



COUNTY COMMISSIONERS

John Hutchings  
District One

Gary Edwards  
District Two

Tye Menser  
District Three

**COMMUNITY PLANNING &  
ECONOMIC DEVELOPMENT DEPARTMENT**

Joshua Cummings, Director

*Creating Solutions for Our Future*

**MEMORANDUM**

**TO:** Planning Commission  
**FROM:** Andy Deffobis, Associate Planner  
**DATE:** **May 30, 2019**  
**SUBJECT:** Shoreline Master Program Buffers – Follow Up

**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, what other jurisdictions in western Washington have proposed, and what has been approved by the Department of Ecology.

This memo is a follow-up from the presentation and discussion at the May 15, 2019 Planning Commission meeting.

**Inventory of Thurston County Shorelines**

Various Planning Commissioners had questions about the distribution of shoreline environment designations in Thurston County. The following information comes from the draft Inventory and Characterization Report:

Within Thurston County there are approximately 468 linear miles of shoreline. There are approximately 116 linear miles of marine shoreline (including the inner shores of bays and marinas) and approximately 131 miles of lakeshore on 38 lakes that are designated as shorelines of the state in Thurston County. In addition, this report provides a general inventory of more than 221 miles of stream shoreline (per WAC 173-18, with revisions from 20 cubic feet per second [cfs] mapping from USGS, 1998). There are 137 marine reaches, 164 lake reaches, and 236 stream reaches (Maps 1-7).

Staff also asked the Thurston GeoData Center to provide the following information for the Planning Commission. Please note that information was derived from the maps of proposed shoreline environment designation, and stream mileage is reported for both streambanks.

1. How many miles of overall shoreline are represented by each shoreline environment designation?

Shoreline Environment Designation	Miles	%
Shoreline Residential	46.7	7%
Urban Conservancy	15.2	2%
Rural Conservancy	398.7	64%
Natural	166.5	27%
TOTAL	627.1	100%

2. For each shoreline type (marine, streams, lakes), what are the relative percentages represented by each shoreline environment designation?

Shoreline Environment Designation	Shoreline Type		
	Lakes	Marine Shoreline	Streams
Shoreline Residential	33%	9%	0%
Urban Conservancy	5%	2%	2%
Rural Conservancy	51%	47%	72%
Natural	11%	41%	27%

One Planning Commissioner asked whether the Shoreline Inventory and Characterization report provides information on development potential of shorelines. This information is available in the report. To determine the future development potential for each waterbody, parcels were intersected with the SMA jurisdiction of the water body. This analysis resulted in counts of developable parcels by type and the total number of parcels within the shoreline jurisdiction of each waterbody. If any portion of a parcel fell within the shoreline jurisdiction, it was counted. Parcels could be counted for more than one water body if the parcel fell within the jurisdictional area of multiple waterbodies.

Here is an example of text from the 2013 Inventory and Characterization report, from Long Lake:

Current zoning is Low Density Residential 0-4, Moderate Density, Light Industrial, and Open Space Institutional. Under the existing SMP, Long Lake is designated entirely Rural with the exception of the associated wetland area at the south end of the southern basin, which is designated Conservancy. Under current zoning regulations, there are approximately 378 lots within shoreline jurisdiction, 15 of which are developable. Four parcels are vacant single lots, nine parcels are subdividable vacant lots, and two parcels have the potential for additional infill.

It should also be assumed that landowners will wish to remodel and expand existing structures, or add new accessory structures. If these projects are not exempt from a shoreline permit, they would need to follow the updated SMP.

### History of Shoreline Designations

The Planning Commission asked about how shoreline designations are proposed to change. Please refer to Figure 1 below for an illustration. The Urban and Suburban categories are proposed to be discontinued, as no shorelines currently hold these designations, and Ecology's recommendations for shoreline environment designations have changed. In light of Ecology's updated recommendations, the current Rural designation is proposed to become Shoreline Residential. The current Conservancy designation is proposed to be split into Rural Conservancy and Urban Conservancy, based on whether a given shoreline reach is in the unincorporated County or an urban growth area. The current Natural shoreline designation is proposed to remain.

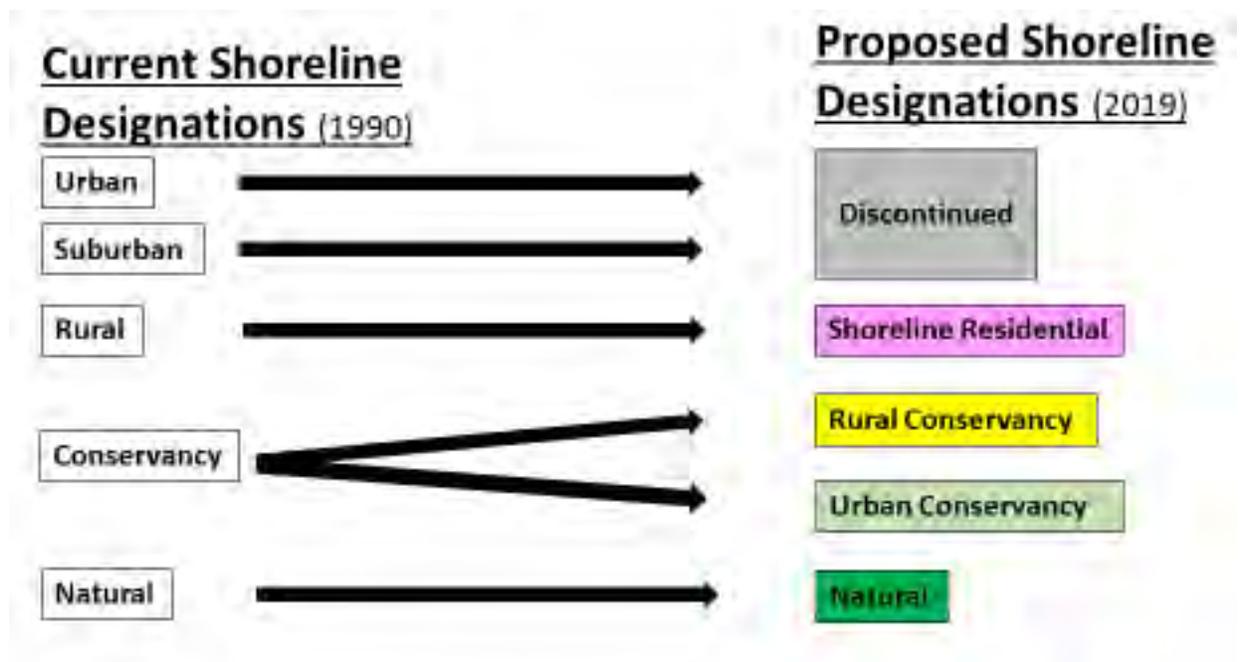


Figure 1. Current and proposed shoreline designations for the Shoreline Master Program.

### Additional Sources of Scientific Information

Since the May 15, 2019 Planning Commission meeting, staff have reviewed additional sources of best available science. The first is *Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications*, published by Washington Department of Fish and Wildlife in 2018. Volume 2, which provides management recommendations, is currently in preparation.

Volume 1 of this document discusses the zone of riparian influence using site-potential tree height, which WDFW defines as the average maximum height of the tallest dominant trees (200 years or more) for a given site class. Chapter 9 of Volume 1 offers the following findings (see document for full list):

- Protection and restoration of riparian ecosystems remains important because of their importance to wildlife, ecosystem services provided, and their relationship and interaction with watershed-scale processes to create and maintain aquatic habitats and other ecosystem services.
- Riparian ecosystem width is estimated by one site-potential tree height (SPTH), measured from the edge of the channel, channel migration zone, or active floodplain; it also includes associated wetlands and steep slopes. Protecting functions within at least one SPTH is a scientifically supported approach if the goal is to protect and maintain high function of the riparian ecosystem.
- A near consensus holds that the most effective means of maintaining viable fish and wildlife populations is to maintain/restore ecosystem conditions that resemble the historic range of natural variability.
- Protection and restoration of watershed-scale processes are important for aquatic system function, and help maximize ecological benefits of riparian protections.
- Impending changes to aquatic systems as a result of climate change increases risk to species already threatened by human activities. The warming effects of climate change on rivers and streams threaten to drastically reduce fish distribution and viability throughout the Pacific Northwest (Beechie et al. 2013).
- The use of the precautionary principle and adaptive management are particularly appropriate when dealing with complex and dynamic systems, and when we have uncertainty related to exactly how management activities affect functioning of watershed and riparian systems.

The current draft of Riparian Ecosystems, Volume 2: Management Recommendations, does not provide a recommendation for the width of riparian buffers or riparian management zones, however it does reiterate the following conclusion from Volume 1:

One Site-Potential Tree Height (SPTH) measured from each edge of the active channel or each edge of the channel migration zone is the estimated width of the riparian ecosystem. Protecting functions within at least one SPTH is a scientifically supported approach if the goal is to protect and maintain high function of the riparian ecosystem.

The report does provide buffer recommendations from a variety of other sources:

Agency & Document	Year		Recommended Width (SPTH = Site-Potential Tree Height)
U.S. Forest Service and Bureau of Land	1994	Fish-bearing	Two SPTH (200+ yrs old) or 300

Management – Northwest Forest Plan			ft., whichever is greater
		Not fish-bearing	One SPTH (200+ yrs old), or 150 ft., whichever is greater
Washington Department of Natural Resources – Habitat Conservation Plan for Washington’s Forested State Trust Lands	1997	Fish-bearing	<ul style="list-style-type: none"> <li>• One SPTH (100 yrs old) or 100 ft whichever is greater</li> <li>• 50 or 100 ft wind buffer when moderate potential for windthrow</li> </ul>
		Not fish-bearing	<ul style="list-style-type: none"> <li>• Type 4: 100 ft</li> <li>• Type 5: protected when necessary</li> </ul>
Washington Department of Natural Resources – Forests and Fish Report (HCP for Washington Forest Practices Rules)	2000	Fish-bearing	Type S and F waters: <ul style="list-style-type: none"> <li>• One SPTH (100 years old)</li> </ul>
		Not fish-bearing	Type Np: 50 ft on 50% of length <ul style="list-style-type: none"> <li>• Type Np &amp; Ns: 30 ft equipment limitation zone</li> </ul>

Staff also recently reviewed a synthesis of riparian buffer best available science prepared by the King County Department of Natural Resources and Parks. The results of their literature review indicate the following buffer widths to support various functions of riparian areas:

Reported Width	Riparian Function Provided
10-328 feet	Greater than 50% of nutrient, sediment, and pesticide reduction
5-225 feet	Significant shading and moderation of instream temperatures
50-328 feet	Support microclimate conditions
13-213 feet	Greater than 50% of large wood recruitment
10-164 feet	Support bank stability and minimize unnatural rates of erosion
10-246 feet	Support invertebrate prey, litter-detritus inputs, and benthic invertebrate diversity and abundance