

From: [Tim Trohimovich](#)
To: [Sonja Wiser](#); [Jenna Kay](#)
Subject: Comments on Clark Cty SMP Periodic Review project (CPZ2019-00030) for Aug 20 public hearing
Date: Monday, August 17, 2020 12:02:44 PM
Attachments: [Futurewise Coms on Clark Co SMP Update Aug 17 2020 Final.pdf](#)
[2020 distribution by county.xlsx](#)

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Dear Planning Commissioners and Staff:

Enclosed please find Futurewise's Comments on the Clark County Shoreline Master Program Periodic Review project (CPZ2019-00030) for the August 20, 2020, public hearing. Thank you and commissioner for considering our comments.

If you require anything else, please let me know.

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August 17, 2020

Mr. Karl Johnson, Chair
Clark County Planning Commission
c/o Sonja Wiser
PO Box 9810
Vancouver, Washington 98666-9810

Dear Chair Johnson and Planning Commissioners:

Subject: Comments on the Clark County Shoreline Master Program Periodic Review project (CPZ2019-00030) for the August 20, 2020 public hearing.

Send via email to: Sonja.wiser@clark.wa.gov; jenna.kay@clark.wa.gov

Thank you for the opportunity to comment on the Clark County Shoreline Master Program Periodic Review project (CPZ2019-00030). Futurewise strongly supports the review and update. The update is an important opportunity to provide for the recovery of important fish and wildlife resources such as the Chinook salmon and to begin addressing the adverse effects of global warming including sea level rise and increased wildfire danger. We have recommendations to address these important issues and to strengthen the SMP review and update included in this letter below.

Futurewise works throughout Washington State to support land-use policies that encourage healthy, equitable and opportunity-rich communities, and that protect our most valuable farmlands, forests, and water resources. Futurewise has members and supporters throughout Washington State including Clark County.

This letter will first summarize our recommendations. We then explain the recommendations in more detail.

Summary of the Recommendations

- Please clarify that the SMP protects fish and wildlife habitats depicted in the PHS GIS database as points, lines, and areas and requires the review of developments that can harm these habitats. This is needed to protect all priority species and habitats and to comply with the Shoreline Master Program (SMP) Guidelines. Please see pages 2 and 13 of this letter for more information.
- Futurewise agrees with the Friends of Clark County and the Sierra Club recommendations that avoiding impacts should be required whenever possible. The Shoreline Master Program Update should include stronger avoidance and minimization requirements. Please see page 2 of this letter for more information.
- Futurewise recommends that Clark County require wider setbacks between development and shoreline and critical areas buffers to protect homes and property from wildfire danger. Please see page 5 of this letter for more information.

- Futurewise strongly recommends that the Clark County Shoreline Master Program (SMP) should comprehensively address sea level rise and include regulations protecting people, property, and the environment from the adverse effects of sea level rise. As is documented below, sea level rise is accelerating and buildings need to be protected from increased flooding. Please see page 5 of this letter for more information.
- We recommend that the County require an analysis of all geologically hazardous which can adversely impact a proposed development and require case-by-case determinations of landslide buffers based on the risk to the proposed development. This will better protect people and property. Please see page 9 of this letter for more information.
- Clark County should adopt up-to-date riparian buffers in Clark County Code (CCC) 40.460.530F.1.a.(3) and CCC 40.460.570 to protect Chinook habitat and other aquatic habitats. Please see page 12 of this letter for more information.
- Increase mitigation ratios for riparian vegetation mitigation in CCC 40.460.570D. to protect fish and wildlife habitats. This is necessary to comply with the SMP Guidelines. Please see page 17 of this letter for more information.

Detailed Comments on Exhibit 1 Shoreline Master Program Periodic Review Proposed Changes (Aug. 2020)

Futurewise strongly supports the amendments to Clark County Code (CCC) 40.440.010 to provide that the County will use the most recent priority habitat and species lists and Washington State Department of Wildlife guidance. We also recommend that CCC 40.440.010C.1.b. clarify that the SMP protects fish and wildlife habitats depicted in the PHS GIS database as points, lines, and areas. Please see CCC 40.440.010C.1.b. on pages 6 and 7

Futurewise strongly supports the amendments to Clark County Code (CCC) 40.440.010 to provide that the County will use the most recent priority habitat and species lists and Washington State Department of Wildlife guidance. This is necessary to protect wildlife in Clark County and comply with the Shoreline Master Program Guidelines.¹

The Shoreline Master Program (SMP) Guidelines in WAC 173-26-221(2)(a)(ii) provide that shoreline master programs “must” “[p]rovide a level of protection to critical areas within the shoreline area [including fish and wildlife habitat conservation areas] that assures no net loss of shoreline ecological functions necessary to sustain shoreline natural resources[.]”² WAC 173-26-191(2) provides in relevant part that “[t]he terms ‘shall,’ ‘must,’ and ‘are required’ and the imperative voice, mean a mandate; the action is required ...”

¹ See for example Shoreline Master Program (SMP) Guideline WAC 173-26-221(2)(a)(ii). Although the Shoreline Master Program (SMP) Guidelines are called “guidelines,” they are actually binding state agency rules and shoreline management program updates must comply with them. RCW 90.58.030(3)(b) & (c); RCW 90.58.080(1) & (7).

² The SMP Guidelines specifically recognize fish and wildlife habitat conservation areas as critical areas. WAC 173-26-020(8); WAC 173-26-221(2)(a)(ii).

The actual location of most fish and wildlife habitats are identified through the Washington Department of Fish and Wildlife's (WDFW) Priority Habitats and Species (PHS) geographic information system maps and datasets.³ This habitat data is depicted as points, lines, and polygons, the polygons are also referred to as areas.⁴ The screen shots from the PHS on the Web website show various habitats in unincorporated Clark County.⁵ As you can see, the habitats are shown as lines and areas. The line habitats include the federally threatened Coho and Chinook salmon. The area habitats include the state endangered Sandhill Crane and waterfowl concentrations.⁶ However, CCC 40.440.010C.1.b. does not clearly protect the area and line habitats from adjacent and nearby development. CCC 40.440.010C.1.b. only requires review for developments that are near but will impact out of water priority species and habitats for point habitats, not line or area habitats.

Development outside of but near line and area habitats can adversely impact those habitats. For example, state endangered Sandhill Crane habitats in Clark County are identified as areas.⁷ The Washington Department of Fish and Wildlife management recommendations provide that during the March to September breeding season road and foot travel should be avoided within 1,312 feet of nests.⁸ New construction or traffic increases within 2,625 feet of feeding areas should be avoided.⁹ And the construction of roads and buildings within 1,640 feet of known night roost locations should be avoided.¹⁰ However, because the Sandhill Crane habitats are identified as areas and not points, these destructive activities can take place well within the exclusion distances recommend by the Washington Department of Fish and Wildlife or even adjacent to the areas.

The "Public Comment Summary: Clark County SMP Periodic Review 2020" in its response to Comment 8-6 on page 10 of 19 states that the SMP protects all habitats including points, lines, and areas. But CCC 40.440.010C.1.b only requires review of developments within 1,000 feet of point habitats. Developments that are close enough to line and area habitats to harm them must also be reviewed and if necessary, managed to protect line and area habitats.

³ Washington Department of Fish and Wildlife, *Using PHS Data: Frequently Asked Questions* pp. 1 – 2 of 5 last accessed on Aug. 11, 2020 at <http://apps.wdfw.wa.gov/phsontheweb/faq.htm> and on the data CD enclosed with Futurewise's Feb. 25, 2020, letter transmitting supporting materials with the filename: "PHS on the Web FAQs.pdf."

⁴ *Id.* at 1 – 2 of 5; Washington Department of Fish and Wildlife, PHS on the Web screen shots pp. 1 – 4 accessed on Feb. 18, 2020 at: <http://apps.wdfw.wa.gov/phsontheweb/> and on the data CD enclosed with Futurewise's Feb. 25, 2020, letter transmitting supporting materials with the filename: "2020-02-18_10-37-06 PHS on Web Clark Co.pdf." materials.

⁵ Washington Department of Fish and Wildlife, PHS on the Web screen shots pp. 1 – 4.

⁶ *Id.* at pp. 1 – 3; Washington Department of Fish and Wildlife, Priority Habitats and Species identified for Clark County accessed on Aug. 11, 2020 at: <https://wdfw.wa.gov/species-habitats/at-risk/phs/list> and enclosed with this letter with the filename: "2020_distribution_by_county.xls."

⁷ Washington Department of Fish and Wildlife, Priority Habitats and Species identified for Clark County (2020); Washington Department of Fish and Wildlife, PHS on the Web screen shots p. 3.

⁸ Kelly A. Bettinger and Ruth Milner Sandhill Crane *Grus canadensis* (2000) in E. Larsen, J. M. Azerrad, N. Nordstrom, editors *Management Recommendations for Washington's Priority Species, Volume IV: Birds* p. 19-3 (Washington Department of Fish and Wildlife, Olympia, Washington, USA) accessed on Aug. 11, 2020 at:

<https://wdfw.wa.gov/sites/default/files/publications/00026/wdfw00026.pdf> and on the CAO on CD on CD 1 enclosed with Futurewise's Feb. 25, 2020, letter in the \Fish & Wildlife Habitat\PSH Management Recs directory with the filename: "wdfw00026.pdf."

⁹ *Id.* at p. 19-4.

¹⁰ *Id.*

WAC 173-26-221(2)(a)(ii) requires no net loss of all fish and wildlife habitat conservation areas including the habitats shown in the databases as areas and lines.¹¹ By failing to protect habitats depicted as lines and areas from nearby development, CCC 40.440.010C.1.b fails to comply with this requirement. To address this inconsistency with the SMP Guidelines, we recommend that the following amendment to CCC 40.440.010C.1.b with our additions double underlined and our deletions double struck through.

b. Other Priority Habitats and Species ~~(PHS)~~ Areas (PHS) as defined in the most current WDFW Priority Habitats and Species List. Areas identified by and consistent with WDFW priority habitats and species criteria, including areas within one thousand (1,000) feet of individual priority habitats and areas used by priority species points mapped by WDFW sites. The county shall defer to WDFW in regards to classification, mapping and interpretation of priority habitat species.

Futurewise agrees with the Friends of Clark County and the Sierra Club recommendations that avoiding impacts should be required whenever possible. Please see CCC 40.460.530A.10 on pages 55 and 56, CCC 40.460.530.F.3. on pages 59 and 60 and CCC 40.460.530G.1.m. on page 61

Futurewise agrees with the Friends of Clark County and the Sierra Club that impacts to shoreline ecological functions and systems should be avoided whenever possible and that the Clark County Shoreline Master Program should have stronger avoidance requirements. *As Making Mitigation Work: The Report of the Mitigation that Works Forum* concluded “[e]stimates of mitigation success vary, but local, regional, and national studies show that most mitigation projects fail to fully achieve their intended goals and are not effectively replacing lost or damaged resources, habitats, and functions. We are not even close to achieving the goal of no net loss for wetlands and other aquatic habitats.”¹² This is why for forum’s “Recommendation 1” is to “Reinforce the Importance of Avoiding and Minimizing Impacts to Resources that are Highly Valuable or Difficult to Replace.”¹³ The Shoreline Master Program regulations must include strengthened avoidance and minimization requirements.

¹¹ *Olympic Stewardship Found. v. State Envtl. & Land Use Hearings Office through W. Washington Growth Mgmt. Hearings Bd.*, 199 Wn. App. 668, 690, 399 P.3d 562, 572 (2017) *review denied Olympic Stewardship Foundation v. State Department of Ecology*, 189 Wn.2d 1040, 409 P.3d 1066 (2018) and *certiorari denied Olympic Stewardship Foundation v. State of Washington Environmental and Land Use Hearings Office*, 139 S.Ct. 81, 202 L.Ed.2d 25 (Oct. 01, 2018) “In fact, reasonable and appropriate uses should be allowed on the shorelines only if they will result in no net loss of shoreline ecological functions and systems. See RCW 90.58.020; WAC 173-27-241(3)(j).” See also *Futurewise v. Stevens County*, EWGMHB Case No. 05-1-0006, Final Decision and Order (Jan. 13, 2006), at 2 *affirmed Stevens Cty. v. Futurewise*, 146 Wn. App. 493, 497, 192 P.3d 1, 3 (2008) *review denied Stevens Cty. v. Futurewise*, 165 Wn.2d 1038, 205 P.3d 132 (2009).

¹² ESA and Ross & Associates Environmental Consulting, Ltd., *Making Mitigation Work: The Report of the Mitigation that Works Forum* (Washington State Department of Ecology Olympia, Washington Publication Number: 08-06-018: Dec. 2008) last accessed on Aug. 115, 2020 at: <https://fortress.wa.gov/ecy/publications/summarypages/0806018.html> and on the CAO on CD on CD 1 enclosed with Futurewise’s Feb. 25, 2020, letter in the Wetlands directory with the filename: “0806018.html.pdf.”

¹³ *Id.* at p. 7.

We appreciate and strongly support that the proposed amendment to CCC 40.460.530G.1.m., on page 61, provides that the requirement to avoid, then to minimize, and then to mitigate any impacts that were not avoided or minimized applies to wetland buffers. To provide for adequate protection for habitat conservation areas, a similar require should apply to habitat conservation area buffers and be included in CCC 40.460.530.F.3.

Futurewise strongly recommends that the Clark County Shoreline Master Program should comprehensively address sea level rise. Please see CCC 40.460.530D.3. on page 58

The Shoreline Management Act and Shoreline Master Program (SMP) Guidelines require shoreline master programs to address the flooding that will be caused by sea level rise.¹⁴ RCW 90.58.100(2)(h) requires that shoreline master programs “shall include” “[a]n element that gives consideration to the statewide interest in the prevention and minimization of flood damages ...” WAC 173-26-221(3)(b) provides in part that “[o]ver the long term, the most effective means of flood hazard reduction is to prevent or remove development in flood-prone areas ...” The areas subject to sea level rise are flood prone areas just the same as areas along bays, rivers, or streams that are within the 100-year flood plain. RCW 90.58.100(1) and WAC 173-26-201(2)(a) also require “that the ‘most current, accurate, and complete scientific and technical information’ and ‘management recommendations’ [shall to the extent feasible] form the basis of SMP provisions.”¹⁵

Sea level rise is a real problem that is happening now. Sea level is rising and floods and erosion are increasing. In 2012 the National Research Council concluded that global sea level had risen by about seven inches in the 20th Century.¹⁶ A recent analysis of sea-level measurements for tide-gage stations, including the Astoria, Oregon tide-gauge, shows that sea level rise is accelerating.¹⁷ The Virginia Institute of Marine Science (VIMS) “emeritus professor John Boon, says ‘the key message from the 2019 report cards is a clear trend toward acceleration in rates of sea-level rise at 25 of our 32 tide-gauge stations. Acceleration can be a game changer in terms of impacts and planning, so we really need to pay heed to these patterns.’

“VIMS marine scientist Molly Mitchell says ‘seeing acceleration at so many of our stations suggests that—when we look at the multiple sea-level scenarios that NOAA puts out based on global models—we may be moving towards the higher projections.’”¹⁸

¹⁴ Although the Shoreline Master Program (SMP) Guidelines are called “guidelines,” they are actually binding state agency rules and shoreline management program updates must comply with them. RCW 90.58.030(3)(b) & (c); RCW 90.58.080(1) & (7).

¹⁵ *Taylor Shellfish Company, Inc., et al., v. Pierce County and Ecology (Aquaculture II)*, Final Decision and Order Central Puget Sound Region Growth Management Hearings Board Case No. 18-3-0013c (June 17, 2019), at 10 of 81 footnote omitted.

¹⁶ National Research Council, *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* p. 23, p. 156, p. 96, p. 102 (2012) last accessed on Aug. 11, 2020 at: <https://www.nap.edu/download/13389>.

¹⁷ William and Mary Virginia Institute of Marine Science, *U.S. West Coast Sea-Level Trends & Processes Trend Values for 2019* last accessed on Aug. 11, 2020 at: https://www.vims.edu/research/products/slrc/compare/west_coast/index.php and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “2020-02-05 US West Coast Sea-Level Trends.pdf.”

¹⁸ David Malmquist, *Sea-level report cards: 2019 data adds to trend in acceleration* [Virginia Institute of Marine Science](https://www.vims.edu) website (Jan. 30, 2020) last accessed on Aug. 11, 2020 at:

Climate Central projects two feet of sea level rise for the Columbia River and other tidally influenced water bodies in Clark County by 2100 based on the National Research Council's mid-range Pacific coast sea level rise projections.¹⁹ The extent of the sea level rise currently projected for Clark County can be seen on the NOAA Office for Coastal Management Digitalcoast Sea Level Rise Viewer available at: <https://coast.noaa.gov/digitalcoast/tools/slr.html>.

Projected sea level rise will substantially increase flooding. As Ecology writes, “[s]ea level rise and storm surge[s] will increase the frequency and severity of flooding, erosion, and seawater intrusion—thus increasing risks to vulnerable communities, infrastructure, and coastal ecosystems.”²⁰ Not only our marine shorelines will be impacted, as Ecology writes “[m]ore frequent extreme storms are likely to cause river and coastal flooding, leading to increased injuries and loss of life.”²¹

Zillow recently estimated that 31,235 homes in Washington State may be underwater by 2100, 1.32 percent of the state's total housing stock. The value of the submerged homes is an estimated \$13.7 billion.²² Zillow wrote:

It's important to note that 2100 is a long way off, and it's certainly possible that communities [may] take steps to mitigate these risks. Then again, given the enduring popularity of living near the sea despite its many dangers and drawbacks, it may be that even more homes will be located closer to the water in a century's time, and these estimates could turn out to be very conservative. Either way, left unchecked, it is clear the threats posed by climate change and rising sea levels have the potential to destroy housing values on an enormous scale.²³

Sea level rise will have an impact beyond rising seas, floods, and storm surges. The National Research Council wrote that:

Rising sea levels and increasing wave heights will exacerbate coastal erosion and shoreline retreat in all geomorphic environments along the west coast. Projections of future cliff and bluff retreat are limited by sparse data in Oregon and Washington and by a high degree of geomorphic variability along the coast. Projections using

https://www.vims.edu/newsandevents/topstories/2020/slrc_2019.php and on the data CD enclosed with Futurewise's Feb. 25, 2020, letter transmitting supporting materials with the filename: “2020-02-05 2019 data adds to sea level rise acceleration trend.pdf.”

¹⁹ Climate Central, *Sea level rise and coastal flood risk: Summary for Clark County, WA* p. 1 (2016) last accessed on Aug. 11, 2019 at: https://riskfinder.climatecentral.org/county/clark-county.wa.us?comparisonType=postal-code&forecastType=NOAA2017_int_p50&level=7&unit=ft and on the data CD enclosed with Futurewise's Feb. 25, 2020, letter transmitting supporting materials with the filename: “WA_Clark_County-report sea level rise 2016.pdf.”

²⁰ State of Washington Department of Ecology, *Preparing for a Changing Climate Washington State's Integrated Climate Response Strategy* p. 90 (Publication No. 12-01-004: April 2012) last accessed on Aug. 11, 2020 at:

<https://fortress.wa.gov/ecy/publications/publications/1201004.pdf> and on the data CD enclosed with Futurewise's Feb. 25, 2020, letter transmitting supporting materials with the filename: “1201004.pdf.”

²¹ *Id.* at p. 17.

²² Krishna Rao, *Climate Change and Housing: Will a Rising Tide Sink all Homes?* ZILLOW webpage (Jun. 2, 2017) last accessed on Aug. 11, 2020 at: <http://www.zillow.com/research/climate-change-underwater-homes-12890/>.

²³ *Id.*

only historic rates of cliff erosion predict 10–30 meters [33 to 98 feet] or more of retreat along the west coast by 2100. An increase in the rate of sea-level rise combined with larger waves could significantly increase these rates. Future retreat of beaches will depend on the rate of sea-level rise and, to a lesser extent, the amount of sediment input and loss.²⁴

These impacts are why the Washington State Department of Ecology recommends “[l]imiting new development in highly vulnerable areas.”²⁵ The “Public Comment Summary: Clark County SMP Periodic Review 2020” on page 9 of 19 responding to comment 8-3 states that there is limited guidance from Ecology. What the is not the case as is proven in Ecology’s *Preparing for a Changing Climate Washington State’s Integrated Climate Response Strategy*. The Public Comment Summary also argues that a comprehensive approach is needed to address climate change. While Futurewise agrees, it is the shorelines that will be flooded first by sea level rise. Incorporating protections for shoreline properties and development will buy the county time for a more comprehensive approach. The Public Comment Summary also says that this would be a big job requiring extensive data. But that was why Futurewise provided the County with data on climate change and sea level rise back in February.

Unless wetlands and shoreline vegetation can migrate landward, their area and ecological functions will decline.²⁶ If development regulations are not updated to address the need for vegetation to migrate landward in feasible locations, wetlands and shoreline vegetation will decline. This loss of shoreline vegetation will harm the environment. It will also deprive marine shorelines of the vegetation that protects property from erosion and storm damage by modifying soils and accreting sediment.²⁷ This will increase damage to upland properties.

To prevent these adverse impacts Futurewise recommend that the SMP require new lots and new buildings be located outside the area of likely sea level rise and if that is not possible, buildings should be elevated above the likely sea level rise. These requirements will provide better protection for buildings and people and will also allow wetlands and marine vegetation to migrate as the sea

²⁴ National Research Council, *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* p. 135 (2012).

²⁵ State of Washington Department of Ecology, *Preparing for a Changing Climate Washington State’s Integrated Climate Response Strategy* p. 90 (Publication No. 12-01-004: April 2012).

²⁶ Christopher Craft, Jonathan Clough, Jeff Ehman, Samantha Joye, Richard Park, Steve Pennings, Hongyu Guo, and Megan Machmuller, *Forecasting the effects of accelerated sea-level rise on tidal marsh ecosystem services* FRONT ECOL ENVIRON 2009; 7, doi:10.1890/070219 p. *6 last accessed on Aug. 11, 2020 at:

<http://nsmn1.uh.edu/steve/CV/Publications/Craft%20et%20al%202009.pdf>. *Frontiers in Ecology and the Environment* is a peer-reviewed scientific journal. *Frontiers in Ecology and the Environment* Journal Overview webpage last accessed on Aug. 11, 2020 at: <https://esajournals.onlinelibrary.wiley.com/journal/15409309>. Both on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “Craft et al 2009.pdf” and “Frontiers in Ecology and the Environment - Journal Overview” respectively.

²⁷ R. A. Feagin, S. M. Lozada-Bernard, T. M. Ravens, I. Möller, K. M. Yeagei, A. H. Baird and David H. Thomas, *Does Vegetation Prevent Wave Erosion of Salt Marsh Edges?* 106 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA pp. 10110-10111 (Jun. 23, 2009) last accessed on Aug. 11, 2020 at: <http://www.pnas.org/content/106/25/10109.full> and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “10109.full.pdf.” This journal is peer-reviewed. *Id.* at p. 10113.

level rises. We recommend the following new regulations be added to the SMP periodic update in CCC 40.460.530D.3. on page 58.

- h. 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.
- i. Where lots are large enough, new structures and buildings shall be located so that they are 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.
- j. New and substantially improved structures shall be elevated above the likely sea level rise elevation in 2100 or for the life of the building, whichever is less.

Also, to avoid flooding, erosion, and other adverse impacts on shoreline resources, Futurewise strongly recommends that the County take a comprehensive approach to adapting to sea level rise and its adverse impacts modeled on the process California’s coastal counties and cities use. The process includes six steps.²⁸

1. Determine the range of sea level rise projections relevant to Clark County’s shorelines subject to tidal influence. The California Coastal Commission recommends analyzing intermediate and long-term projections because “development constructed today is likely to remain in place over the next 75-100 years, or longer.”²⁹
2. Identify potential physical sea level rise impacts in Clark County’s 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.³⁰
5. Adopt an updated shoreline master program incorporating the selected adaption strategies.
6. Implement the updated shoreline master program and monitor and revise as needed. Because the scientific data on sea level rise is evolving, the California Coastal Commission recommends modifying “the current and future hazard areas on a five to ten year basis or as

²⁸ *California Coastal Commission Sea Level Rise Policy Guidance: Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits* pp. 69 – 95 (Nov. 7, 2018) last accessed on Aug. 11, 2020 at: <https://www.coastal.ca.gov/climate/slrguidance.html> and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “0_Full_2018AdoptedSLRGuidanceUpdate.pdf.”

²⁹ *Id.* at p. 74.

³⁰ *Id.* at pp. 121 – 162.

necessary to allow for the incorporation of new sea level rise science, monitoring results, and information on coastal conditions.”³¹

Require analysis of all geological hazards which can adversely impact a proposed development and require case-by-case determinations of landslide buffers based on the risk to the proposed development. Please see CCC 40.460.530E.2.a. and 3.c. on page 58

The March 22, 2014, Oso landslide “claimed the lives of 43 people, making it the deadliest landslide event in United States history. Of the approximately 10 individuals who were struck by the landslide and survived, several sustained serious injuries.”³² So properly designating geologically hazardous areas and protecting people from geological hazards is very important.

Homeowner’s insurance does not cover the damage from landslides. “Insurance coverage for landslides is uncommon. It is almost never a standard coverage and is difficult to purchase inexpensively as a policy endorsement.”³³

None of the Oso victims’ homes were covered by insurance for landslide hazards.³⁴ And that is common when homes are damaged by landslides.³⁵ For example, on March 14, 2011, a landslide damaged the home of Rich and Pat Lord.³⁶ This damage required the homeowners to abandon their home on Norma Beach Road near Edmonds, Washington. Because their homeowner’s insurance did not cover landslides, they lost their home.³⁷ This loss of what may be a family’s largest financial asset is common when homes are damaged or destroyed by landslides or other geological hazards.

³¹ *Id.* at p. 94.

³² Jeffrey R. Keaton, Joseph Wartman, Scott Anderson, Jean Benoît, John deLaChapelle, Robert Gilbert, David R. Montgomery, *The 22 March 2014 Oso Landslide, Snohomish County, Washington* p. 1 (Geotechnical Extreme Events Reconnaissance (GEER): July 22, 2014) last accessed on Aug. 11, 2020 at: http://www.geerassociation.org/index.php/component/geer_reports/?view=geerreports&layout=build&id=30 and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “GEER_Oso_Landslide_Report.pdf.” If the American territories are included, then the Oso landslide is the second deadliest landslide in American history. R.M. Iverson, D.L. George, K. Allstadt, *Landslide mobility and hazards: implications of the Oso disaster* 412 EARTH AND PLANETARY SCIENCE LETTERS 197, 198 (2015). The Geological Society of America gave an award to *The 22 March 2014 Oso Landslide, Snohomish County, Washington*. Hannah Hickey, Joseph Wartman, David Montgomery honored for Oso landslide report p. 1 (July 15, 2016) on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “GEER Oso Report Receives Award.pdf.”

³³ Robert L. Schuster & Lynn M. Highland, *The Third Hans Cloos Lecture: Urban landslides: socioeconomic impacts and overview of mitigative strategies* 66 BULLETIN OF ENGINEERING GEOLOGY AND THE ENVIRONMENT 1, p. 22 (2007) last accessed on Aug. 11, 2020 at: https://www.researchgate.net/publication/225794820_The_Third_Hans_Cloos_Lecture_Urban_landslides_socioeconomic_impacts_and_overview_of_mitigative_strategies.

³⁴ Sanjay Bhatt, *Slide erased their homes, but maybe not their loans* *The Seattle Times* (April 2, 2014) last accessed on Aug. 11, 2020 at: http://old.seattletimes.com/html/latestnews/2023278858_mudslidefinancialxml.html.

³⁵ *Id.*

³⁶ Ian Terry, *Abandoned and trashed after mudslide, Edmonds house now for sale* *The Herald* (Feb. 11, 2015). The house is for sale after the bank who held the Lord’s mortgage took ownership of the home. *Id.* Last accessed on Aug. 11 2020 at: <http://www.heraldnet.com/article/20150211/NEWS01/150219829>.

³⁷ *Id.* at p. *6.

Landslide buyouts are rare and when they occur the property owner often only recovers pennies on the dollar. The property owners bought out after the Aldercrest-Banyon landslide in Kelso, Washington destroyed their homes received 30 cents on the dollar.³⁸ This underlines why preventing development in geologically hazardous areas is just plain ordinary consumer protection.

Landslides in Western Washington can run out long distances. The 1949 Tacoma Narrows Landslide, in Tacoma “failed catastrophically along steep” 300 feet high bluffs and ran out 1,500 feet into Puget Sound.³⁹ This is five times the bluff height. The 2014 Oso slide ran out for over a mile (5,500 feet) even though the slope height was 600 feet.⁴⁰ This was nine times the slope height. Recent research shows that long runout landslides are more common than had been realized.⁴¹ This research documents that over the past 2000 years, the average landslide frequency of long runout landslides in the area near the Oso landslide is one landslide every 140 years.⁴² The landslides ran out from 656 feet to the 6,561 feet of the 2014 landslide.⁴³ The 2013 Ledgewood-Bonair Landslide on Whidbey Island extended approximately 300 feet into Puget Sound.⁴⁴ In a study of shallow landslides along Puget Sound from Seattle to Everett, the average runout length was 197.5 feet (60.2

³⁸ Isabelle Sarikhan, *Sliding Thought Blog, Washington’s Landslide Blog* Landslide of the Week – Aldercrest Banyon Landslide July 29, 2009 last accessed on Aug. 11, 2020 at: <https://slidingthought.wordpress.com/2009/07/29/landslide-of-the-week-aldercrest-banyon-landslide/>.

³⁹ Alan F. Chleborad, *Modeling and Analysis of the 1949 Narrows Landslide, Tacoma, Washington* xxxi ENVIRONMENTAL AND ENGINEERING GEOSCIENCE 305 p. 305 (1994) last accessed on Aug. 11, 2020 at: <https://pubs.geoscienceworld.org/aeg/eeg/article-abstract/xxxi/3/305/137520/modeling-and-analysis-of-the-1949-narrows?redirectedFrom=fulltext> and cited page on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “Modeling and Analysis of the 1949 Narrows Landslide, Tacoma, WA _ Environmental and Engineering Geoscience.pdf” Environmental & Engineering Geoscience is a peer-reviewed journal. Environmental & Engineering Geoscience Complete Author Instructions p. 1 of 6 (May 8, 2012) on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “Environmental & Engineering Geoscience Author Instructions.pdf.”

⁴⁰ Jeffrey R. Keaton, Joseph Wartman, Scott Anderson, Jean Benoît, John deLaChapelle, Robert Gilbert, David R. Montgomery, *The 22 March 2014 Oso Landslide, Snohomish County, Washington* p. 56 & p. 144 (Geotechnical Extreme Events Reconnaissance (GEER): July 22, 2014).

⁴¹ Sean R. LaHusen, Alison R. Duvall, Adam M. Booth, and David R. Montgomery, *Surface roughness dating of long-runout landslides near Oso, Washington (USA), reveals persistent postglacial hillslope instability* GEOLOGY pp. *2 – 3, published online on 22 December 2015 as doi:10.1130/G37267.1 and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “G37267.1.full.pdf”; Geological Society of America (GSA) Data Repository 2016029, *Data repository for: Surface roughness dating of long-runout landslides near Oso, WA reveals persistent postglacial hillslope instability* p. 4 and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “2016029.pdf.” Geology is a peer-reviewed scientific journal. Geology – Prep webpage last accessed on Aug. 11, 2020 at:

<http://www.geosociety.org/GSA/Publications/Journals/Geology/GSA/Pubs/geology/home.aspx#overview> and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “Geology – Prep.pdf.”

⁴² Sean R. LaHusen, Alison R. Duvall, Adam M. Booth, and David R. Montgomery, *Surface roughness dating of long-runout landslides near Oso, Washington (USA), reveals persistent postglacial hillslope instability* GEOLOGY p. *2, published online on 22 December 2015 as doi:10.1130/G37267.1.

⁴³ Geological Society of America (GSA) Data Repository 2016029, *Data repository for: Surface roughness dating of long-runout landslides near Oso, WA reveals persistent postglacial hillslope instability* p. 4.

⁴⁴ Stephen Slaughter, Isabelle Sarikhan, Michael Polenz, and Tim Walsh, *Quick Report for the Ledgewood-Bonair Landslide, Whidbey Island, Island County, Washington* pp. 3 – 4 (Washington State Department of Natural Resources, Division of Geology and Earth Resources: March 28, 2013) last accessed on Aug. 11, 2020 at: http://www.dnr.wa.gov/publications/ger_qr_whidbey_island_landslide_2013.pdf.

m) and the maximum runout length was 771 feet (235 m).⁴⁵ So only requiring development that must obtain a county approval and is in or within 100 feet of a geologic hazard area to comply with the geologically hazardous area requirements as CCC 40.460.530E.2.a. does not adequately protect people and property. As the cited landslide runouts show, limiting the toe of slope buffer to half of the slope height but not to exceed 15 feet as CCC 40.430.020D.2.a. does will not protect people and property. Similarly, limiting the top of slope buffer to one third of the slope height but not to exceed 40 feet as CCC 40.430.020D.2.b. does will not protect people and property.

The Joint SR 530 Landslide Commission recommends identifying “[c]ritical area buffer widths based on site specific geotechnical studies” as an “innovative development regulation[]” that counties and cities should adopt.⁴⁶ So we recommend that all properties that may be adversely impacted by a steep slope hazard should have their buffers based on a critical areas report for that site. Construction should not be allowed in buffer areas. These standards are necessary to protect Clark County families and their largest investment, their homes. For these reasons we recommend that CCC 40.460.530E.2.a. be revised to read as follows with our additions double underlined and our deletions struck through.

a. All construction, development, earth movement, clearing, or other site disturbance which may be adversely impacted by ~~requires a permit, approval or other authorization from the County in or within one hundred (100) feet of a~~ geologic hazard area shall comply with the requirements of this Program.

For the above reasons we recommend that CCC 40.460.530E.3. be revised to read as follows with our additions double underlined and our deletions struck through.

a. The Shoreline Administrator shall determine the size of the required buffer and setback based upon a critical area report prepared by a geotechnical engineer or geologist. ~~Required buffers and setbacks for development activities in geologic hazard areas are specified in Section 40.430.020.~~

b. ~~The Shoreline Administrator may approve buffers and setbacks which differ from those required by Section 40.430.020(D)(1) if the applicant submits a geologic hazard area study described in Section 2 40.430.030(C), which technically demonstrates and illustrates that the alternative buffer provides protection which is greater than or equal to that provided by the buffer required in Section 40.430.020(D)(1).~~

⁴⁵ Edwin L. Harp, John A. Michael, and William T. Laprade, *Shallow-Landslide Hazard Map of Seattle, Washington* p. 17 (U.S. Geological Survey Open-File Report 2006–1139: 2006) last accessed on Aug. 11, 2020 at: <http://pubs.usgs.gov/of/2006/1139/> and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “of06-1139_508.pdf.”

⁴⁶ The SR 530 Landslide Commission, *Final Report* p. 31 (Dec. 15, 2014) last accessed on Aug. 11, 2020 at: http://www.governor.wa.gov/sites/default/files/documents/SR530LC_Final_Report.pdf and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “SR530LC_Final_Report.pdf.”

☞The Shoreline Administrator may increase buffers or setbacks where necessary to meet requirements of the International Building Code.

Adopt up-to-date riparian buffers in CCC 40.460.530F.1.a.(3) on pages 58 and 59 and CCC 40.460.570 to protect Chinook habitat and other aquatic habitats

As has been reported in media and scientific reports, the Southern Resident orcas, or killer whales, are threatened by (1) an inadequate availability of prey, the Chinook salmon, “(2) legacy and new toxic contaminants, and (3) disturbance from noise and vessel traffic.”⁴⁷ “Recent scientific studies indicate that reduced Chinook salmon runs undermine the potential for the Southern Resident population to successfully reproduce and recover.”⁴⁸ A 2018 analysis by the National Oceanic and Atmospheric Administration and the State of Washington Department of Fish and Wildlife ranked the Lower Columbia spring Chinook stocks that originate in the Lewis River as the 7th highest in importance as food sources for the Southern Resident killer whales.⁴⁹ The shoreline master program update is an opportunity to take steps to help recover the Southern Resident orcas, the Chinook salmon, and the species and habitats on which they depend.

The Shoreline Master Program (SMP) Guidelines, in WAC 173-26-221(3)(c), provides in part that “[i]n establishing vegetation conservation regulations, local governments must use available scientific and technical information, as described in WAC 173-26-201 (2)(a). At a minimum, local governments should consult shoreline management assistance materials provided by the department and *Management Recommendations for Washington's Priority Habitats*, prepared by the Washington state department of fish and wildlife where applicable.”

The State of Washington Department of Fish and Wildlife has recently updated the Priority Habitat and Species recommendations for riparian areas. The updated management recommendations document that fish and wildlife depend on protecting riparian vegetation and the functions this vegetation performs such as maintaining a complex food web that supports salmon and maintaining temperature regimes to name just a few of the functions.⁵⁰

⁴⁷ State of Washington Office of the Governor, Executive Order 18-02 Southern Resident Killer Whale Recovery and Task Force p. 1 (March 14, 2018) last accessed on Aug. 11, 2020 at:

https://www.governor.wa.gov/sites/default/files/exe_order/eo_18-02_1.pdf and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “eo_18-02_1.pdf.”

⁴⁸ *Id.*

⁴⁹ 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) last accessed on Aug. 11, 2020 at:

<https://www.documentcloud.org/documents/4615304-SRKW-Priority-Chinook-Stocks.html> and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “SRKW-Priority-Chinook-Stocks.pdf.”

⁵⁰ Timothy Quinn, George F. Wilhere, and Kirk L. Krueger, technical editors, *Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications* pp. 265 – 68 & p. 270 (A Priority Habitat and Species Document of the Washington Department of Fish and Wildlife, Olympia, WA: Updated Jan. 2020) last accessed on Aug. 11, 2020 at:

<https://wdfw.wa.gov/publications/01987/> and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “wdfw01987.pdf.” This report was peer-reviewed. *Id.* at pp. 11 – 12.

The updated *Riparian Ecosystems, Volume 1: Science synthesis and management implications* scientific report concludes that 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 (Naiman and Bilby 2001; NRC 2002; Richardson et al. 2012), and c) by interacting with watershed-scale processes, they contribute to the creation and maintenance of aquatic habitats.”⁵¹ The report states that “[t]he width of the riparian ecosystem is estimated by one 200-year site-potential tree height (SPTH) measured from the edge of the active channel or active floodplain. Protecting functions within at least one 200-year SPTH is a scientifically supported approach if the goal is to protect and maintain full function of the riparian ecosystem.”⁵² For Clark County, the stream length-weighted third quartile 200-year SPTH is 235 feet.⁵³

The “Public Comment Summary: Clark County SMP Periodic Review 2020” in its response to Comment 8-5 on page 10 of 19 recommends that the buffers based on SPTH should wait until the report is final. But the science document recommending that riparian buffers be based on site potential tree height is a final document.⁵⁴

We recommend that shoreline jurisdiction should continue to include the 100-year flood plain⁵⁵ and that the buffers for river and stream shoreline be increased to use the newly recommended 200-year SPTH of 235 feet and that this width should be measured from the edge of the channel, channel migration zone, or active floodplain whichever is wider.⁵⁶ New development, except water dependent uses should not be allowed within this area.⁵⁷ This will help maintain shoreline functions and Chinook habitat.

Clarify that the SMP protects fish and wildlife habitats depicted in the PHS GIS database as points, lines, and areas and requires review of all development that can adversely impact these habitats. Please see CCC 40.460.530F.1.a.(4) and CCC 40.460.530F.2 on page 59

⁵¹ *Id.* at p. 270.

⁵² *Id.* at p. 271.

⁵³ Amy Windrope, Timothy Quinn, Keith Folkerts, and Terra Rentz, *Riparian Ecosystems, Volume 2: Management Recommendations* p. A2-3 (A Priority Habitat and Species Document of the Washington Department of Fish and Wildlife, Olympia: May 2018 Public Review Draft) last accessed on Aug. 11, 2020 at: <https://wdfw.wa.gov/publications/01988/> and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “wdfw01988.pdf.”

⁵⁴ Timothy Quinn, George F. Wilhere, and Kirk L. Krueger, technical editors, *Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications* p. 270 (A Priority Habitat and Species Document of the Washington Department of Fish and Wildlife, Olympia, WA: Updated Jan. 2020) last accessed on Aug. 17, 2020 at: <https://wdfw.wa.gov/publications/01987/>.

⁵⁵ Authorized by RCW 90.58.030(2)(d)(i).

⁵⁶ Amy Windrope, Timothy Quinn, Keith Folkerts, and Terra Rentz, *Riparian Ecosystems, Volume 2: Management Recommendations* p. A2-8 (A Priority Habitat and Species Document of the Washington Department of Fish and Wildlife, Olympia: May 2018 Public Review Draft).

⁵⁷ Timothy Quinn, George F. Wilhere, and Kirk L. Krueger, technical editors, *Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications* pp. 270 – 71 (A Priority Habitat and Species Document of the Washington Department of Fish and Wildlife, Olympia, WA: Updated Jan. 2020).

The Shoreline Master Program (SMP) Guidelines in WAC 173-26-221(2)(a)(ii) provide that shoreline master programs “must” “[p]rovide a level of protection to critical areas within the shoreline area [including fish and wildlife habitat conservation areas] that assures no net loss of shoreline ecological functions necessary to sustain shoreline natural resources[.]”⁵⁸ WAC 173-26-191(2) provides in relevant part that “[t]he terms ‘shall,’ ‘must,’ and ‘are required’ and the imperative voice, mean a mandate; the action is required ...”

The actual location of most fish and wildlife habitats are identified through the Washington Department of Fish and Wildlife’s (WDFW) Priority Habitats and Species (PHS) geographic information system maps and datasets.⁵⁹ This habitat data is depicted as points, lines, and polygons, the polygons are also referred to as areas.⁶⁰ The screen shots from the PHS on the Web website show various habitats in unincorporated Clark County.⁶¹ As you can see, the habitats are shown as lines and areas. The line habitats include the federally threatened Coho and Chinook salmon. The area habitats include the state endangered Sandhill Crane and waterfowl concentrations.⁶² However, the current shoreline master program does not clearly protect the area and line habitats. CCC 40.460.530F.1.a.(4) only requires review for developments that are near but will impact out of water priority species and habitats for point habitats, not line or area habitats.

The Public Comment Summary: Clark County SMP Periodic Review 2020 in its response to Comment 8-6 on page 10 of 19 states that the SMP protects all habitats including points, lines, and areas. But CCC 40.440.010C.1.b and CCC 40.460.530F.1.a.(4) only requires review of developments within 1,000 feet of point habitats. CCC 40.460.530F.2.a. only requires review for “proposals” that require county approval “with a habitat area . . .” CCC 40.460.530F.2.b. only requires consultation with the Washington Department of Fish and Wildlife for “[p]roposed new single-family residential development occurring immediately outside but within three hundred (300) feet of designated priority species habitat polygons or within one hundred (100) feet of designated nonriparian priority habitat polygons . . .”

However, The Washington Department of Fish and Wildlife management recommendations provide that during the March to September breeding season road and foot travel should be avoided within 1,312 feet of nests.⁶³ New construction or traffic increases within 2,625 feet of feeding areas

⁵⁸ The SMP Guidelines specifically recognize fish and wildlife habitat conservation areas as critical areas. WAC 173-26-020(8); WAC 173-26-221(2)(a)(ii).

⁵⁹ Washington Department of Fish and Wildlife, *Using PHS Data: Frequently Asked Questions* pp. 1 – 2 of 5 last accessed on Aug. 11, 2020 at <http://apps.wdfw.wa.gov/phsontheweb/faq.htm> and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “PHS on the Web FAQs.pdf.”

⁶⁰ *Id.* at 1 – 2 of 5; Washington Department of Fish and Wildlife, PHS on the Web screen shots pp. 1 – 4 accessed on Feb. 18, 2020 at: <http://apps.wdfw.wa.gov/phsontheweb/> and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “2020-02-18_10-37-06 PHS on Web Clark Co.pdf.” materials.

⁶¹ Washington Department of Fish and Wildlife, PHS on the Web screen shots pp. 1 – 4.

⁶² *Id.* at pp. 1 – 3; Washington Department of Fish and Wildlife, Priority Habitats and Species identified for Clark County accessed on Aug. 11, 2020 at: <https://wdfw.wa.gov/species-habitats/at-risk/phs/list> and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “Copy of 2019_distribution_by_county.xls.”

⁶³ Kelly A. Bettinger and Ruth Milner Sandhill Crane *Grus canadensis* (2000) in E. Larsen, J. M. Azerrad, N. Nordstrom, editors *Management Recommendations for Washington’s Priority Species, Volume IV: Birds* p. 19-3 (Washington Department of

should be avoided.⁶⁴ And the construction of roads and buildings within 1,640 feet of known night roost locations should be avoided.⁶⁵ But Clark County's regulations allow development within these areas that must be protected.

WAC 173-26-221(2)(a)(ii) requires no net loss of all fish and wildlife habitat conservation areas including the habitats shown in the databases as areas and lines.⁶⁶ By failing to protect habitats depicted as lines and areas from nearby development, CCC 40.460.530F.1.a.(4) fails to comply with this requirement. To address this inconsistency with the SMP Guidelines, we recommend that the following amendment to CCC 40.460.530F.1.a.(4) with our additions double underlined and our deletions double struck through.

(4) Other Priority Habitats and Species ~~(PHS)~~ Areas (PHS) as defined in the most current WDFW Priority Habitats and Species List. ~~Areas identified by and consistent with WDFW priority habitats and species criteria,~~ including areas within one thousand (1,000) feet of individual priority habitats and areas used by priority species ~~points mapped by WDFW sites~~. The county shall defer to WDFW in regards to classification, mapping and interpretation of priority habitat species. Determination of habitat categories applicable to a site shall be based on the definitions and Best Available Science that were current at the time the application under review is vested pursuant to Chapter 40.510.

Also to address this inconsistency with the SMP Guidelines, we recommend that the following amendment to CCC 40.460.530F.2 with our additions double underlined and our deletions double struck through. In addition, the regulations should avoid the use of terms no longer used by Fish and Wildlife such as polygons to avoid confusion and a lack of protection.

a. All construction, development, earth movement, clearing, or other site disturbance proposals within a habitat area or an area that must be managed or protected to maintain the functions of the habitat area ~~which require a permit, approval, or other authorization from the county~~ shall be reviewed pursuant to Chapter 40.440 and shall comply with the requirements of this section.

Fish and Wildlife, Olympia, Washington, USA) accessed on Aug. 11, 2020 at: <https://wdfw.wa.gov/sites/default/files/publications/00026/wdfw00026.pdf> and on the CAO on CD on CD 1 enclosed with Futurewise's Feb. 25, 2020, letter in the \Fish & Wildlife Habitat\PSH Management Recs directory with the filename: "wdfw00026.pdf."

⁶⁴ *Id.* at p. 19-4.

⁶⁵ *Id.*

⁶⁶ *Olympic Stewardship Found. v. State Env'tl. & Land Use Hearings Office through W. Washington Growth Mgmt. Hearings Bd.*, 199 Wn. App. 668, 690, 399 P.3d 562, 572 (2017) *review denied Olympic Stewardship Foundation v. State Department of Ecology*, 189 Wn.2d 1040, 409 P.3d 1066 (2018) and *certiorari denied Olympic Stewardship Foundation v. State of Washington Environmental and Land Use Hearings Office*, 139 S.Ct. 81, 202 L.Ed.2d 25 (Oct. 01, 2018) "In fact, reasonable and appropriate uses should be allowed on the shorelines only if they will result in no net loss of shoreline ecological functions and systems. See RCW 90.58.020; WAC 173-27-241(3)(j)." See also *Futurewise v. Stevens County*, EWGMHB Case No. 05-1-0006, Final Decision and Order (Jan. 13, 2006), at 2 *affirmed Stevens Cty. v. Futurewise*, 146 Wn. App. 493, 497, 192 P.3d 1, 3 (2008) *review denied Stevens Cty. v. Futurewise*, 165 Wn.2d 1038, 205 P.3d 132 (2009).

b. Proposed new single-family residential development occurring ~~immediately outside~~ but within three hundred (300) feet of designated priority species habitat ~~polygons or an area that must be managed or protected to maintain the functions of the habitat area if larger than three hundred feet (300) within one hundred (100) feet of designated nonriparian priority habitat polygons~~ shall require consultation with WDFW prior to issuance of a development permit. In such cases, further review under this section is not required unless WDFW finds that there are potential adverse impacts.

Require wider setbacks between development and shoreline and critical areas buffers to protect homes and property from wildfire danger. Please see Clark County Code (CCC) 40.460.530H. on page 63

The Washington Department of Natural Resources' database of wildfires on the lands protected by the agency lists more than 1,050 fires in Clark County between 1970 and January 2016.⁶⁷ Climate change has the potential to increase wildfire risk through changes in fire behavior, wildfire ignitions, fire management, and the vegetation that fuels wildfire.⁶⁸

Setbacks from critical areas buffers provide an area in which buildings can be repaired and maintained without having to intrude into the buffer. It also allows for the creation of a Home Ignition Zone that can protect buildings from wildfires and allow firefighters to attempt to save the buildings during a wildfire. Since a 30-foot-wide Home Ignition Zone is important to protect buildings,⁶⁹ we recommend that CCC 40.460.530H. require a setback at least 30 feet wide adjacent to shoreline and critical area buffers. Combustible structures, such as decks, should not be allowed within this setback to protect the building from wildfires. This will increase protection for people and property. We recommend that a new CCC 40.460.530H. be adopted to read as follows with our additions double underlined.

H. There shall be a building setback of thirty (30) feet established on the landward or development facing edge of any buffer required by this chapter. The setback shall be an open space that may include landscaping and paved surfaces. Buildings, decks, architectural features, and combustible structures shall not be constructed in the setback.

⁶⁷ Tetra Tech, *Clark Regional Natural Hazard Mitigation Plan Volume 1 — Planning Area-Wide Elements* p. 14-3 (Clark Regional Emergency Services Agency: Final Aug. 2017) last accessed on Aug. 11, 2020 at: http://cresa911.org/wp-content/uploads/2018/04/ClarkCoHazMitPlan_Volume1_Final_2017-09-21v2-2.pdf and on the data CD enclosed with Futurewise's Feb. 25, 2020, letter transmitting supporting materials with the filename: "ClarkCoHazMitPlan_Volume1_Final_2017-09-21v2-2.pdf."

⁶⁸ *Id.* at p. 14-15.

⁶⁹ Nation Fire Protection Association "preparing homes for wildfire" webpage last accessed on Aug. 11, 2020 at: <https://www.nfpa.org/Public-Education/By-topic/Wildfire/Preparing-homes-for-wildfire> and on the data CD enclosed with Futurewise's Feb. 25, 2020, letter transmitting supporting materials with the filename: "NFPA - Preparing homes for wildfire.pdf."

Increase mitigation ratios for riparian vegetation mitigation in CCC 40.460.570D., part of the Clark County Shoreline Master Program, to protect fish and wildlife habitats

No net loss of ecological functions is a requirement for shoreline management programs.⁷⁰ A peer-reviewed study concluded that “[i]t appears that riparian habitats are much more difficult to compensate for because 57% of projects sampled for this variable resulted in a net loss and no projects achieved a net gain.”⁷¹ The study continued “even if projects were entirely compliant and created twice as much compensation habitat compared to the [impacted habitat], the Habitat Policy goal of [no net loss] NNL would still not always be achieved.”⁷²

Mitigation ratios of 1 to 1 will not result in no net loss for riparian vegetation. We recommend that CCC 40.460.570D be amended to read as follows with our additions double underlined.

D. If vegetation removal cannot be avoided, it shall be minimized and then mitigated at a minimum ratio of one to one (1:1), and shall result in no net loss of shoreline ecological functions. Riparian vegetation shall be replaced at a ratio of 2.25 in mitigation area to 1 of the area adversely impacted. Lost functions may be replaced by enhancing other functions; provided, that no net loss in overall functions is demonstrated and habitat connectivity is maintained. Mitigation shall be provided consistent with an approved mitigation plan.

We support that CCC 40.460.630B. on page 65 provides that net pen aquaculture for nonnative species must comply RCW 77.125.050(1)

RCW 77.125.050(1) provides that the State of Washington Department of Natural Resources “may authorize or permit activities associated with the use of marine net pens for nonnative marine finfish aquaculture only if these activities are performed under a lease of state-owned aquatic lands in effect on June 7, 2018. The department may not authorize or permit any of these activities or operations after the expiration date of the relevant lease of state-owned aquatic lands in effect on June 7, 2018.” Futurewise supports that CCC 40.460.630B. on page 65, provides that net pen aquaculture for nonnative species must comply RCW 77.125.050(1). This is necessary to protect water quality and native species.

Futurewise supports incorporating the amendments suggested by the Washington State Department of Ecology on the “Public Comment Summary: Clark County SMP Periodic Review 2020” on pages 12 – 19 of 19

⁷⁰ WAC 173-26-186(8)(b) & (d); WAC 173-27-241(3)(j).

⁷¹ Jason T. Quigley and David J. Harper, *Effectiveness of Fish Habitat Compensation in Canada in Achieving No Net Loss* 37 ENVIRONMENTAL MANAGEMENT 351, p. 356 (2006) and on the data CD enclosed with Futurewise’s Feb. 25, 2020, letter transmitting supporting materials with the filename: “Effectiveness of Fish Habitat Compensation in Canada in Achieving No Net Loss 2006.pdf.” This article was peer-reviewed. *Id.* at p. 364.

⁷² *Id.* pp. 361 – 62.

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Futurewise supports incorporating the amendments suggested by the Washington State Department of Ecology on the “Public Comment Summary: Clark County SMP Periodic Review 2020” on pages 12 – 19 of 19. Overall, these changes will result in better shoreline management.

Thank you for considering our comments. If you require additional information, please contact me at telephone 206-343-0681 Ext. 102 and email: tim@futurewise.org.

Very Truly Yours,



Tim Trohimovich, AICP
Director of Planning and Law

Enclosure

	Species/ Habitats	State Status	Federal Status	** Important Note **
Habitats	Aspen Stands			<p>These are the species and habitats identified for Clark County. This list of species and habitats was developed using the distribution maps found in the Priority Habitat and Species (PHS) List (see http://wdfw.wa.gov/conservation/phs/). Species distribution maps depict counties where each priority species is known to occur as well as other counties where habitat primarily associated with the species exists. Two assumptions were made when developing distribution maps for each species:</p> <p>1) There is a high likelihood a species is present in a county, even if it has not been directly observed, if the habitat with which it is primarily associated exists.</p> <p>2) Over time, species can naturally change their distribution and move to new counties where usable habitat exists.</p> <p>Distribution maps in the PHS List were developed using the best information available. As new information becomes available, known distribution for some species may expand or contract. WDFW will periodically review and update the the distribution maps in PHS list.</p>
	Biodiversity Areas & Corridors			
	Herbaceous Balds			
	Old-Growth/Mature Forest			
	Oregon White Oak Woodlands			
	West Side Prairie			
	Riparian			
	Freshwater Wetlands & Fresh Deepwater			
	Instream			
	Caves			
	Cliffs			
	Snags and Logs			
	Talus			
	Fishes	Pacific Lamprey		
River Lamprey		Candidate		
Green Sturgeon			Threatened	
White Sturgeon				
Leopard Dace		Candidate		
Mountain Sucker		Candidate		
Eulachon		Candidate	Threatened	
Bull Trout/ Dolly Varden		Candidate *	Threatened *	
Chinook Salmon		Candidate	Threatened (Upper Columbia Spring run is Endangered)	
Chum Salmon		Candidate	Threatened	
Coastal Res./ Searun Cutthroat			Species of Concern	
Coho Salmon			Threatened – Lower Columbia Species of Concern – Puget Sound	
Kokanee				
Pink Salmon				
Rainbow Trout/ Steelhead/ Inland Redband Trout		Candidate **	Threatened **	
Sockeye Salmon	Candidate	Threatened – Ozette Lake Endangered – Snake River		
	Cascade Torrent Salamander	Candidate		

Amphibians	Larch Mountain Salamander	Sensitive	
	Oregon Spotted Frog	Endangered	Threatened
	Western Toad	Candidate	
Reptiles	Western Pond Turtle (formerly Pacific Pond Turtle)	Endangered	
Birds	Western grebe	Candidate	
	Great Blue Heron		
	Cavity-nesting ducks: Wood Duck, Barrow's Goldeneye, Common Goldeneye, Bufflehead, Hooded Merganser		
	Western Washington nonbreeding concentrations of: Barrow's Goldeneye, Common Goldeneye, Bufflehead		
	Trumpeter Swan		
	Tundra Swan		
	Waterfowl Concentrations		
	Golden Eagle	Candidate	
	Northern Goshawk	Candidate	
	Mountain Quail		
	Sooty Grouse		
	Sandhill Crane	Endangered	
	W WA nonbreeding concentrations of: Charadriidae, Scolopacidae, Phalaropodidae		
	Band-tailed Pigeon		
	Northern Spotted Owl (formerly called Spotted Owl)	Endangered	Threatened
	Vaux's Swift	Candidate	
	Pileated Woodpecker	Candidate	
	Slender-billed White-breasted Nuthatch	Candidate	Species of Concern
Oregon Vesper Sparrow	Candidate		
Mammals	Roosting Concentrations of: Big-brown Bat, Myotis bats, Pallid Bat		
	Townsend's Big-eared Bat	Candidate	
	Fisher	Endangered	Species of Concern
	Marten		
	Columbian Black-tailed Deer		
	Columbian White-tailed Deer	Endangered	Endangered
	Elk		

Invertebrates

California Floater

Candidates

* Bull Trout only
** Steelhead only