By Email

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Re: Skagit County Shoreline Master Program comprehensive and periodic review update

Dear Mr. Yunge,

Evergreen Islands, Washington Conservation Action (formerly Washington Environmental Council), Skagit Audubon Society, Audubon Washington, Mt. Baker Group of the Sierra Club, Futurewise, and Skagit Land Trust respectfully submit these comments to assist the Washington Department of Ecology ("Ecology") in ensuring that the Skagit County Shoreline Master Program Update ("SMP Update") achieves the ecological protection mandated by Washington's Shoreline Management Act ("SMA"). As you know, this is the first comprehensive update that Skagit County has conducted since the late 1970s, more than 40 years ago, and this update therefore provides an essential opportunity to modernize the SMP to reflect advances in our collective understanding of both the built and natural environments. Given the possibility that the SMP may not be updated for another decade or two, it is critical to future proof it as much as possible with our current knowledge of ecosystem altering conditions like sea level rise and shrinking numbers of Southern Resident Killer Whales. An environmentally-proactive SMP Update is particularly important for the county that hosts the Skagit River, the most ecologically productive remaining river in Washington.

The current draft of the SMP Update takes steps to improve the Skagit SMP's protection of shoreline functions and values, but it also falls short in a few conspicuous areas, including the

following:

- excessive administrative discretion – authorizing buffer reductions up to 50% without public review;
- absence of language to protect new development, existing infrastructure and property, and ecological values from sea level rise and riparian zone flooding from storms;
- authorization of development known to impact eelgrass and kelp beds;
- allowance for unnecessary armoring;
- inconsistent and, in some instances undersized, riparian buffers;
- inappropriate exclusion of review for access roads and tree cutting in shoreline buffers;
- inadequate protections against saltwater intrusion;
- excessive impervious surface coverage for rural lands;
- non-water-dependent shoreline development in the rural conservancy SED; and
- the lack of a tracking mechanism for impacts from shoreline development.

We submitted comments similar to these to Skagit County during its review (see attached), but they received inadequate attention, and we are relying on you to rectify that oversight.

Before delving into the specific revisions that we proposed for the SMP Update, which can be found beginning at page 10 below, these comments examine the ecological and legal context for this update in the following sections:

Section A – the ecological state of our Skagit County and Puget Sound shorelines and importance of the local shorelines of statewide significance;

Section B -- the Shoreline Management Act's ("SMA") ecological protection priority and requirements;

Section C – the direction provided in the Washington Department of Ecology Minimum Guidelines ("Guidelines"), including the requirement to use the most current technical and scientific information available;

Section D -- the inability of mitigation provisions to achieve no net loss; and

Section E – several provisions that must be revised for consistency with the SMA.

In addition, we note that we express our support for the detailed comments submitted by the Swinomish Indian Tribal Community, and urge you to implement their recommendations. Like several of our earlier comments, those recommendations have not received the attention they deserve. As co-managers with hard-fought Treaty rights for meaningful access to fish, their

recommendations to preserve those fish and the habitat upon which they depend merit special attention.

A. The State of Puget Sound Shorelines.

Notwithstanding the millions of dollars dedicated to recovering the health of Puget Sound shorelines, their ecological health continues to decline.[1] According to the Puget Sound Partnership ("Partnership"), of the 28 vital sign indicators of Puget Sound ecosystem health with targets for 2020, only 4 met the target.[2] As has been well-publicized, but bears repeating, the southern resident orcas have declined significantly since their listing on the Endangered Species Act in 2005, Puget Sound Chinook similarly haven't improved since their listing in 1999, and Pacific herring numbers continue to decline.[3] The Southern Resident orcas are threatened by: (1) an inadequate availability of their primary prey, Chinook salmon, (2) legacy and new toxic contaminants, (3) disturbances from vessel traffic and noise , and (4) other threats.[4] And Skagit County can play a significant role in their recovery--a 2018 analysis by the National Oceanic and Atmospheric Administration and the Washington Department of Fish and Wildlife ranked the fall Chinook stocks that originate in the Skagit River as highest in importance as a food source for the orcas and ranked the spring Chinook stocks in the Skagit River as high importance.[5]

In-depth investigation by the member Tribes of the Northwest Indian Fisheries Commission has found similarly that the poor ecological health of Puget Sound watersheds continues to prevent them from receiving the benefits of Treaties signed decades ago, including the right to obtain adequate fish from their usual and accustomed places. In its portion of the 2020 State of Our Watersheds report, the Swinomish Indian Tribal Community set forth the

[1] Puget Sound Partnership, State of the Sound Report.
[2] https://vitalsigns.pugetsoundinfo.wa.gov/ (last visited June 6, 2021).
[3] Puget Sound Partnership, State of the Sound Report, at 15.
[4] State of Washington Office of the Governor, Executive Order 18-02 Southern Resident Killer Whale Recovery and Task Force p. 1 (March 14, 2018), *available at*: https://www.governor.wa.gov/sites/default/files/exe_order/eo_18-02_1.pdf.
[5] National Oceanic and Atmospheric Administration and the State of Washington Department of Fish and Wildlife, *Southern Resident Killer Whale Priority Chinook Stocks* p. 6 (June 22, 2018), *available at*: https://www.documentcloud.org/documents/4615304-SRKW-Priority-Chinook-Stocks.html.

following findings: [6]

(1) while Skagit River tidal delta habitat restoration has proven successful, the pace has slowed since 2009 and the delta has reached only about 82% of the desired future condition established in the Skagit River Chinook Recovery Plan;

(2) since 2008, an additional 5 miles of nearshore armoring have severed the marine environment from its terrestrial connection;

(3) high stream temperatures continue to be a limiting factor for Skagit River Chinook and steelhead recovery, and reliance on voluntary efforts continues to fail to achieve sufficient riparian planting to meet needed temperatures; and

(4) of the 443 culverts on fish-bearing streams in the Skagit watershed, 352 were documented as fish-passage blockages and the other 91 were unknown but may block fish.

Skagit County benefits from a rich ecological heritage and also from some delayed development pressure along its shorelines relative to central Puget Sound. It also contains sizeable stretches of shorelines of statewide significance, including Skagit Bay and Padilla Bay up to the Ordinary High Water Mark and all other shorelines seaward of the extreme low tide line.[7] And the Skagit River delta provides habitat for the largest numbers of wintering waterfowl and shorebirds in Puget Sound. These shorelines deserve adequate protection.

B. Shoreline Management Act.

In 1971, the Washington legislature enacted the SMA in response to the "recognition that the shorelines are fragile and that the increasing pressure of additional uses being placed on them necessitated increased coordination in their management and development."[8] The primary purpose of the SMA is "'to protect the state shorelines as fully as possible,'"[9] and, in contrast with the general rule of strict construction, the SMA "is to be broadly construed in

[6] Northwest Indian Fisheries Commission, *2020 State of Our Watersheds; A Report by the Treaty Tribes in Western Washington*, at 335-350, excerpt attached hereto as Attachment A.
[7] *Id.*; RCW 90.58.030(2)(f).
[8] RCW 90.58.020; *Buechel v. Dep't of Ecology*, 125 Wn.2d 196, 203, 884 P.2d 910 (1994).
[9] *Lund v. Dep't of Ecology*, 93 Wn. App. 329, 336-37, 969 P.2d 1072 (1998) (quoting *Buechel*, 125 Wn.2d at 203).

order to protect the state shorelines as fully as possible."[10] The SMA therefore establishes a policy that "contemplates protecting against adverse effects to the public health, the land and its vegetation and wildlife, and the waters of the state and their aquatic life, while protecting generally the public right of navigation and corollary rights incidental thereto."[11] In addition, "uses shall be preferred which are consistent with control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon use of the state's shoreline."[12] And in the limited instances when alterations of the natural condition of the shorelines of the state are authorized, the SMA gives priority to uses that promote public access, like ports, parks, marinas, piers, and single family residences.[13]

In addition to protections for all shorelines, the SMA establishes heightened protection for shorelines of statewide significance. For these shorelines, the SMA sets forth a preference in the following order for uses that:

(1) recognize and protect the statewide interest over local interest;

(2) preserve the natural character of the shoreline;

(3) result in long term over short term benefit;

(4) protect the resources and ecology of the shoreline;

(5) increase public access to publicly owned areas of the shorelines;

(6) increase recreational opportunities for the public in the shoreline; and

(7) provide for any other element as defined in RCW 90.58.100 deemed appropriate or necessary.[14]

C. Shoreline Master Program Guidelines.

In 2003, the Washington Department of Ecology ("Ecology") adopted the Shoreline

[10] RCW 90.58.900; *Buechel*, 125 Wn.2d at 203.
[11] *Buechel*, 125 Wn.2d at 203 (citing RCW 90.58.020; *Caminiti v. Boyle*, 107 Wn.2d 662, 732 P.2d 989 (1987)).
[12] RCW 90.58.020.
[13] *Id.* (emphasis added).
[14] RCW 90.58.020.

Master Program Guidelines ("Guidelines") to assist counties in updating their SMPs for consistency with the SMA and applicable advances in scientific knowledge.[15] The Guidelines establish binding state agency rules that must be met by shoreline master program updates.[16] The sections below: (1) explore the Guidelines' scientific requirement; (2) identify the requirement to monitor and address cumulative impacts; and (3) set forth the Guidelines' requirements for ecological protection and restoration.

1. The SMA and Guidelines emphasize ecological protection and restoration.

The Guidelines draw upon the SMA to direct SMPs to protect and restore shoreline habitat. For example, the Guidelines incorporate the SMA's hierarchy for shoreline uses noted above and acknowledge the SMA's emphasis on the "the maintenance, protection, restoration, and preservation" of the shoreline environment.[17]

The Update must both **conserve** remaining ecological functions and promote the **restoration** of impaired ecological functions.[18] First, the Update must "include regulations and mitigation standards ensuring that each permitted development will not cause a net loss of ecological functions of the shoreline."[19] Second, the Update must ensure that the aggregated impacts of exempt development will not cause a net loss of ecological functions.[20] Third, counties that contain shorelines with impaired functions must include goals and policies to restore those functions and must coordinate and facilitate restoration projects through their SMPs.[21] Thus, the Update must protect resources even in substantially developed or degraded areas because they can retain important ecological functions, like an intensely developed harbor that also serves as a fish migration corridor.[22]

To achieve adequate ecological protection, counties must manage shorelines to

[15] Chapter 173-26 WAC.
[16] RCW 90.58.030(3)(b) & (c), .080(1) ("[l]ocal governments shall develop or amend a master program for regulation of uses of the shorelines of the state consistent with the required elements of the guidelines adopted by the department in accordance with the schedule established by this section) & (7).
[17] WAC 173-26-186(8).
[18] WAC 173-26-181, -186(8), -201(2)(c), -201(2)(f), -221(2), -221(5), -221(6).
[19] WAC 173-26-186(8)(b)(i).
[20] WAC 173-26-186(8)(b)(ii).
[21] WAC 173-26-186(8)(c); -201(2)(c).
[22] WAC 173-26-201(2)(c).

safeguard both: (1) ecosystem-wide processes like the presence and movement of fish and wildlife; and (2) individual components and localized processes like those associated with shoreline vegetation.[23] More specifically, the Update must offer policies and regulations that protect and restore **critical habitats**, including wetlands, critical freshwater habitats, and critical saltwater habitats like kelp and eelgrass beds, spawning and holding areas for forage fish, subsistence, commercial and recreational shellfish beds, mudflats, intertidal habitats with vascular plants, and areas with which priority species have a primary association.[24] The Update must therefore:

- Establish adequate buffer zones around critical saltwater habitats to separate incompatible uses;
- Protect existing and restore degraded near-shore habitat;
- Protect existing and restore degraded or lost salmonid, shorebird, waterfowl, or marine mammal habitat;
- Protect existing and restore degraded upland ecological functions important to critical saltwater habitats, including riparian and associated upland native plant communities;
- Improve water quality; and
- Protect existing and restore degraded sediment inflow and transport regimens.[25]

The Guidelines also require the protection of adequate shoreline **vegetation**. To protect property, human safety, visual qualities of the shoreline, and plant and animal species and their habitat, the Update must also protect and restore the ecological functions and ecosystem-wide processes performed by vegetation along shorelines.[26] SMPs must plan to conserve and restore vegetation and incorporate regulations that assure no net loss of shoreline ecological functions and ecosystem-wide processes, avoid adverse impact to soil hydrology, and reduce the hazard

[23] WAC 173-26-201(2)(c).
[24] WAC 173-26-221(2)(b)(iii), (c)(i), (c)(ii), and (c)(iii).
[25] WAC 173-26-221(2)(c)(iii)(B). It is important to note that although the Guidelines state that the "management planning should address those protections, the Guidelines define "should" as a mandatory term, stating that "'should' means that the particular action is required unless there is a demonstrated, compelling reason, based on policy of the Shoreline Management Act and this chapter, against taking the action." WAC 173-26-020(35).
[26] WAC 173-26-221(5)(b).

of slope failures and accelerated erosion.[27]

Last, the Guidelines' no-net-loss standard contemplates truly avoiding impacts where possible, rather than allowing impacts and then relying on aspirational compensatory mitigation to fix the impacts.[28] Thus, where a use or development is necessary to achieve another goal of the SMA, SMPs must "protect existing ecological functions and avoid new impacts to habitat and ecological functions" before implementing compensatory mechanisms.[29]

2. The Update must be based on the most current, accurate, and complete scientific and technical information available.

In contrast with the Growth Management Act, which requires that Best Available Science be "included" in the record but allows for departures, the SMA requires counties to understand and incorporate current scientific and technical information into the Update.[30] The statute directs counties to "[u]tilize a systematic interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts" and to "[u]tilize all information regarding hydrology, geography, topography, ecology, economics, and other pertinent data."[31] The Guidelines reiterate this requirement, instructing counties to review and amend the SMP through a process that "ensures meaningful understanding of current and potential ecological functions provided by affected shorelines."[32] The Guidelines further require that SMPs be based on "an analysis incorporating the most current, accurate, and complete scientific and technical information available."[33] To achieve this requirement, counties must first identify and assemble this information and then incorporate it where applicable.[34] In addition, counties should use the scientific information to identify risks that SMP provisions pose to ecological functions as well as assumptions and data gaps related to the

[27] *Id.*
[28] WAC 173-26-201(2)(c).
[29] *Id.*
[30] RCW 90.50.100(1)(a), (e); WAC 173-26-201(2)(a).
[31] RCW 90.50.100(1)(a), (e).
[32] WAC 173-26-186(8)(a) (emphasis added).
[33] WAC 173-26-201(2)(a) (emphasis added).
[34] *Id.*

scientific information used.[35]

As noted below, several provisions in the Update are not based on an analysis incorporating the most current, accurate, and complete scientific and technical information available.

D. Alterations of Critical Areas and Buffers in the Shoreline Must Be Strictly Curtailed Because Compensatory Mitigation Typically Fails to Replace Lost Functions.

Although few studies have evaluated success rates for marine mitigation projects, studies of wetland mitigation projects indicate that compensatory mitigation typically does not replace lost ecological functions even in the readily-visible terrestrial world. Twenty-five years ago, Race and Fonseca synthesized surveys of mitigation projects and found significantly flawed mitigation projects that: (1) did not adhere to established mitigation policies; (2) were frequently unsuccessful; and (3) often missed the deadline.[36] Race and Fonseca stated that "[t]here is need to acknowledge the extent to which non-scientific, real-world complications plague current policies and practices."[37] Another broad survey of structural and functional loss in restored wetlands found that after 100 years, 621 wetland sites continued to suffer biological structure and biogeochemical functioning 26% and 23% below reference sites.[38] And a 2008 study of 23 wetland mitigation projects found similarly that: (1) 67% of the projects did not meet permit requirements for wetland areas; (2) open-water/emergent wetlands were exchanged for scrub/shrub forested wetlands; (3) wetlands decreased in number from 134 to 65; and (4) smaller wetlands were lost.[39]

Last, a 2009 paper examined the reasons that biodiversity trading programs like critical areas compensatory mitigation provisions fail to achieve no-net-loss and found that such

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[35] WAC 173-26-201(2)(a)(ii), (iii).

[36] Margaret S. Race and Mark S. Fonseca, *Fixing Compensatory Mitigation: What Will It Take?*, 6 Ecological Applications 1, 94-101 (1996) (stating at page 97 that "[b]ased on over a decade of survey results, the cumulative record of past mitigation projects remains undeniably poor overall, with disappointingly few examples of success," and noting that exemptions virtually guarantee incremental loss of wetlands), attached hereto as Attachment B.

[37] Race and Fonseca, at 1.

[38] Moreno-Mateos, *et al*., *Structural and Functional Loss in Restored Wetland Ecosystems,* 10 PLoS Biology 1 (Jan. 2012), attached hereto as Attachment C.

[39] Kettlewell, *et al.*, *An Assessment of Wetland Impacts and Compensatory Mitigation in the Cuyahoga River Watershed, Ohio, USA*, 28 Wetlands 1, 57 (3/2008), attached hereto as Attachment D.

programs can succeed where the trade involves a simple, relatively measurable commodity, like sulfur dioxide in the air, but that they fail when attempting to trade biodiversity like wetland or riparian ecosystems because of their complexity, difficulty in measuring their functions, and lack of directly interchangeable parts.[40] Particularly pertinent here, the authors conclude that,

> given the option of saying to developers 'yes, with conditions' rather than 'no,' officials will prefer 'yes, with conditions' – particularly where compliance with conditions cannot be credibly measured and officials can avoid accountability for outcomes. Legitimized bartering can thus create a policy situation 'obscure enough to please all parties…and so ill-defined that failures…will be difficult to detect and impossible to litigate.'…In sum, while compensation and no net loss are worthy goals, and bartering biodiversity might appear more promising than simple and weakly enforced prohibitions, this article suggests policies that enable biodiversity trading may perversely yield worse biodiversity outcomes.[41]

This inability to ensure the replacement of complex ecosystems impacted by development warrants a greater emphasis on preventing development and uses that would impact shoreline ecological functions and thus require compensatory mitigation.

E. Specific Comments.

The sections below address the insufficiencies in the SMP Update identified above in the introduction.

1. Honoring Tribal Treaty Rights.

We fully support the ability of Tribal members to exercise their Treaty rights, including their rights to protect their cultural and archaeological resources and to fish in their usual and accustomed places (and concomitant right to have an adequate amount of fish available to catch). Consistent with that position, we request that the Update include language to prevent the installation of mooring buoys in locations that would interfere with fishing by Tribal members in usual and accustomed places. We also support the Update's provisions to notify Tribes of actions with the potential to interfere with those rights, and recommend that Skagit consider adding a project approval review expressly directed toward evaluating potential impacts to a Tribe's cultural resources from shoreline development if that is desired by Tribes with interests in the county.

[40] Walker, *et al.*, *Why bartering biodiversity fails*, Conserv. Ltrs 2 (2009), attached hereto as Attachment E.
[41] *Id*. at 155 (quoting Walker *et al.* 2008:226; Winter 1985).

2. Excessive administrative discretion for buffer reductions.

The Update inappropriately authorizes the reduction of shoreline buffers by up to 25% without public review or justification and up to 50% with an administrative variance process that bypasses a public hearing.[42] While Ecology's SMP Handbook contemplates the possibility of administrative buffer reductions, it recommends setting a strict limit (identifying 25% as typical) and recommends that the reduction both: (1) be associated with an alternative project design that increases protection of the most valuable buffer functions and values over standard buffer application; (2) is processed as a shoreline conditional use permit that requires Ecology approval. A shoreline conditional use permit, or variance, would also warrant public notice. The Update's administrative buffer reductions conflict with Ecology guidance, and find no basis in scientific recommendations. The reduction up to 25% does not require a more beneficial ecological alternative and would be approved without public notice or Ecology approval. The reduction of 25-50% also would not guarantee an alternative design that improves ecological outcomes over standard buffer application, though it would require public notice and Ecology approval. Given the importance of shoreline buffers for large woody debris, shade, bank integrity, runoff filtration, wildlife habitat, microclimate, and nutrient inputs, and reduction in a shoreline buffer that is not associated with buffer averaging should be processed as a hearing examiner variance that provides public notice and opportunity for comment before a reviewing body.

Thus, subsections 14.26.534(3) (buffer width decreasing for wetlands) and 14.26.574(3) (buffer width reduction for fish and wildlife habitat conservation areas) should be revised by inserting the following language: <u>buffer width decreasing may occur only with a variance</u>. In addition, subsection 14.26.735(2), which establishes two distinct tracks for variances, should be deleted so that shoreline buffer reductions occur through a unified variance process that provides members of the public a full opportunity to comment and participate in a hearing.

3. Sea level rise must be addressed.

Projected sea level rise poses one of the greatest potential disruptors to future shoreline protection and management, but has gone largely unaddressed in the Update. According to

[42] SCC 14.26.574(3); 14.26.735(2).

Projected Sea Level Rise for Washington State, a 2018 assessment, significant increases are expected for sea levels along Skagit County shorelines.[43] For example, after incorporating factors like vertical land movement, there is a 50% chance that by 2050, sea levels will rise in Skagit County by 0.6 feet for a low carbon emissions scenario and by 0.7 feet for a high emissions scenario.[44] By 2100, those numbers increase to 1.6 feet for a low emissions scenario and 2.1 feet for a high emissions scenario.[45] As can be seen on the National Oceanic and Atmospheric Administration sea level mapping tool available at: https://coast.noaa.gov/digitalcoast/tools/slr.html, a substantial amount of the Skagit River delta becomes inundated by sea level rise at levels approaching 2 feet.[46] That mapping tool already shows shallow coastal flooding areas in a large swath across this same area and marshes starting to migrate into this area at just ½ foot of rise.[47] In addition, not only is sea level rise very real, the rate is accelerating.[48]

When combined with storm surge and peak flows, sea level rise will significantly impact the Skagit flood plain. A 2016 paper concluded that these combined effects would increase the flood inundation level by 74% during a 100-year flood by the 2080s.[49] And combining peak annual tidal anomalies with projected sea level rise will mean that the historical 100-year peak high water level will be exceeded essentially every year by the 2050s.[50]

Naturally, given the significant anticipated sea level rise for our region, Ecology recommends that counties address sea level rise adaptation in SMP goals, policies, and regulations.[51] SMPs "are essential tools in assuring the wise development of coastal areas and the

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[43] Washington Coastal Resilience Project, *Projected Sea Level Rise for Washington State; a 2018 assessment* (2018) (updated July 2019), attached hereto as Attachment F.
[44] Relative Sea Level Rise Projections for Coastal Area Near 48.5N, 122.5W (Padilla Bay), attached as Attachment G.
[45] *Id.*
[46] NOAA Office of Coastal Management DigitalCoast, Sea Level Rise Viewer, *available at* https://coast.noaa.gov/digitalcoast/tools/slr.html (last visited June 7, 2021).
[47] *Id.*
[48] William and Mary Virginia Institute of Marine Science, *U.S. West Coast Sea-Level Trends & Processes, Trend Values for 2019*, *available at*: https://www.vims.edu/research/products/slrc/compare/west_coast/index.php (last visited June 7, 2020), screen shot attached hereto as Attachment H.
[49] J. Hamman, *et al.*, *Combined effects of projected sea level rise, storm surge, and peak river flows on water levels in the Skagit floodplain*, Northwest Science, 90(1): 57-78 (2016) (attached hereto as Attachment I).
[50] *Id.*
[51] Wash. Dept. of Ecology, Appendix A: Addressing Sea Level Rise in Shoreline Master Programs, 7, attached hereto as Attachment J.

protection of public resources as sea level increases. Many potential problems associated with sea level rise will intensify existing management challenges such as development in flood prone areas, construction of shoreline armoring, protection of beaches and salt marshes, and siting a variety of shoreline uses."[52] Consequently, your agency recommends "[l]imiting new development in highly vulnerable areas."[53] And this common sense approach has now been codified into law with the passage of HB 1181, which directs Ecology to update the Guidelines to require that SMPs address the impact of sea level rise and increased storm severity on people, property, and shoreline ecological functions and processes. Given the substantial passage of time since Skagit County created its SMP decades ago, and the lack of a guarantee that they will have the capacity to update it per the applicable schedule, we urge Ecology to take advantage of the opportunity to address sea level rise during the current Update.

These revisions can take the form of current Ecology example policies:

> *King County shall ensure that new projects for any major maintenance or replacement of utilities, roads, and other public infrastructure consider the impacts of sea level rise in the location, design, and operation of the projects; and*
>
> *Habitat protection and restoration projects in the shoreline jurisdiction shall consider implications of sea level rise and other climate change impacts to promote resiliency of habitats and species.*
>
> *Encourage all use and development to address potential adverse effects of global climate change and sea level rise.*

To these suggestions, we add the following:

> *New lots and new and expanded development should be located so they will not interfere with the landward expansion and movement of wetlands and aquatic vegetation as sea level rises.*

In addition, to ensure the protection of shoreline ecological functions, wetlands and shoreline vegetation must be allowed to migrate landward as naturally as possible.[54]

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[52] Wash. Dept. of Ecology, Appendix A: Addressing Sea Level Rise in Shoreline Master Programs, 5

[53] Ecology, *Preparing for a Changing Climate; Washington State's Integrated Response Strategy*, Pub. No. 12-01-004, 90 (April 2012), attached hereto as Attachment K.

[54] C. Craft, *et al.*, *Forecasting the effects of accelerated sea-level rise on tidal marsh ecosystem services*, FRONT ECOL ENVIRON 2009; 7, doi:10.1890/070219, at 6, attached hereto as Attachment L (Frontiers in Ecology and the Environment is a peer-reviewed scientific journal).

Policies like those above are necessary to protect residents and shoreline ecology and consistent with the SMA's direction to use the most current, accurate, and complete scientific and technical information available, as well as the SMA requirement to include "[a]n element that gives consideration to the statewide interest in the prevention and minimization of flood damages…."[55] Thus, we recommend that the Update add a policy within Chapter 6 of the SMP's Comprehensive Plan language that precludes shoreline armoring and construction of dikes in response to rising sea levels unless necessary to preserve existing public infrastructure or in association with restoration projects, and in those instances with methods that replicate natural processes.

In addition, the Update should include provisions designed to protect property from damage due to sea level rise and ecological functions from the impacts of building in flood zones. We have attached the sea level rise comments[56] that we submitted to Skagit County to list numerous revisions for the construction of new development outside of areas likely to flood due to sea level rise during their anticipated life span, but include the following three recommendations here as examples:

1. *New lots shall be designed and located so that the buildable area is outside the area likely to be inundated by sea level rise in 2100 and outside of the area in which wetlands and aquatic vegetation will likely migrate during that time.*

2. *Where lots are large enough, new structures and buildings shall be located so that they are outside of the area likely to be inundated by sea level rise in 2100 and outside of the area in which wetlands and aquatic vegetation will likely migrate during that time.*

3. *New and substantially improved structures shall be elevated above the elevation likely to be gained by sea level rise by 2100, or for the life of the structure, whichever is less.*

In addition to these proposals, we recommend that Skagit County implement the following comprehensive approach to adapting to sea level rise, as outlined by the California Coastal Commission:

1. *Determine the range of sea level rise projections relevant to the Skagit County*

[55] WAC 173-26-201(2)(a); RCW 90.58.100(2)(h).
[56] See March 31, 2022 Letter to Skagit County Board of County Commissioners re: Incorporating sea level rise into Skagit County's Comprehensive SMP Update (attached hereto as Attachment M)

shorelines subject to tidal influence. As a planning horizon, the County may want to note that development constructed today is likely to remain in place over the next 75-100 years or longer.[57]

2. *Identify potential physical sea level rise impacts on the Skagit County shorelines subject to tidal influence.*
3. *Assess potential risks from sea level rise to the resources and development on the shorelines subject to tidal influence.*
4. *Identify adaptation strategies to minimize risks. The California Coastal Commission Sea Level Rise Policy Guidance includes recommended adaptation strategies to consider.*[58]
5. *Include in the Update selected adaption strategies.*
6. *Implement the Update and monitor and revise as needed.*

4. Critical saltwater habitats like eelgrass and macroalgae must be protected.

Eelgrass and macroalgae serve a valuable ecological role in the nearshore environment.[59] The Puget Sound Nearshore Partnership dedicated a white paper to kelp and eelgrass in 2007 to emphasize the importance of that vegetation, noting that "both are highly productive, annually producing large amounts of carbon that fuel nearshore food webs, principally through detritus pathways" and that they "provide critical three-dimensional environments" for many marine organisms.[60] Juvenile salmonids and other fishes use eelgrass as migratory corridors, enjoying protection from predators and abundant food.[61]

A variety of human activities adversely impact eelgrass and kelps. Eelgrass and kelp rely on sunlight for growth, and suffer adverse impacts when shaded by overwater structures like docks;[62] grating does not does not appear to ameliorate the shading effects of those structures.[63] While shellfish may be an economically important industry and culturally important to Coast Salish

[57] *California Coastal Commission Sea Level Rise Policy Guidance: Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits*, 69 – 95 (Nov. 7, 2018), *available at*: https://www.coastal.ca.gov/climate/slrguidance.html (last visited June 7, 2011).
[58] *Id.* at 121 – 162.
[59] T. Mumford, *Kelp and Eelgrass in Puget Sound, Puget Sound Nearshore Partnership Report No. 2007-05* (2007).
[60] *Id.* at v.
[61] *Id.*
[62] *Id.*
[63] M. Lambert, *et al.*, *Do small overwater structures impact marine habitats and biota?* (March 30, 2023) (attached hereto as Attachment N).

Tribes, aquaculture activities can also compete with marine vegetation for space along shorelines, and displace it when installed in the same location.

The SMP Guidelines incorporate the most current scientific and technical information to direct development to avoid adverse impacts to eelgrass and kelps. Three applicable regulations provide that:

- aquaculture should not be permitted in areas where it would result in a net loss of ecological functions, adversely impact eelgrass and macroalgae, or significantly conflict with navigation and other water-dependent uses. WAC 173-26-241(3)(b)(i)(C);

- "[l]ocal governments shall protect kelp and eelgrass beds…" by prohibiting overwater structures intruding into critical saltwater habitats absent an enumerated exception. WAC 173-26-221(2)(c)(iii)(C); and

- buffer zones should be required around critical saltwater habitats to separate them from incompatible development (WAC 173-26-221(2)(c)(iii)(B).

Notwithstanding this knowledge of the impacts of aquaculture and overwater structures on eelgrass, and the concomitant directives from the Guidelines to design shoreline master programs to prevent these impacts, the Update would allow aquaculture to displace eelgrass and macroalgae and overwater structures to shade that vegetation.[64] The Update would allow aquaculture to impact native eelgrass and macroalgae, subject to a direction to minimize, rather than avoid, those impacts.[65] With regard to boating facilities, the Update omits any protections for eelgrass and kelps, allowing them to be constructed in any shoreline location.[66]

Consequently, the Update must be revised to: (1) prohibit aquaculture in eelgrass and macroalgae beds; and (2) separate overwater structures from the nearest edge of eelgrass sand macroalgae beds by a minimum of 25 feet. This revision would also be consistent with the Washington Department of Fish and Wildlife requirements for overwater structures at WAC

[64] SCC 14.26.415(4)(e); 14.26.420(4)(a).
[65] SCC 14.26.415(e).
[66] SCC 14.26.420.

220-660-380(3)(b).[67] **The revised text would look like the following:**

> **14.26.415(4)e. Aquaculture operations must be designed, located, and managed to ~~minimize~~ <u>avoid</u> impacts to ~~native~~ eelgrass and macroalgae, <u>with the exception that</u>**
>
> **i. Aquaculture operations are not required to avoid impacts on eelgrass or macroalgae that colonizes an aquaculture operation.**
>
> **~~ii. Aquaculture operations are not required to avoid impacts on non-native eelgrass.~~**

The protection of non-native eelgrass would be consistent with the current scientific understanding that *Zostera japonica* provides some ecological functions.

In addition, the underlined language below could be inserted into the boating facilities provisions:

> **(4) Development Standards.**
>
> **(a) Generally. Structures and uses must:**
>
> **(i) <u>be located at least twenty-five feet (measured horizontally from the nearest edge of the structure) and four vertical feet away from seagrass and kelp beds (measured at extreme low water);</u>**
>
> **(ii) <u>in documented herring spawning areas, be located at least twenty-five feet (measured horizontally from the nearest edge of the structure) and four vertical feet from macroalgae beds on which herring spawn (measured at extreme low water);</u>**
>
> **(iii) <u>if artificial nighttime lighting is used in the project, use low-intensity lights that are located and shielded to prevent light from attracting fish or disrupting fish migration behavior, unless there are safety constraints.</u>**

5. The Update should preclude unnecessary armoring.

The most current scientific and technical information available concludes that shoreline armoring like bulkheads can disrupt natural coastal processes essential for a variety of habitats and thus should be avoided where possible. The Marine Shoreline Design Guidelines ("MSDG") commissioned by the Aquatic Habitat Guidelines Program in 2014 declare that "[y]ears of scientific

[67] The County's Shoreline Analysis Report, at page 204, recommends that dock and pier standards be consistent with WDFW design standards to the extent practicable.

study has led to the determination that hard armor profoundly influences coastal processes, alters coastal ecology, and reduces the resilience of the coast to rising sea levels.[68] More recently, a comprehensive study of armoring effects conducted in 2016 found that armoring "was consistently associated with reductions in beach width, riparian vegetation, numbers of accumulated logs, and amounts and types of beach wrack and associated invertebrates."[69] To address the impacts of hard armoring, the MSDG recommends the use of best management practices, structure relocation, and implementation of "soft shore protection" designs, which contrast with hard armor by preserving natural coastal shoreline dynamics that are immobilized by an armored shore.[70] The MSDG define soft shore protection as that "which entails the use of indigenous materials such as gravel, sand, logs, and root masses in designs that have some degree of flexibility, mimicking natural processes.[71]

The SMP Guidelines reflect this current science, identifying a host of impacts that shoreline hardening typically causes, including beach starvation, habitat degradation, sediment impoundment, exacerbation of erosion, groundwater impacts, hydraulic impacts, loss of shoreline vegetation, loss of large woody debris, and restriction of channel movement.[72] The SMP Guidelines note that, "[g]enerally, the harder the construction measure, the greater the impact on shoreline processes, including sediment transport, geomorphology, and biological functions."[73]

To address these concerns, the SMP Guidelines state that "[n]ew development should be located and designed to avoid the need for future shoreline stabilization to the extent feasible." WAC 173-26-231(3)(a)(iii), and identify "less rigid materials, such as biotechnical vegetation measures or beach enhancement" as "soft" structural measures. WAC 173-26-231(3)(a)(ii).

While the Update generally limits construction of new shoreline structures in an effort to protect shoreline resources, it nonetheless authorizes armoring for new non-water-dependent

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[68] J. Johannessen, *et al.*, *Marine Shoreline Design Guidelines*, Washington Department of Fish and Wildlife (2014) (citation omitted) (excerpt attached hereto as Attachment O).
[69] M. Dethier, *et al.*, *Multiscale impacts of armoring on Salish Sea shorelines: Evidence for cumulative and threshold effects*, 175 Estuarine, Coastal and Shelf Science 106, 106 (2016), attached hereto as Attachment P.
[70] Attachment O, MSDG at xxiii.
[71] Attachment O, MSDG at xxi.
[72] WAC 173-26-231(3)(a)(ii).
[73] WAC 173-26-231(3)(a)(ii).

development and classifies hard elements like boulders as among the suite of preferred materials to be included in "soft" armor.[74]

For consistency with the latest science, the Update must be revised to prevent the construction of new armoring for new non-water-dependent development and to remove hard boulders from the suite of options characterized as "soft" armor. This could be achieved by revising the language of SCC 14.26.480(1)(a)(ii) as follows:

> **(i) "Soft shoreline stabilization" <u>means shore erosion limitation structures and measures that maintain or enhance ecological functions and are composed of primarily semi-rigid or flexible materials, bioengineering tailored to site-specific natural conditions, and vegetation, organized in a nonlinear, sloping arrangement, that dissipates wave energy and minimizes erosion in a way that mimics natural shoreline processes. Soft stabilization</u> may include the use of <u>sands, g</u>ravels, cobbles, ~~boulders~~, ~~and~~ logs, <u>and</u> ~~as well as~~ vegetation.**

Furthermore, we recommend that construction of bulkheads and other forms of armoring occur only pursuant to a conditional use permit to ensure a full evaluation of their impacts.

6. Logging access roads must be defined as development and subject to review.

The SMP Guidelines require the conservation of adequate shoreline vegetation to protect property, human safety, visual qualities of the shoreline, and plant and animal species and their habitat, and the Update thus must protect and restore the ecological functions and ecosystem-wide processes performed by vegetation along shorelines. WAC 173-26-221(5)(b). The Update exempts logging road development in shorelines by declaring that "the construction of temporary access roads" for timber cutting does not constitute development and thus does not require review under the SMP.[75] **This exception is inconsistent with the SMP Guidelines and their requirement to evaluate the potential impacts of shoreline development, and must be removed.**

7. Fish and wildlife habitat conservation area riparian buffers must be consistent

[74] SCC 14.26.480(2)(c)(ii); 14.26.480(1)(a)(ii).
[75] SCC 14.26.445(1)(d).

with WDFW's most current scientific recommendations.

The most current, accurate, and complete scientific and technical information available recommends a riparian management zone ("RMZ") approach to protecting riparian functions.[76] According to WDFW, the "[p]rotection and restoration of riparian ecosystems continues to be critically important because: (a) they are disproportionately important, relative to area, for aquatic species (e.g., salmon) and terrestrial wildlife; (b) they provide ecosystem services such as water purification and fisheries…; and (c) by interacting with watershed-scale processes, they contribute to the creation and maintenance of aquatic habitats.[77]

Consequently, WDFW's Riparian Ecosystem management recommendations prescribe an approach that would protect against most development within an RMZ that extends one site tree height potential in width from the edge of a river or its channel migration zone.[78] Within the RMZ, the following would be precluded: (1) clearing, grading, and filling; (2) new development that would require bank hardening; (3) on-site sewage systems without habitat monitoring plans; or (4) removal of hazard trees without proper evaluation and avoidance and minimization of impacts.[79] The RMZs would begin at the outer edge of the Channel, Channel Migration Zone, or active floodplain, whichever is wider, and extend for a width equivalent to the site potential tree height of the dominant tree type in that area.[80] The recommendations for RMZs apply to urban areas as well as non-urban areas.[81]

The zone would extend the same width regardless of the stream type because there is "no evidence that full riparian ecosystem functions along non-fish-bearing streams are less important to aquatic ecosystems than full riparian ecosystem functions along fish-bearing streams."[82] Instead, WDFW found that non-fish-bearing streams: (1) support a unique community of aquatic and riparian-obligate wildlife; (2) provide movement corridors for wildlife, particularly in the face

[76] WDFW, *Riparian Ecosystems, Volume 2: Management Recommendations*, 7-8 (Dec. 2020) (hereafter "Riparian Recommendations") (attached hereto as Attachment Q).
[77] *Id.* at 4.
[78] *Id.*
[79] *Id.* at 25-27.
[80] *Id.* at 5.
[81] *Id.* at 29-30.
[82] *Id.* at 7.

of changing climate conditions; (3) provision fish-bearing streams with matter and energy; and (4) provide cool water to downstream reaches.[83]

The current version of the Update establishes riparian buffers of 150, 100, and 50 feet depending on the stream type.[84]

For consistency with the current scientific and technological information, the Update's riparian buffer system should be revised to apply buffers equal to <u>one site potential tree height</u> for all rivers and streams.

8. Rural conservancy lands should observe a 10% maximum impervious surface.

The SMP Guidelines state that "[s]cientific studies support density or lot coverage limitation standards that assure that development will be limited to a maximum of ten percent total impervious surface area within the lot or parcel, will maintain the existing hydrologic character of the shoreline." WAC 173-26-211(5)(b)(ii)(D). Nonetheless, the Update authorizes 25-30% impervious surface in the rural conservancy designation for all uses for existing lots.[85]

The Update conflicts with the Guidelines and must be revised to limit the maximum impervious surface to 10% of the parcel for both newly subdivided lots and existing lots.

9. Seawater intrusion should be fully addressed.

We appreciate the Update provisions addressing seawater intrusion areas, Section 14.26.550, and look forward to the County addressing this critical issue for many of our shorelines. As you are likely aware, community members have expressed concerns about past County practices that have allowed chloride pollution in Guemes Island's Sole Source Aquifer through seawater intrusion, which, according to local reports, has severely impacted the safe drinking water for some 65 individual homes. In fact, seawater intrusion likely caused by excess well drilling led to a well-documented Group A well failure in the Potlatch II development on Guemes Island, resulting in substantial costs for homeowners there. And despite evidence of

[83] *Id.* at 7-8.
[84] SCC 14.26.573(1)(c).
[85] Table 14.26.310-1 Dimensional Standards (hard surface limits). See note 3 as well.

multiple well failures due to seawater intrusion, the County has not restricted new well drilling on Guemes Island prior to the Update. We appreciate that, notwithstanding previous public positions to the contrary, the County is now embracing its authority to regulate well drilling to prevent seawater intrusion impacts caused by irresponsible shoreline well drilling.

In exercising its authority to regulate shoreline wells, we recommend that the SMP Update incorporate water quality protections like the following:

(1) no wells drilled within 200 ft of the ordinary high water mark in areas of known seawater intrusion; and

(2) wells to be drilled within 1000 ft of marine shorelines should have a hydrogeological study prior to drilling to ensure that the new well does not exacerbate seawater intrusion or compromise further wells subject to seawater intrusion.

10. Protect native salmon from net pens.

Due to the significant risk to native salmon and to comply with the Guidelines' direction that aquaculture facilities "be designed and located so as not to spread disease to native aquatic life [or] establish new nonnative species which cause significant ecological impacts," all net pen finfish aquaculture must be proscribed in Skagit County waters. WAC 173-26-241(3)(b)(i)(C). These waters offer some of the most productive native salmon fisheries remaining in the state and must therefore be protected from the high risk of impacts from net pens. **Consequently, we recommend that SCC 14.26.415(7) be revised to prohibit commercial net pens for non-native and native finfish. This revision would be consistent with the policy that the Washington Department of Natural Resources announced in late 2022 to prohibit commercial finfish net pen aquaculture on state-owned aquatic lands, and would maintain those protections in the event that DNR later revokes that policy.**

11. The Update should require a variance for the expansion or replacement of non-conforming residential structures.

The Guidelines acknowledge that it may be necessary to regulate existing uses to avoid

harm to public health and safety or the environment.[86] The Guidelines also acknowledge that shoreline ecological functions can be impaired by past actions, unregulated activities, and exempt development.[87] As a result, the SMP should be revised to include provisions to address uses and development that become nonconforming in a manner that achieves the policies of the SMA consistent with constitutional or other legal limits.[88] This approach also offers an opportunity to achieve the Guidelines' mandate to improve shoreline ecological functions over time through restoration of impaired functions.[89]

While the Update addresses nonconforming docks and bulkheads by requiring conformity with current rules upon replacement of those structures, it would allow full replacement of residential structures in some instances and increased nonconformity for expansions without a variance to protect against new impacts.[90] The County should take advantage of the reasonable opportunity that nonconforming rules offer to bring new construction into compliance with current rules and prevent expanded nonconformities. This approach is consistent with the SMA and Guidelines and with the directive from the Washington Supreme Court that "[t]he present use of a nonconforming building may be continued but it cannot be increased nor can it be extended indefinitely if zoning is to accomplish anything."[91] A variance process would allow for the review of proposals to modify nonconforming development and direct new aspects to conform to existing rules.

12. Development setbacks should apply to allow for structural maintenance and preservation without impacting buffers.

We recommend a 30-foot setback consistent with recommendations by state agencies, such as that found at: DNR.wa.gov/fightingfire, as well as WDFW's Riparian Handbook. This is also consistent with the National Fire Protection Association recommendations for preparing

[86] WAC 173-26-191(2)(a)(iii)(A).
[87] WAC 173-26-186(8).
[88] WAC 173-26-191(2)(a)(iii)(A).
[89] WAC 173-26-201(2)(f).
[90] Update, at Part VI, Sections 14.26.610-.650.
[91] *State ex rel. Miller v. Cain*, 40 Wn.2d 216, 221, 242 P.2d 505 (1952).

homes for wildlife.[92]

These setbacks could be established by inserting language like the following:

SCC 14.26.533(1) Wetland Buffer Setbacks.

(a) New and expanded development shall be setback a minimum of 30 feet from the outer edge of wetland buffers to avoid the need to impact the buffer to conduct maintenance activities on that development or to clear trees in the buffer to achieve defensible space around that development as a fire consideration.

SCC 14.26.574(1): Fish and Wildlife Habitat Conservation Areas Buffer Setbacks.

(a) New and expanded development shall be setback a minimum of 30 feet from the outer edge of wetland buffers to avoid the need to impact the buffer to conduct maintenance activities on that development or to clear trees in the buffer to achieve defensible space around that development as a fire consideration.

13. Standardized setbacks should apply to pesticide and herbicide application near waters.

For consistency with Comprehensive Plan policies that recognize the need to avoid contaminating water bodies with fertilizer and pesticide use (*e.g.*, Sections 6C-1.2 (Water Quality), 6G-4 (Water Quality, Stormwater and Nonpoint Pollution), the SMP's development regulations should apply consistent setbacks for the application of pesticides and herbicides near county shorelines. At present, proposed Section 14.26.465 (Recreation Developments) specifies a 25 foot chemical-free swath adjacent to water bodies, while the wetland standards at 14.26.534 recommend establishing covenants to limit the use of pesticides within 150 feet of wetlands. The residential development standards likewise omit a setback for pesticide use.

Consequently, to maintain the functions and values of shorelines and critical areas, we recommend that the SMP be revised to include a standard 100-foot setback from marine, lake, stream, and riparian shorelines and wetland edges for the application of pesticides or herbicides

[92] Nation Fire Protection Association "preparing homes for wildfire" webpage, *available at*: https://www.nfpa.org/Public-Education/By-topic/Wildfire/Preparing-homes-for-wildfire (last visited June 7, 2021).

for any use except herbicides registered and permitted for aquatic invasives control. Pesticides are pervasive in the waters of the Puget Sound, and impact aquatic biota including endangered species such as salmon and orca. The 100-foot distance has been recommended as an additional optional Best Management Practice by Ecology's 2014 and 2019 Stormwater Management Manuals for Western Washington, both of which have been adopted by Skagit County.

14. Rural Conservancy SED shoreline.

Development in the Rural Conservancy SED should be limited to water-dependent uses to protect those shorelines.

15. Impact Tracking.

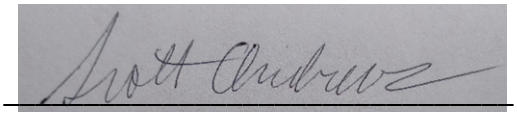
Last, while we heard staff support for the establishment of a mechanism to track future shoreline impacts that arise through the implementation of the Update, the version of the Update that the Board of County Commissioners adopted did not include such a mechanism. The Guidelines emphasize the need to evaluate and consider the cumulative impacts of reasonably foreseeable future shoreline development.[93] The Guidelines also direct counties to establish a mechanism to document and periodically evaluate the cumulative effects of authorized development on shoreline conditions.[94] As noted by the County's Cumulative Impacts Analysis (page 9) and Restoration Plan (page 64), this mechanism must track shoreline conditions, permit activity, and policy and regulatory effectiveness. Such a component must be added to the SMP Update prior to its final adoption. In addition, since the County's shoreline analysis for the SMP Update was drafted in 2011, this tracking mechanism must use 2011 as the baseline for development impacts and track all shoreline development that has occurred since that time. Ecology should be able to assist Skagit County in gathering these data and creating and implementing a standardized mechanism for tracking net loss of impacts to shoreline ecological functions and processes.

We look forward to working with Ecology to ensure that the Update protects shoreline functions now and into the future.

[93] WAC 173-26-186(8)(d).
[94] WAC 173-26-191(2)(a)(iii)(D).

Sincerely,

/s Tom Glade
Tom Glade, President
Evergreen Islands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