurston County Proposed	250	50-200	50-200
Other Jurisdictions	50-250	50-200	30-200

How do Thurston County's proposed buffers measure up to Ecology's recommendations?

The Department of Ecology provides recommendations for buffer widths in Chapter 11 of the SMP handbook.

Ecology recommends that buffers on undeveloped shorelines with largely intact ecological functions should be 150-200 feet. A 200 foot buffer is proposed for 'Natural' marine and lake shorelines in the Thurston County draft SMP.

Ecology further recommends that areas with rural residential development have 150 foot buffers to protect existing functions. The proposed buffer for the 'Rural Conservancy' SED is 150 feet. The proposed buffer for the 'Urban Conservancy' SED is 125 feet.

A 30-60 foot buffer on more densely developed residential shorelines may be appropriate, according to Ecology's guidance. The County's SMP proposes a 50 foot buffer in the 'Shoreline Residential' SED on lakes and marine shorelines.

Streams are proposed to have a 250' buffer, which exceeds Ecology's recommendation of 150-200 feet for the most intact shorelines but is the current buffer in the CAO. Reductions to the current buffer width could impact the County's Community Rating Score through FEMA's National Flood Insurance Program. Thurston County is currently one of only 6 counties in the nation with a CRS rating of Class II.

Literature Cited

Brennan, J., H. Culverwell, R. Gregg, and P. Granger, P.I. 2009. Protection of marine riparian functions in Puget Sound, Washington. Washington Sea Grant. Prepared for Washington Department of Fish and Wildlife.

Bunten, D., R. Mraz., L. Driscoll., and A. Yahnke. 2016. Wetland guidance for CAO updates – Western Washington Version. Washington State Department of Ecology Shorelands and Environmental Assistance Program. Publication No. 16-06-001.

EnviroVision, Herrera Environmental, and Aquatic Habitats Guidelines Program. 2010. Protecting nearshore habitat and functions in Puget Sound.

Federal Emergency Management Agency. 2013. Floodplain Management and the Endangered Species Act – A Model Ordinance. Produced by FEMA – Region 10.

Hruby, T. 2013. Update on Wetland Buffers: The State of the Science, Final Report, October 2013. Washington State Department of Ecology Publication #13-06-11.

Kitsap County Department of Community Development. 2012. Technical Memorandum for Proposed Kitsap County SMP Buffers.

Knutson, K.L., and V.L. Naef. 1997. Management recommendations for Washington's priority habitats: riparian. Washington Department of Fish and Wildlife.

Washington Department of Ecology. 2017. Shoreline Master Programs Handbook. Publication No. 11-06-010.

Appendix A: Scientific Literature Review

Washington Department of Ecology (2013)

The Department of Ecology published guidance for protecting and managing in wetlands in 2005. In 2013, an update on wetland buffer science was published. The document notes that ecological attributes by which buffers protect water quality do not depend on whether the buffer is adjacent to a stream or a wetland (Hruby 2013). The following is an update to the original science synthesis provided by this document is the following:

> Recent synthesis documents recommend a focused approach to buffer widths that is based on the many functions provided by a buffer. In addition, the more recent recommendations specify buffer widths that are larger than those recommended in the 2005 synthesis. The *Planner's Guide to Wetland Buffers for Local Governments,* prepared by the Environmental Law Institute (42), recommends a range of 100ft–1000ft for wildlife, 30–100ft for sediment removal, 100-180ft for nitrogen removal, and 30-100ft for phosphorus removal.
>
> If prescribed buffers are to be used to adequately protect wetland wildlife, they will probably have to be larger than what is currently used. Based on the needs of wildlife species found in Wisconsin (some of which are also found in Washington State), the minimum buffer width is about 400 ft, and the optimal width for sustaining the majority of wildlife species is about 900 ft (81). (Hruby 2013)

Brennan & Culverwell (2009)

Brennan and Culverwell (2009) summarized several studies on buffer effectiveness, reporting on average widths to achieve 80% of a desired function for the marine riparian environment. Their results are summarized as follows.

Function	**Buffer width recommendation to achieve ≥ 80% effectiveness**	**Literature cited**	**Avg of all literature** *(to achieve ≥ 80% effectiveness)*	**Min. buffer width (approximate) based on FEMAT curve to achieve ≥ 80% effectiveness**
Water quality	5-600 m (16 – 1,968 ft) (Appendix C contains specific buffer widths for different water quality parameters)	5 m (16 ft): Schooner and Williard (2003) for 98% removal of nitrate in a pine forest buffer 600 m (1969 ft): Desbonnet et al (1994/1995) for 99% removal	109 m (358 ft)	25 m (82 ft) sediment 60 m (197 ft) TSS 60 m (197 ft) nitrogen 85 m (279 ft) phosphorus

Fine sediment control	25-91 m (92 – 299 ft)	25 m (82 ft): Desbonnet et al (1994/1995) for 80% removal 91 m (299 ft): Pentec Environmental (2001) for 80% removal	58 m (190 ft)	25 m (82 ft) (sediment) 60 m (197 ft) (TSS)
Shade	17-38 m (56 – 125 ft)	17 m (56 ft): Belt et al 1992 *IN* Eastern Canada Soil and Water Conservation Centre (2002) for 90% 38 m (125 ft): Christensen (2000) for 80% temperature moderation	24 m (79 ft)	37 m (121 ft) (.6 SPTH*)
LWD	10-100 m (33 – 328 ft)	10 m (33 ft): Christensen (2000) for 80-90% effectiveness 100 m (328 ft): Christensen (2000) 103 for 80-90% effectiveness	55 m (180 ft)	40 m (131 ft) (.65 SPTH*)
Litter fall	No studies found	N/A	N/A	24 m (79 ft) (.4 SPTH*)
Hydrology/slope stability	No studies found	N/A	N/A	N/A
Wildlife	73-275 m (240 – 902 ft)	73 m (240 ft): Goates (2006) for 90% of hibernation and nesting 275 m (902 ft): Burke and Gibbons 1995 *IN* Goates 2006 for 100% of hibernation and nesting	174 m (571 ft)	N/A

The research presented above is also cited in the 2010 document Protecting Nearshore Habitat and Functions in Puget Sound (EnviroVision, Herrera Environmental, and Aquatic Habitat Guidelines Program). The authors contend:

> "There is consensus in the literature that buffers or protected riparian areas are critical to sustaining many ecological functions. A precautionary approach toward regulating marine riparian habitat areas is recommended. A precautionary approach would rely on using the high end of the ranges required to protect specific functions, where those widths are achievable. Where there is opportunity (e.g., in areas of undeveloped or low-density shorelines with high habitat value), maximum protection will help compensate for unavoidable and cumulative impacts from development and redevelopment elsewhere in the landscape." (EnviroVision et al. 2010)

WDFW Riparian Management Recommendations (1997)

Washington Department of Fish and Wildlife's riparian management recommendations (Knutson & Naef 1997) is an oft-cited document that discusses buffer science. They recommend 250' buffers on shorelines of the state (information adapted from publication):

Stream Type	**Recommended Riparian Habitat Area widths (in feet)**
Type 1 and 2 streams; or Shorelines of the State, Shorelines of Statewide Significance	250
Type 3 streams; or other perennial or fish bearing streams 5-20 feet wide	200
Type 3 streams; or other perennial or fish bearing streams <5 feet wide	150
Type 4 and 5 streams; or intermittent streams and washes with low mass wasting* potential	150
Type 4 and 5 streams; or intermittent streams and washes with high mass wasting* potential	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.*

Their general summary of scientific literature is as follows (information adapted from publication):

Riparian habitat function	**Range of reported widths (feet)**	**Average of reported widths (feet)**
Temperature control	35-151	90
Large woody debris	100-200	147
Sediment filtration	26-300	138
Pollution filtration	13-600	78
Erosion control	100-125	112
Microclimate maintenance	200-525	412
Wildlife habitat	25-984	287

Federal Emergency Management Agency

In 2008, The National Marine Fisheries Service (NMFS) issued a biological opinion regarding the National Flood Insurance Program (NFIP) operated by the Federal Emergency Management Agency (FEMA). The opinion noted that continued implementation of the NFIP in the Puget Sound adversely affects the habitat of listed salmon species and Orca whales.

In the opinion, FEMA was ordered to modify its floodplain management criteria to allow no development in the riparian buffer zone. In the model ordinance developed for Washington State, FEMA referred to recommended riparian buffers in Knutson and Naef (1997), which include a 250 foot buffer for shorelines of the state.

Kitsap County SMP Buffers Technical Memorandum

For their SMP update, Kitsap County evaluated science for the various buffer functions, and summarized findings in the following tables in a January 2012 technical memorandum.

Buffer Function	**References**	**Recommendation**
Microclimate	Knutson and Naef, 1997	412’
	May, 2003	100-328’
Shade	Brennan, et al., 2009	56-125’
	May, 2003	98-262’
	FEMAT	121’
Sediment Filtration	Brennan, et al.,2009	92-299’
	May, 2003	100’
	FEMAT	82-197’
	Knutson and Naef, 1997	78’
	Neibling and Alberts, 1979*	7.9’
	Desbonnet, et al., 1994	82’ (80%)
Pollutant Filtration	Brennan, et al. , 2009	16-1,968’
	May, 2003	66-196’
	Knutson and Naef, 1997	78’
	Desbonnet, et.al., 1994	148’ (“adequate”)
	Larsen, 1994*	2’
	Doyle, 1977*	13’
	Lim, 1998*	20’
	Strivastava, 1996*	10-20’
Large Woody Debris	Brennan, et al., 2009	33-328’
	May, 2003	164’
	FEMAT	131’
	Knutson and Naef, 1997	147’
Wildlife Habitat	Brennan, et al., 2009	240-902’

	May, 2003	100-328’
	Knutson and Naef, 1997	287’
	Desbonnet, et.al., 1994	49’ (min. for wildlife + 60% pollutant removal)
All Functions	Desbonnet, et.al., 1994	16.4’(min. for densely developed areas); 49’ (min. for moderately developed areas); 164’ (undeveloped areas) 82’ (min. general wildlife and 70% pollut. removal)
	Castelle, 2000	16-82’

**This reference may not be as applicable to Kitsap County shorelines as others listed here due to the location and type of environment analyzed.*

Buffer Function Average and Median Widths from the Literature

Buffer Function	**Average Buffer**	**Average minus outliers**	**Median Buffers**	**Range (Lowest/Highest)**
Microclimate	280’	100’	100’	100’-412’
Shade	132’	115’	121’	56’-262’
Sediment Filtration	117’ [133’]	105’ [111’]	87’ [100’]	7.9’-299’ [78’-299’]
Pollutant Filtration	231’ [412’]	63’ [122’]	20’ [113’]	2’-1,968’ [16’-1,968’]
Large Woody Debris	161’	147’	147’	33’-328’
Wildlife Habitat	318’	239’	264’	49’-902’
TOTAL	**197’ [211’]**	**157’ [172’]**	**100’** (Lower=49’ [80’]; Upper=196’ [257’])	

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

Appendix B: SMP Buffers Established by Other Jurisdictions

Proposed buffers in the draft SMP were compared to standard buffers in master programs approved by Ecology for other jurisdictions. Master programs are organized differently across jurisdictions, and not all jurisdictions use the same shoreline environment designations or specify buffer widths by type of shoreline. Results of the jurisdictional comparison are in the tables below.

Jurisdictional Buffer Comparison, by Shoreline Environment Designation:

	Thurston County Proposed	Kitsap	Mason	Lewis	Pierce*	Clallam
Shoreline Residential	50	85	100	150	75	
Urban Conservancy	125	100	100	150	100	
Rural Conservancy	150	130	100-150	150	100	
Natural	200	200	100-150	200	150	175

*Most restrictive buffer between CAO and SMP applies (additive buffers if certain characteristics are present).

Jurisdictional Buffer Comparison, by Shoreline Type (if specified):

Jurisdiction	Streams Buffer Width Range (in feet)	Marine Buffer Width Range (in feet)	Lake Buffer Width Range (in feet)
Thuston County proposed	250	50-200	50-200
Mason County	150	100-150	100
Snohomish County	150 (anadromous streams)	150	150
Island County	150*	0-125*	30-130*
Whatcom County	150	150	100
Jefferson County	150	150	100
Clallam County	50-100 “other streams”	50-100	
Kitsap County	200	85-200	85-200
City of Lacey	**	200	**
City of Tumwater	250	N/A	50-100

*Additional 10-45’ setback depending on SED.

** Determined with Habitat Management Plan and Chapter 17.41.021-Table 1 of Lacey SMP.

Jurisdictional Buffer Comparison, by Absolute Standard Width Range (includes all SEDs and shoreline types , may not include 100 yr floodplain or channel migration zone areas):

Jurisdiction	Gross Buffer Width Range (in feet)
Mason County	100-150
Pierce County	35-150
King County	115-165
Snohomish County	150
Island County	0-195
Whatcom County	100-150
Jefferson County	100-150
Clallam County	35-175
San Juan County	50-100
Kitsap County	50-200
City of Lacey	50-200
City of Olympia	30-200
City of Tumwater	50-250

Best Available Science and Information List
Thurston County Critical Areas Ordinance Update

July 24, 2012

The following documents represent a partial list of data and best available science. This list is not meant to be exhaustive, and may be added to in the future. This document is intended to provide an index of the science and data that was reviewed and utilized by the Thurston Board of County Commissioners, the Thurston County Planning Commission, and the Thurston County Planning Department in their development of the proposed critical areas ordinance update, from 2003 to present. It is important to note that some of the documents listed below are literature reviews. Literature reviews represent a collection of scientific research, and are intended to provide a summary or synthesis of a given field or topic of scientific study. Literature reviews typically incorporate information from numerous sources.

Because critical areas are often interconnected in the landscape, the scientific information that has been produced often has relevance across multiple categories of critical areas. Staff have attempted to list documents in each category in which they hold relevance, though it is possible that not all documents with relevance in more than one category have been listed as such. In instances where documents are listed in more than one category, a note has been inserted to inform the reader that the document is considered to provide valid information in more than one category of critical area.

The numbering of the documents below corresponds to the digital collection of best available science documents. Digital copies of documents have not been retained where a web URL has been provided below. Digital copies of the remaining documents on the list below are available at the Permit Assistance Center, Building 1, 2nd Floor of the Thurston County Courthouse, 2000 Lakeridge Drive SW, Olympia, WA 98502.

Critical Aquifer Recharge Areas (through December 23, 2011)

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Attachment C

	Thurston County SMP Update - BOCC Decision Matrix					
	Topic	**Reference location**	**PC approved recommendation**	**Ecology relayed position**	**BoCC Decision (Maintain, Delete, Modify)**	**Notes**
	BOCC Main Decision Points					
1	Shoreline buffer widths	19.400.120 (in general)	**Lake and Marine** 50 ft Shoreline Residential 100 ft Urban Conservancy 125 ft Rural Conservancy 200 ft Natural **Streams** 250 ft (all designations)	**This buffer scheme is within the realm of justifiable** with revisions to ensure the "minimum necessary" approach and generally requiring a variance for buffer reduction, depending on what you see as you develop the Cumulative Impacts Analysis. WDFW advocated for retaining larger buffers from previous drafts of the SMP.	1. Retain buffers in PC recommendation. 2. Restore larger buffers from earlier drafts: **Lake and Marine** 75/85 ft Shoreline Residential 125/250 ft Urban Conservancy 150/250 ft Rural Conservancy 250 ft Natural **Streams** 250 ft (all designations) 3. Propose alternative buffer widths.	
2	Shoreline modification allowances in Natural Shoreline Environment Designations - Docks, floats, buoys, beach stairs	19.400.120(D), 19.600.105, 19.600.160	<u>Allow following in Natural SED with CUP:</u> Beach stairs Single Use Docks (marine) <u>Allow in Natural SED with SDP/AdSDP:</u> Floats Buoys Single Use Docks (lakes)	**Allowing new docks is inconsistent with the purpose and management policies of the Natural environment (WAC 173-26-211(5)(a))**. Recommend prohibiting them (allow joint use docks with CUP). Ecology recommends prohibiting beach stairs in Natural SED (Allow with CUP if demonstrated to be necessary to provide access to a permitted moorage facility.) WDFW suggests that dock restrictions remain on Natural shoreline designation to protect sensitive marine embayments, pocket estuaries, salt marsh, and lake fringe wetland habitats.	1. Retain permit requirements proposed in draft SMP. 2. Change permit requirements for shoreline modifications in the Natural SED: --Prohibit single use docks in Natural SED (allow joint-use docks with CUP). --Prohibit beach stairs in Natural SED (allow for access to permitted moorage facility with a CUP). --Prohibit floats and buoys in Natural SED of lakes.	
3	Dimensional standards for mooring structures	19.600.160(C)(3)	Remove specific development standards for mooring structures (such as docks, piers, buoys) and reference WDFW Hydraulic Project Approval standards.	Ecology has indicated this is a workable approach.	1. Retain reference to HPA standards. 2. Restore specific development standards.	

	Thurston County SMP Update - BOCC Decision Matrix					
	Topic	**Reference location**	**PC approved recommendation**	**Ecology relayed position**	**BoCC Decision (Maintain, Delete, Modify)**	**Notes**
4	Referring to nonconforming uses	19.400.100, 19.150.247 & .592	Use the word "conforming" to refer to legally existing development that no longer conforms to modern permit and development standards (e.g. a home built close to shoreline before buffers were adopted).	**The proposed approach is inconsistent** with the requirement that the SMP's regulations be of "sufficient scope and detail" to ensure implementation of the SMA (WAC 173-26-191(2)(a)(ii)(A)) and **is not approvable as drafted.**	1. Proceed with use of phrase "conforming" throughout document. 2.Use "legally nonconforming" throughout document. Clarify that SFRs may be considered "conforming" based on 2011 carve-out law (Note: Alterations of such structures must still meet SMP standards). 3. Use an alternate reference for said development, such as "nonconforming" or "legally existing nonconforming".	
5	Permit standards for bulkheads	19.600.175(A), 19.600.105	Hard Stabilization: Allow with SDP in all upland designations Hybrid Stabilization: Allow with SDP in all upland designations	Ecology recommendation: Hard stabilization: Prohibit in Natural SED in most cases (can make allowances for existing SFRs). Recommend administrative CUP for Conservancy SEDs. Hybrid stabilization: Allow with CUP.	Previous versions of draft required CUPs for all new hard and hybrid stabilization. 1. Retain PC recommenation for stabilization permits. 2. Incorporate permit requirements recommended by Ecology. 3. Revert to previous draft: require CUP for all new hard stabilization; administrative CUP for hybrid or soft stabilization.	
	Ecology Indicated Required Items					
6	References to critical areas within the SMP	Throughout		**References to critical area standards incorporated into SMP should be clear.** The CAO itself is not being adopted into the SMP, rather specific provisions from the CAO are being incorporated, and included in Appendix E of the SMP for reference.	1. Amend references to critical areas in SMP for clarity and accuracy. 2. Retain references to critical areas proposed in draft SMP as-is.	
7	Allowing bulkheads for eutrophic lakes	19.150.210, 19.600.175(B)(2), 19.600.175(D)(2)(c)(v)	PC included an additional allowance for bulkheads on eutrophic lakes in addition to what is permitted by WAC, to prevent erosion and introduction of sediment.	This is inconsistent with the WAC and should be removed.	1. Remove specific allowances for bulkheads in eutrophic lakes to ensure consistency with WAC. 2. Retain allowance for bulkheads in eutrophic lakes proposed in draft SMP.	
8	Definition of floodway	19.150.379.5	PC recommendation includes a definition of floodway that is used in other county codes.	There are two statutory definitions. The County's definition must be consistent with one of them.	1. Use WAC definition but also referring to floodway definition used in other codes to ensure consistency. 2. Retain definition proposed in draft SMP.	
9	Definition of mitigation sequencing	19.150.560		Refer to WAC for appropriate language to describe mitigation sequencing.	1. Amend definition for consistency with WAC. 2. Retain definition proposed in draft SMP.	

	Thurston County SMP Update - BOCC Decision Matrix					
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10	Dollar thresholds in substantial development permit exemption definition	19.150.770	PC included updated cost thresholds in other sections of SMP	Recommend using updated dollar thresholds in document.	1. Update cost thresholds for SDP exemptions to the most current dollar amounts. 2. Retain cost thresholds proposed in draft SMP.	
11	Reference to wetlands in shoreline jurisdiction definition	19.200.109(A)(6)	PC recommendation implies that wetlands are separate from shorelands.	**Reference to shorelands is incorrect (RCW 90.58.030(2)(d)).** Associated wetlands are included in the definition of "shorelands"; they are not included in SMP jurisdiction <u>in addition to</u> shorelands.	1. Amend reference to wetlands within shorelands for consistency with WAC. 2. Do not amend reference to wetlands within shorelands.	
12	Referencing WAC substantial development permit exemption criteria in Existing Structures regulations	19.400.100(B)(1)(g)	PC intended to allow alterations of structures within existing footprint without an SDP.	Exemption criteria in the WAC control how exemptions may be authorized in SMP.	1. Insert reference to WAC SDP exemptions standards (retains PC intent; clarifies that WAC controls such exemptions) 2. Do not amend statement text proposed in SMP.	
13	Referencing WAC regarding allowances for floating homes to be considered conforming	19.400.100(B)(4)		**Revisions required for consistency with statute.** This section is combining and conflating a few different topics covered in RCW 90.58.270.	1. Insert language from WAC to clarify how certain existing floating homes/floating on-water residences may be considered conforming. 2. Do not insert WAC language.	
14	Locating structures on constrained lots to prevent need for shoreline stabilization	19.400.105(A)(3)	New development on lots constrained by depth, topography or critical areas shall be located to <u>minimize</u>, to the extent feasible, the need for shoreline stabilization.	**This provision is inconsistent with WAC 173-26-231(3)(a)(iii).** Such development would require a shoreline variance.	1. Replace "minimize" with "avoid" to be more consistent with statute. 2. Do not make change in draft SMP.	
15	Monitoring requirements for advanced mitigation projects	19.400.110(C)(2)	As written, PC recommendation allows mitigation project monitoring to end after 2 monitoring periods.	As written, is not adequate to document success of mitigation projects.	1. Clarify that monitoring will occur for a minimum of 5 years, and until mitigation success is demonstrated by meeting all performance standards. (This was original intent of this provision--the original draft was not clear.) 2. Retain proposed language in draft SMP.	
16	Addressing critical areas in SMP jurisdiction	19.400.115 (multiple places within)	PC recommendation discusses relationship between critical areas and shorelines. Revisions could increase clarity of document while preserving intent of PC recommendation.	**Ecology staff have indicated that the relationship between critical areas and shoreline regulations is not entirely clear in the draft SMP.** County staff and Ecology staff have worked together to propose text changes to increase clarity for staff and the public, and to guide implementation.	1. Amend draft SMP to increase clarity on relationship between critical areas and shorelines. 2. Do not make change in draft SMP.	
17	Shoreline buffer reductions - general proposed changes	19.400.120(B)(2), (3), & (4)		**As written, this section is not implementable.** County staff have worked with Ecology to reduce implementation gaps and clarify how buffer reductions work.	1. Implement various amendments to shoreline buffer reductions. 2. Do not make change in draft SMP.	

	Thurston County SMP Update - BOCC Decision Matrix					
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18	Clarifying buffer reductions for streams	19.400.120(B)(3)	PC recommendation does not draw distinction between how stream and marine/lake buffer reductions would be managed. Stream buffers are larger to start out with and may require different buffer reduction standards.	**Reducing a 250' buffer down to 50'-150' is not appropriate or supported by science.** In general, a 25% buffer reduction is supported.	1. Amend text to allow 25% reduction of stream buffer, and relocate this text for increased clarity. 2. Retain language in proposed SMP (allows larger reductions).	
19	Clarifying buffer reduction requirements in Urban Conservancy SED	19.400.120(B)(3)(b)	Reduced buffer width is 75-90 feet in this SED. As written, the language implies buffer may be even smaller.	Recommend clarifying intent of language.	1. Clarify that buffer reductions in a range of 75-90 feet are authorized by this section. 2. Do not make change in draft SMP.	
20	Characterization of shoreline setback	19.400.120(B)(5)	Included statement that setback is intended to protect buffer during construction and is not needed after construction.	**Delete incorrect language that states setback is no longer needed after construction.** The setback allows room for maintenance access outside of the buffer for the life of the structure.	1. Remove incorrect language and also clarify that a lack of a shoreline setback shall not preclude maintenance of legally existing structures. 2. Do not make change in draft SMP.	
21	Relocating text relating to water-depending development from constrained lot section	19.400.120(C)(1)	PC recommendation implies that buffers apply to water dependent development.	**It does not make sense to provide alternative buffer options for water-dependent development.** Water-dependent development is already allowed in the buffer; it just has to mitigate to ensure no net loss.	1. Remove reference to water-dependent development, and relocate accompanying text on water-dependent development to more appropriate section of SMP. Expand to clarify how different types of water-oriented development is managed, and that this development may be sited in buffers if no net loss criteria is met. 2. Do not change or relocate text.	
22	Providing mitigation sequencing context to allowances for decks/platforms in buffers	19.400.120(D)(1)(b)	PC recommendation increases allowances for decks and platforms in buffers.	Revisions needed to bring this allowance into consistency with mitigation sequencing.	1. Introduce amendments to text to highlight that decks/platforms in buffer must be minimum size necessary to support permitted use, and shall encroach on buffer the minimum amount necessary. 2. Do not include these provisions in the draft SMP.	
23	Correcting reference to floating residences in dimensional standards table	Table 19.400.140(A)	PC recommendation draft uses the phrase "boat houses" in correlation with WAC that speaks to floating homes/floating on-water residences, which is technically incorrect.	Recommend revising text for consistency with RCW.	1. Change reference to floating homes/floating on-water residences for consistency with RCW. 2. Do not make change in draft SMP.	
24	Waiver of public access requirements	19.400.145(A)(5)(d)	PC recommendation allows waiver of public access requirements if cost of providing them is disproportionate to total project cost.	**Recommend revision to align with the purpose of requiring public access, consistent w/the policy directives of the Act** - allow waiver if cost of providing access is disproportionate to the project's impact on public access.	1. Revise public access waiver. 2. Do not make change in draft SMP.	

	Thurston County SMP Update - BOCC Decision Matrix					
	Topic	**Reference location**	**PC approved recommendation**	**Ecology relayed position**	**BoCC Decision (Maintain, Delete, Modify)**	**Notes**
25	Use of "E" for projects that are exempt from SDP requirement	19.600.105 Table (general)	PC recommendation denotes projects that are exempt from an SDP with an "E" for Exempt, vs. "P" for SDP.	**Calling only certain uses/mods out is misleading and can lead to incorrect assumptions and implementation.** In general, Ecy staff do not recommend identifying uses and modifications as exempt in the table. Any one of the uses/mods in the table may qualify for an SSDP exemption if the proposal meets the criteria in WAC 173-27-040.	1. Recharacterize any uses/modifications currently shown as "Exempt" to "P" (for SDP). Use legend to explain that projects meeting exemption criteria will be exempt from SDP. 2. Do not make change in draft SMP - continue to use "E" for Exempt.	
26	Permit standards for dredge disposal	19.600.105 Table - Dredge Disposal, 19.600.135	PC recommendation proposes the following permit standards: Natural SED: CUP Rural/Urban Conservancy SED: Administrative SDP	**Dredge disposal in the Natural environment, except for ecological restoration, is inconsistent with the purpose of the designation (WAC 173-26-211(5)(a)).** Rural Conservancy and Urban Conservancy designations also prioritize protection of ecological function. Disposal of dredge materials in these environments warrants additional scrutiny and analysis of cumulative impacts. Recommend: Natural: Prohibited Rural/Urban Conservancy: CUP or Administrative CUP	1. Change permit requirements for dredge disposal. 2. Do not change permit requirements for dredge disposal.	
27	Permit standards for flood hazard reduction measures	19.600.105 Table - Flood Hazard Reduction Measures, 19.400.150(A)	Natural SED: SDP Rural Conservancy SED: SDP	Given the extent of floodplain and floodway included in the County's shoreline jurisdiction (i.e. all of it), **there needs to be more scrutiny applied to proposals to install new flood control structures**. These can have a significant impact on shoreline ecological functions and processes. Recommend: Natural SED: Prohibited Rural Conservancy: CUP	1. Change permit requirements for flood hazard reduction measures. 2. Do not change permit requirements for flood hazard reduction measures.	
28	Permit standards for boat houses	19.600.105 Table - Mooring Structures	PC recommendation mentions permit standards in text of SMP, but not in the land use table.	[Note: This item was observed by County staff, but general guidance from Ecology has included ensuring consistency between the land use table and text sections of the SMP.]	1. Include permit standards for boat houses in the land use table, for internal consistency. 2. Do not make change in draft SMP.	
29	Reducing required mitigation when providing public access	Appendix B - Section B.1.J	PC recommendation allows project mitigation to be reduced by half when public access is provided.	As written, this is inconsistent with no net loss requirements.	1. Make changes to this section for consistency with statute. 2. Do not make change in draft SMP.	
30	Implementation of mitigation for shoreline stabilization/barrier structures	Appendix B - Section B.3		In general this section needs more language/explanation to be implementable.	1. Include additional context and reorganization of this section of the draft SMP. 2. Do not make change in draft SMP.	
	Ecology Indicated Helpful Items					
31	Minor sentence rewording for clarity	Throughout		Suggest minor wording/phrasing revisions for clarity.	1. Implement minor wording/phrasing revisions. 2. Do not implement minor wording/phrasing revisions.	

	Thurston County SMP Update - BOCC Decision Matrix					
	Topic	**Reference location**	**PC approved recommendation**	**Ecology relayed position**	**BoCC Decision (Maintain, Delete, Modify)**	**Notes**
32	Minor technical corrections	Throughout		Examples: SMP amendment not required to remove annexed land from County's SMP jurisdiction. (19.100.120(D)) Recommend deleting reference to dock setbacks; it does not belong here (19.400.120(D)(1)(e)(iv))	1. Implement minor technical corrections. 2. Do not implement minor technical corrections.	
33	Minor revisions or relocations to aid comprhension, implementation, or reduce redundancy/duplication	Throughout. Examples at right		Examples: --Recommend simplifying references to shorelines that are regulated by the SMP. (19.100.130)(F) --Insert "buffer and" to clarify that this language applies to expansions outside both the shoreline buffer and setback. (19.400.100)(B)(1)(c)) --Clarify how expansions of existing structures within the buffer are addressed. (19.400.120(B)(1)) --Add "parallel to OHWM" to clarify where this provision applies. (19.400.100(B)(1)(e)) --Recommend adding note that vegetation conservation buffers may also be referred to as shoreline buffers. (19.400.100(B)(1)(f)) --Recommend removing 'Alternatives for Existing Development' section - this language is convered elsewhere. (19.400.120(C)(2)) --Relocating standards for beach stairs in the land use table (Table 19.600.105)	1. Include minor revisions to increase clarity and comprehension, reduce redundancy and duplication, and aid implementation of the draft SMP. 2. Do not make changes to the draft SMP.	
34	Recommended additions/modifications to definitions	Various	Some terms used in the PC recommendation are not defined in the document.	<u>Recommend adding definitions for:</u> Beach stairs (19.150.167) Shoreline Jurisdiction (19.150.714) Stair Tower (19.150.747) <u>Recommend modifying select definitions:</u> Guidelines (19.150.395): Clarify that Chapter 173-27 WAC is not SMP guidelines. Pervious Surface (19.150.615): Clarify that decks may be considered pervious (already stated elsewhere in document) Prohibited (19.150.645): Remove extraneous language.	1. Implement proposed changes to SMP definitions. 2. Do not make changes to draft SMP.	
35	Update formatting, numbering, internal code references, spelling	Throughout			1. Implement minor changes in draft SMP. 2. Do not make changes to draft SMP.	
36	Parallel shoreline environment designation scenarios	19.200.145(A)(6)	PC recommendation excludes some possible scenarios of how parallel shoreline designations may be interpreted.	[Note: This issue was observed by County staff.]	1. Include additional language to aid interpretation of shoreline designations. 2. Do not make changes to draft SMP.	
37	Determining when parcels disconnected from shoreline are subject to SMP	19.200.145(A)(9)	PC recommendation does not stipulate how these determinations are made.	Recommend adding language that the Director shall make determinations on which standards apply to properties with a distinct break in connectivity to the shoreline.	1. Include language clarifying that the Director shall make determinations of when SMP standards apply. 2. Do not make change in draft SMP.	

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38	Inserting a preamble for nonconforming uses	19.400	This language was removed from the PC recommendation draft when the term 'conforming' was employed to refer to legally nonconforming uses/structures/lots.	This language could be added back in to provide additional context for what nonconforming uses/structures/lots are and how they are addressed in SMP.	1. Re-establish preamble for nonconforming uses to provide context for how these uses are managed in SMP. 2. Do not make change in draft SMP.	
39	Internal consistency - variances for buffer reductions	19.400.105(A)(6)	PC recommendation stipulates when variances are required for buffer reductions, but that is not referenced here.	Proposed language to alert reader that a variance may be required to locate a structure within the buffer, per other sections of SMP.	1. Include proposed language in draft SMP. 2. Do not include proposed language in draft SMP.	
40	Internal consistency - water depending uses in buffers, mitigation sequencing required	19.400.105(B)(1)	This section of PC recommendation is not entirely clear as written.	Revisions recommended to clarify that water-dependent uses are allowed in buffers, subject to mitigation sequencing.	1. Include clarification in draft SMP. 2. Do not make change in draft SMP.	
41	Clarifying effective date and requirements for advanced mitigation projects	19.400.110(B)(5)	PC recommendation does not stipulate a start date for when advanced mitigation projects may be considered for use.	[Note: Effective date issue was observed by County staff.] Recommend language that indicates all requirements of this section must be met in order to qualify for advanced mitigation.	1. Make proposed changes to draft SMP. 2. Do not make changes in draft SMP.	
42	Advising applicants of other agency approvals for advanced mitigation projects	19.400.110(B)(5)(a)	PC recommendation does not include this language as written.	Ecology suggests adding a requirement that all other applicable permits be obtained, at least to put it on the applicant's radar.	1. Add reminder to applicants that other agency approvals may be required for advanced mitigation projects. 2. Do not make change in draft SMP.	
43	Clarifying reporting requirements for advanced mitigation projects	19.400.110(C)(2)	PC recommendation does not specify that monitoring reports must be submitted to County, or that maintenance criteria and a monitoring schedules is part of an applicant's mitigation plan.	[Note: These issues where observed by County staff.]	1. Make proposed changes to draft SMP. 2. Do not make changes in draft SMP.	
44	Should/shall for avoiding extensive vegetation removal	19.400.120(A)(3)	PC recommendation states that extensive vegetation removal to create views/expansive lawns <u>should</u> not be allowed within shoreline jurisdiction.	If this is a requirement, the word "shall" should be used. "Should" is for policy language.	1. Change language to "shall" to prohibit extensive vegetation removal for lawns/views within shoreline jurisdiction. 2. Do not make change in draft SMP.	
45	Adding a reference to critical area buffers in shoreline buffers section	19.400.120(B)(6)	PC recommendation does not include this language as written.	Recommend adding language to remind reader that critical area buffers also apply within shoreline jurisdiction.	1. Include reminder that critical area buffers also apply in shoreline jurisdiction. 2. Do not make change in draft SMP.	
46	Reorganizing constrained lot provisions for single family homes	19.400.120(C)(1)		Revisions proposed to this section to retain its intent while resolving the inconsistencies and duplicities with the variance criteria. Also propose removing reference to Inventory & Characterization document; mitigation plans should rely on existing conditions. [Staff note: Proposed changes make use of statutory carve-out to waive or reduce variance requirements for single family homes/garages with a combined footprint of less than 1,200 square feet].	1. Make proposed changes to draft SMP. 2. Do not make changes in draft SMP.	

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47	Clarifying trail requirements	19.400.120(D)(1)(a)		This section needs to be rewritten/reorganized.	1. Reorganize trail standards for clarity. 2. Do not make changes in draft SMP.	
48	Requiring pervious surface for viewing platforms and decks	19.400.120(D)(1)(b)	PC recommendation does not currently require this.	Recommend requiring viewing platforms and decks to be constructed of pervious surface.	1. Require viewing platforms and decks to be constructed of pervious surface (this can include wooden decks with gaps between boards if ground is not compacted). 2. Do not make change in draft SMP.	
49	Prohibiting beach stairs below Ordinary High Water Mark	19.400.120(D)(1)(c)	PC recommendation prohibits these in the land use table, but allows them in the text.	Ecology has indicated it is appropriate to prohibit beach stairs below the ordinary high water mark. (Note: If they are allowed, permit requirements must be identified.)	1. Prohibit beach stairs below ordinary high water mark. 2. Do not prohibit beach stairs below the ordinary high water mark.	
50	Expanding use of water-oriented storage structures	19.400.120(D)(1)(e)	PC recommendation is written more narrowly than suggested language.	Recommend broadening use of water-oriented storage structure--allow as accessory to water-dependent uses or to support residential access.	1. Expand the scenarios where water-oriented storage structures may be utilized. 2. Do not make change in draft SMP.	
51	Use of water-oriented storage structure roofs for recreation	19.400.120(D)(1)(e)(v & vi)	PC recommendation does not allow roofs of storage structures to be used as recreational platforms.	[Note: This is a County staff suggestion to enable recreational use of the shoreline. Ecology has indicated support for this allowance.]	1. Include language to clarify that storage structure roofs may be used as viewing platforms. 2. Do not make change in draft SMP.	
52	Additional detail for mitigation of hazard tree removal	19.400.120(D)(4)(b)	PC recommendation does not include this specificity as written.	Recommend additional criteria to guide replacement plantings when hazard trees are removed.	1. Include additional language to guide replacement plantings after hazard tree removal. 2. Do not make change in draft SMP.	
53	Development standards for fences in shoreline jurisdiction	19.400.120(D)(5)	PC recommendation does not include this specificity as written.	Recommend adding provisions here to specify height, materials, alignment (e.g. perpendicular to the shoreline), avoidance of vegetation, mitigation to ensure NNL	1. Include development standards for fences in shoreline jurisdiction. May reference standards that already exist in other county codes. 2. Do not make change in draft SMP.	
54	Development standards for nonstructural flood hazard mitigation measures	19.400.150(B)(4-6)	PC recommendation did not apply this section to nonstructural flood hazard mitigation measures.	Ecology commented that the draft had no nonstructural flood hazard reduction measure standards. Applying the standards in this section to all flood hazard reduction measures would address this issue.	1. Apply one set of standards to all types of flood hazard mitigation measures. 2. Do not make change in draft SMP.	
55	Abbreviation for administrative conditional use permits in land use table	19.600.105 Table (general)	PC recommendation uses "C" for Conditional Use Permits.	Unless this is a convention used elsewhere in County code, I recommend “AdC” for administrative CUP to be consistent w/”AdP” and make it clear the conditional use is required.	1. Change abbreviation used for administrative conditional use permits, for internal consistency. 2. Do not make change in draft SMP.	
56	Non-water-oriented industrial uses in Shoreline Residential SED	19.600.105 Table - Industrial Uses	PC recommendation currently allows non-water-dependent industrial uses in Shoreline Residential SED in limited circumstances.	Recommend prohibiting non-water-dependent industrial uses in Shoreline Residential SED, as water-dependent industrial uses are already prohibited.	1. Prohibit non-water-oriented industrial uses in Shoreline Residential SED (water-oriented industrial uses already prohibited). 2. Do not make change in draft SMP.	

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57	Recreational development - permit footnote	19.600.105 Table - Footnote 13		Footnote that discusses permit standards is unclear.	1. Clarify permit standards for recreational development. 2. Do not make change in draft SMP.	
58	Recreational development - buffer footnote	19.600.105 Table - Footnote 14	PC recommendation has specific reference to buffer standards for non-water oriented recreational development.	Recommend deleting; all non-water oriented uses are subject to buffer standards. This footnote doesn't make sense.	1. Delete footnote. 2. Retain footnote.	
59	Permit standards for shoreline stabilization - Aquatic SED	19.600.105 Table - Shoreline Stabilization, 19.600.175	These cells are blank in the PC recommendation. Footnotes state hard stabilization may be permitted with a CUP, and soft stabilization with an SDP.	Recommend including permit standards for shoreline stabilization in Aquatic SED (CUP for hard/hybrid stabilization, SDP for soft stabilization).	1. Include permit standards for shoreline stabilization in the land use table, for internal consistency. 2. Do not make change in draft SMP.	
60	Shoreline stabilization - substantial development permit footnote	19.600.105 Table - Footnote 17	PC recommendation provides specific call-out for SDP exemption for qualifying soft stabilization.	Any development that meets SDP exemption criteria would be exempt from that permit - this doesn't need to be called out here.	1. Strike footnote. 2. Retain footnote.	
61	Separation of primary and accessory utilities in land use table & footnotes	19.600.105 Table - Utilities	PC recommendation combines permit standards for primary and accessory utilties.	Recommend separating into “primary” and “accessory”, simplify footnotes.	1. Separate permit standards for primary and accessory utilities. 2. Do not make change in draft SMP.	
62	Inserting footnote to clarify when beach stairs are authorized	19.600.105 Table - Footnotes	Other sections of PC recommendation state that water-oriented use is required before allowing beach stairs. The land use table does not include this language.	In general, Ecology has indicated it is appropriate to include reminders in the land use table or text for clarity and internal consistency.	1. Make proposed change to draft SMP. 2. Do not make changes in draft SMP.	
63	Including an applicability section for marinas	19.600.125(C)(2)	PC recommendation does not include this language as written.	Recommend adding an “applicability” section that refers to the County’s definition/threshold for marinas (i.e. moorage facility for ten or more vessels). (Staff note: In general, Ecology has advocated for providing appropriate context in each section of the SMP.)	1. Make proposed change to draft SMP. 2. Do not make changes in draft SMP.	
64	Additional standards for advanced mitigation plans	19.700.112(C)(2), (7), and (13)	PC recommendation does not include this language as written.	Recommend adding additional requirements for advanced mitigation plans. (Note: County staff recommend cross-referencing other Ecology recommendations in this section for internal consistency.)	1. Make proposed change to draft SMP. 2. Do not make changes in draft SMP.	
65	Including an applicability section for general mitigation standards	Appendix B - Section B.1	PC recommendation does not include this language as written.	Suggest opening with an applicability statement.	1. Make proposed change to draft SMP. 2. Do not make changes in draft SMP.	
66	Clarification on mitigation requirements - replacement vegetation	Appendix B - Section B.2.A	PC recommendation does not include this language as written.	This section is currently lacking standards for replacement vegetation, i.e. composition of native and/or non-native vegetation used as mitigation.	1. Include additional standards to clarify that replacement vegetation must be "like for like". 2. Do not make change in draft SMP.	

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67	Use of non-native vegetation in replanting requirements	Appendix B - Section B.2.A	PC recommendation included the concept of using non-native vegetation in mitigation planting. PC requested Ecology weigh in on an approach to implement this.	Concept is consistent with statute. Ecology proposed restrictions to the types of situations in which non-native vegetation may be used for compensatory mitigation.	1. Make proposed changes to draft SMP. 2. Do not make changes in draft SMP.	
68	Reference to county in-lieu fee program	Appendix B - Section B.5.B	PC recommendation includes reference to wetland (critical area) mitigation.	Since this appendix is limited to shoreline buffer and in-water impacts, suggest deleting.	1. Delete reference to critical areas mitigation (this chapter is specifically intended for shorelines). 2. Do not make change in draft SMP.	